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The effects of the Mobile-Assisted Language Learning Method in the EFL/ESL Context

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Resumen

Esta síntesis de investigación se desarrolló con la finalidad de identificar los efectos y percepciones del uso de actividades basadas en el aprendizaje asistido por la tecnología móvil en la enseñanza del inglés como segunda lengua (ISL) o como lengua extranjera (IEL). Veintidós estudios de diferentes bases de datos fueron considerados para el análisis. Los criterios de inclusión comprendieron, (1) estudios empíricos publicados en los últimos diez años, (2) estudios con el método cualitativo, cuantitativo o mixto, (3) estudios llevados a cabo en las aulas de ILE o ISL, (4) y, por último, estudios aplicados a los diferentes niveles de educación. Por otra parte, los criterios de exclusión considerados fueron los siguientes (1) estudios que no han sido publicados en fuentes académicas, (2) estudios que han usado un método diferente al cualitativo, cuantitativo o mixto, (3) estudios en los que los participantes no pertenecen a las aulas de ILE o ISL. Los hallazgos revelaron que, en relación a los efectos lingüísticos como a los no lingüísticos, el aprendizaje móvil representa una excelente oportunidad para que los estudiantes desarrollen sus habilidades de aprendizaje, así como su motivación y autonomía. El estudio también reveló que, tanto los docentes como estudiantes apoyan fuertemente el uso del aprendizaje móvil. Sin embargo, también se encontró algunas barreras en cuanto a su efecto y percepciones. Por lo tanto, se recomienda a los docentes incluir tecnología móvil para reforzar las habilidades de aprendizaje de los estudiantes. Finalmente, debido a la falta de estudios del aprendizaje del lenguaje asistido por tecnología móvil en Latinoamérica, se sugiere más investigaciones que analicen la eficacia de este método en este lado del planeta.

Palabras clave: inglés como lengua extranjera (IEL), aprendizaje asistido por tecnología móvil, efectos, percepciones

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Abstract

This research synthesis was developed to identify the effects and perceptions of MALL- based activities in the EFL/ESL teaching-learning process. Twenty-two studies from different databases were considered for the analysis. The inclusion criteria of this study included (1) Empirical studies published in the last ten years, (2) quantitative, qualitative, and mixed-methodstudies, (3) the studies performed in EFL/ESL classrooms, (4) and, the studies applied at different levels of education. In respect to the exclusion criteria, it was considered the following:

(1) the studies published in non-academic sources, (2) the studies that used a design different from quantitative, qualitative, and mixed-method approach, (3) the studies whose participants did not belong to EFL/ESL classrooms. Findings exposed that, in relation to the linguistic effects as well as the non-linguistic effects, m-learning represents an excellent opportunity for students to develop their learning skills, as well as their motivation and autonomy. This study also revealed that teachers and students strongly support the use of MALL. However, it also revealed a few barriers to its effects and perceptions. Therefore, it is recommended for teachers to include m-learning to help students gain success in the development of each of the language learning skills. Finally, due to the lack of studies of Mobile Learning in Latin America, further research on the efficacy of MALL is suggested.

Keywords: English as a Foreign Language (EFL), MALL,effects, perceptions.

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Dedication

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Introduction

Modern technology provides human lives with many inventions that can be used for educational purposes (Yudhiantara & Nasir, 2017). Doan (2018) suggests that "With the growingversatility and accessibility in " today's society, mobile devices have been emerging as a fertile ground for more innovative and effective language learning environments" (p.47). Since this toolemerged, it has played an essential role in shaping our life. That is why research in the teaching and learning EFL area has been trying to get the benefits m-learning can bring to language learning, and some authors demonstrated that m-learning activities positively impact the new language acquisition (Yudhiantara, & Nasir, 2017; Machmud, & Abdulah, 2017; Ko, 2019).

These tools can offer multiple features like browse the internet, send and receive emails, chat, video chat, video and audio recording, and other daily tasks that can be used for students anywhere and anytime. However, Machmud and Abdulah (2017) express that because mobile devices are groundbreaking tools of the current decade, little is known about the benefits and effects of adopting them in the EFL classroom.

Mobile devices offer multiple functions and affordances based on their size, input and output avenues, ability to access information, and store information (Al-Said, 2015; Mehdipour & Zerehkafi, 2013; Machmud &Abdulah, 2017). Quinn (2017) says that mobile devices have what he calls the "4Cs of mobile: content, compute, communicate, and capture" (p.245). The same author explains that the facility to access a big amount of content, to communicate with others, and to capture both context and content does not make mobile devices unique; what reallymakes mobile devices unique is that they have the capability to do all of those activities within that one device at the same time and place.

While many authors recognize the potential efficacy of mobile devices in educational settings (Al-Said, 2015; Mehdipour & Zerehkafi, 2013; Machmud &Abdulah, 2017), it is English as a foreign language subject that better adopted this technology (Miller, 2018). This isbecause the capability to access authentic audio and visual material, without being limited by time, or space, permits the learners a lot of opportunities for the comprehension of the materials(Machmud &Abdulah, 2017). Therefore, this research synthesis aims to find critical information about the effects of theMobile-Assisted Language Learning Method in the EFL/ESL classroom.

Chapter I

Description of the Research

1.1. Background

According to Loyens and Gijbels (as cited in Tayan, 2017), the constructivist learning perspective emphasizes that people learn, understand, and solve problems when they understand, experience, and know the world. In other words, people acquire knowledge easily when they are involved in communities with shared interests and understanding of the environment. Moreover, Muir-Herzing (as cited in Tayan, 2017) states that the use of communications technologies (ICT's), including Mobile devices, complements Constructivist Learning because in the present-days Mobile-Learning is well suited among the new generations. For Tayan (2017), continuous contact with this technology causes a real-life context; consequently, the active interaction with the real life-context increases the learning experience.

Many educators have shared a common criterion about the effectiveness of integrating mobile devices in educational programs, and more recently, about smartphones (Davie & Hilver, 2015; Klímová 2017). They consider that mobile devices play an essential role in cognitive development because they bring a real-context of learning; these devices are a potential learning resource because of their portability and their multiple functions to promote the learner's activity itself (Darmi & Albion, 2017; Davie & Hilver, 2015). In addition, Mehdipour and Zerehkafi (2013) list several characteristics that make mobile phones a potential resource for education, such as portability, individuality, unobtrusiveness, availability, adaptively, persistence, usefulness, and usability.

Machmud and Abdulah (2017) say that everyone wants to own a mobile device since it became an immediate need in everyday routines. Wagner (as cited in Davie & Hilber, 2017) confirms that "mobile phones are a natural choice for use in mobile learning as the majority of the students have already adopted them" (p.71). It means that students do not need a lot of training to manage these devices. Thanks to their ubiquitous nature among young adults, mobile devices are nowadays widely exploited to support teaching and learning, including language learning (Klimová, 2017).

Researchers on English learning reveal that the use of mobile devices facilitating learning is evident. Students become more self-aware, self-reliant, and more focused on the desire to learn (Tayan, 2017). They are more exposed to formal and informal learning experiences by interacting with each other through blogging, online discussions, forums, interactive applications, social media, and games (Machmud & Abdulah, 2017). Moreover, the same authorsalso say that many tasks are possible with the help of these devices: internet connection, send and receive emails, chat, video chat, download learning material, listen to audios, take pictures, and others. These multiple characteristics create positive emotions in learners that allow the learning process to be more engaging (Sarhandi, Bajnaid, & Elyas, 2017).

After all, as explained by Sevari (as cited in Machmud & Abdulah, 2017), there are sometypes of learning through m-learning: learning through sound, learning through short text message, learning through a graphical display, learning through information obtained from data,learning through an internet search, and learning through a camera and video clips.

1.2. Statement of the problem

One of the biggest challenges that educators face is keeping the current generation of students engaged and motivated during the language learning process (Sarhandi et al., 2017; Klímová, 2017; Yudhiantara, & Nasir, 2017). However, Machmud and Abdulah (2017) stated that the limited time per each meeting is not enough to develop a large class's four skills. Sarhandi, et al. (2017) state that the solution to the lack of students' engagement is the adoption of mobile technology, so they encourage the incorporation of this resource in the classroom. Thesame authors also say that Mobile devices have been successfully integrated into the curriculumof many institutions worldwide. Moreover, a research study completed by 'O'Brien and Toms (as cited in Sarhandi et al., 2017) found that the successful integration of these tools into the educational process is attributed to the aesthetic and sensory appeal, feedback, novelty, interactivity, perceived control, time awareness, motivation, and interest.

In addition, educators worldwide are concerned about keeping their students engaged and motivated (Sarhandi et al., 2017). There is a gap between the teacher's desire to keep their students engaged and mobile devices to fill that void. However, as many researchers suggest, students show positive emotions toward using mobile devices (Sarhandi et al., 2017; Yudhiantara& Nasir, 2017). For this reason, teachers need to use technology because learners who were borninto the modern world are more open to new technology and more willing to experiment with them in a wide variety of contexts (Ko, 2019).

Mobile technology is not frequently used in the classroom due to certain possible factors.Some of these are the lack of knowledge about the benefits they can bring, the lack of training, fears

of inappropriate use, and negative perceptions about the consequences these devices may bring (Alzubi, 2019). Therefore, between the students' preferences (Ko, M.-H (2019) and the teachers' avoidance of mobile devices (O'Bannon et al., 2017), a potential gap is evidenced.

1.1. Rationale

The demand of mobile devices is getting more prominent as the years go by among the young population (Yavuz, F. 2016). Therefore, the current decade faces a solid need to implement those devices in the language learning process, including English as a Foreign Language (EFL) learning (Klímová, 2017).

Smith (2017) states that "smartphones are nearly ubiquitous among younger adults, with 92% of 18- to 29-year-olds owning one" (p.1). Hilao and Wichadee (2017) consider that these tools can be used in the learning process by saying that "Mobile technology that has a huge impact on students' lives in the digital age may offer a new type of learning" (p.68). These tools have been hugely influencing students' learning. In the Ecuadorian context, a study carried out by the Instituto de Estadísticas y Censo (2018) reported that in 2018 the percentage of smartphone users aged five and up overreached 41,4% concerning the year 2012 that was 6,2%. As the number of smartphone users increases each year in Ecuador, educators may look for the most effective techniques to integrate this tool in the teaching and learning process.

In the current decade, the English ability for speech is recognized as an essential competence to achieve a university degree. However, one of the biggest problems educators face worldwide when teaching EFL is to ensure that their students stay engaged and motivated during the class performance (Alzubi, 2019; Sarhandi, Bajnaid, & Elyas, 2017; Ko, 2019). Mobile technology offers a new way of transferring knowledge that is not confined by time and place. It can effectively engage learners in learning activities and improve their comprehension and retention of learning material (Kukulska-Hulme, 2015). Nevertheless, many teachers are not even considering using mobile devices for teaching because of the lack of training, and fears of inapropiate use (Ozdamli &.Uzunboylu, 2015).

Based on what has been presented in this section, this bibliographic study aims to determine the effect of MALL based-activities on EFL/ESL classrooms.

1.2. Research Questions

The following research questions will be addressed:

1. What are the effects of the use of the Mobile-Assisted Language Learning Method in the EFL/ESL classroom?

2. What are the students' and teachers' perceptions of using the Mobile-Assisted Language Learning Method in EFL/ESL classrooms?

1.3. Objectives

1.5.1. General objective:

To identify the effects and perceptions that have been reported on the application of MALL-based activities in the EFL/ESL teaching-learning process.

1.5.2. Specific objectives:

To analyze the effects of MALL-based activities in EFL/ESL classrooms.

To analyze students' and teachers' perceptions towards the use of mobile devices in EFL/ESL classrooms.

Chapter II

1. Theoretical Framework

1.1. Introduction

This section serves the purpose of summarizing the most important definitions and theories that connect to the study. This section starts with the definition and history of Mobile- Assisted Language Learning (henceforth MALL) and the Constructivist learning theory. After that, it includes MALL as a tool to teach in EFL/ESL classrooms and motivation in M-Learning.

1.2. MALL: Mobile-Assisted Language Learning

1.2.1. Definition of MALL

Many researchers have named Mobile-Assisted Language with different names, but its meaning focuses on learning using mobile devices. According to Mehdipour and Zerehkafi (2013), MALL is known as M-Learning, U-Learning, personalized learning, learning while mobile, ubiquitous learning, anytime/anywhere learning, and handheld learning. Additionally, it has different meanings. For example, for O'Malley, C et al., 2005, MALL is "any sort of learning that happens when the learner is not at a fixed, predetermined location, or learning that happens when the learner takes advantage of the learning opportunities offered by mobile technologies'' (p.7). Likewise, in the educational settings, for Traxler (2009) and Zhao (2005), m-learning is providing education with modern technologies such as smartphones, tablets, MP3/MP4 players, personal digital assistants (PDAs), and palmtop computers to support students' language acquisition. Attewell, J., Savill-Smith, C., & Douch, R. (2009) explain that m-learning is the use of portable devices to facilitate and enhance the process of teaching and learning. Lastly, in the Handbook of Mobile Learning, of Muilenburg and Berge (as cited in Miller, 2018) m- learning is defined as "learning across multiple contexts, through social and content interactions, using personal electronic devices'' (p. 65).

In other words, MALL is the capacity to use mobile technologies to support the acquisition of language in multiple contexts. Moreover, learning through mobile devices can happen inside or outside the classroom, with or without the direction of a tutor, and in different environments (Miller, 2018).

1.2.2. History of MALL

The advances of wireless technologies have created a wide array of new possibilities for technology users, and with these technologies, a new type of learning has emerged (O Malley, C et al., 2005). This new type of learning refers to learning a second language by using mobile technologies, something that was impossible to imagine decades ago when "(...) the concepts of learning and teaching was almost restricted in traditional classroom environments" (Gholami, & Azarmi, 2012, p. 2). This traditional education required the teacher to present the new information to students via textbooks and chalkboards in a classroom (Beale, 2007).

Nevertheless, since this type of learning does not allow the teachers to control learners beyond the classroom environments, teachers started to redesign the learning materials in classrooms that provided students with abundant, authentic opportunities to acquire knowledge (Gholami, & Azarmi, 2012). Researchers call this new type of learning MALL (Mobile-AssistedLanguage Learning). Although the current interest in MALL is a recent phenomenon that appeared with interest in WWW [World Wide Web] that was created in 1992, the history of learning with technologies goes back much further (O'Malley, et al., 2005). In the following paragraphs, some dates about the evolution of MALL from its first signs of a computer assistinglearning until the current decade are presented.

In the 1950s, the audiolingual theory generalized the use of language laboratories in

educational settings (Salaberry). Under the influence of behaviorism, the lab idea was gradually substituted by drill-based computer-assisted instructions that were supplanted by "a more intelligent, interactive and multimedia computer-assisted language learning" (Chinnery, 2006, p. 9). Research completed by Suppes and Macken (1978) indicated that the substitution of the labs would have begun in 1960 with the IBM's first courseware authoring system for Computer-Assisted Learning (CALL), marking the most reasonable starting date for MALL.

By 1970, the effectiveness of the use of technology for teaching was rejected by the information processing approaches, which showed insufficient motivation and context/meaning(O Malley, C et al., 2005). However, at that time, Anderson and Schunn (2000), in their work about the Adaptive Control of Thought (ACT) family of tutoring systems, proved that the use oftechnology for the teaching process is the most successful in developing tutoring systems.

Miangah and Nezarat (2012) explain that these days the task of language acquisition created anecessity for using mobile devices by saying that;

> When, in 1973, mobile devices were invented for the first time, no one ever thought someday they would become an essential part of routine life. As soon as mobile phones became a crucial part of our lives, there felt a need for using them in language learning

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tasks (p.312).

At the beginning of the 90s, the popularity of the internet or [WWW] potentially increased the development of computer-mediated communications such as PDAs or laptops that called the attention of the researchers worried about the educational progress (Chinnery, 2006). The same author says that "it is only over the past ten years that mobile learning has developed as a set of significant projects in schools, workplaces, museums, cities and rural areas around theworld" (p. 3-4).

1.2.3. MALL and Constructivist Learning

The constructivist learning theory states that people learn, understand, and solve problems based on their previous understanding, experiences, and knowledge of the world (Loyens & Gijbels, 2028). In addition, Vygotsky (1998) has proposed what he called the zone ofproximal development (ZPD), which refers to the space between the actual development level and the level of potential development under the guidance of a peer with more knowledge.

According to Siddique (2017), when a tutor, teacher, or peers provide a student with enough assistance to complete a task that he/she cannot accomplish by him/herself, the student will reach the next level of ZPD. Moreover, in constructivist learning, the teacher takes the role of a tutor or motivator, encouraging the students to discover their knowledge (Siddique, 2017).

Moreover, Tayan (2017) mentioned that learners construct their knowledge by saying that "learners do this by applying ideas, concepts and approaches based on their prior knowledge and life experiences to new constructs, regardless of their location" (p. 76). Similarly, Rau, Gao, and Wu (2008) suggest that it is much better since students construct their knowledge based on their experiences to relate it in future contexts, rather than having knowledge given by their teachers. Tayan (2017) also argues that "the approach facilitates social and communication skills by creating a learning environment that emphasizes the integration, collaboration, exchange and sharing of ideas and knowledge" (p. 77).

For the Constructivist approach, students represent active learners rather than passive listeners (Tayan, 2017). Besides, constructivism is better connected to mobile technologies through participatory simulation learning experiences (Sarhandi et al., 2017; Darmi, & Albion, 2017). Here, teachers adopt the role of a facilitator, and students engage actively in activities thatthey are interested in as part of a wider dynamic environment. On purpose, the present study analyzes how students interact through networked devices, which according to Kukulska-Hulme,& Shield (2008), allows learners to participate in their learning environment. In addition, a Virtual Learning Environment (VLE) allows students to participate and interact in the virtual environment, which lends to enriched language acquisition. For that reason, learners become witnesses to how their

actions affect their space as a whole (Tayan, 2017).

For Muir-Herzig (2004), the application of communication technologies (ICTs) as smartphones complements constructivist learning because students participate in the process of language learning actively, and in MALL the learning through mobile devices can happen in or out of the classroom, with the direction or not of a tutor, and in different environments.

Additionally, Vavoula, Sharples, & Taylor (2007) argues that the process of learning becomes evident when given particular characteristics like portability and convenience to technologies. Tayan (2017) confirms this argument by saying that "…with technology use, learners become more self-aware, self-reliant and more focused on the desire to learn" (p. 77).

1.2.4. MALL as a Tool to Teach in EFL Context

Discerning that MALL refers to any type of learning that takes place in learning contexts that take into account technological mobility, student mobility, and learning mobility (El- Hussein & Cronje, 2010), mobile learning is becoming one of the most effective teaching methods in higher education. (Montrieux, Vanderlinde, Schellens, & De Marez, 2015) In addition, technology has replaced traditional ways of language learning and the integration of mobile devices in the educational field is an emerging phase (Ahmed, 2015). Besides, the previously mentioned author stated that the widespread use of broadband wireless networks and the inexpensive internet services offered by mobile operators make it evident that they have immense possibilities in EFL learning because MALL increases learners' exposure to the target language.

Furthermore, the use of mobile devices might be considered a tool in EFL classrooms because, as Clark and Luckin (2013) stated, it will enhance students' active learning and collaborative problem-solving skills inside or outside the classroom. In addition to that, Miangah and Nezarat (2012) mentioned, mobile phones are relatively inexpensive compared with laptops, fulfilling the need of teachers to provide tools and software for learners very easily. The same authors also say that, as mobile devices with high capabilities influence all areas of human life, it is expected that these tools will soon become accessible everywhere in each country. At present (2021), smartphones have become the most popular mobile device to support language learning activities since these tools provide students with an enormous range of capabilities that facilitate teacher-student and student-teacher communication during the activities (Yu & Sukying, 2021). According to Kukulska-Hulme (2016), mobile technology has three features: constant and immediate help, inclusive education (helps learners overcome the learning barriers), and several uses without any prior request. In line with this, Jaldemark (2018) states these features can be applied in formal settings in educational institutions such as university, school, college, and in informal learning settings such as home, entertainment, or at work. Therefore, employing mobile

devices in teaching and learning EFL can personalize the learning experience, and encourage students to share their own learning content and drive away boredom from the classroom and stimulate creativity and engagement (Ahmed, 2015).

1.3. Motivation and Autonomy in M-learning

In general, motivation is considered to be the primary moving force for the success of any learning activity. (Baby, 2019) As Arce (2016) stated, its concept has been influenced by different fields, and although it is a widespread term, it is not easy to define. For Julkenen (2001), "motivation in a classroom context is a continuous interaction between the learner and the environment" (p.29). In the field of second language learning, motivation, as Kissau (2006) stated, is "the extent to which the individual works or strives to learn the language because of the desire to do so." (p.76). Motivation cannot be directly observed from outside; it can be inferred from its products such as behaviors including choice of task, effort, desire, persistence, engagement, initiating and sustaining activities, etc (Sha et al., 2011). Moreover, the motivation of learners might change based on their learning style, in the case of m-learning, it is designed to incorporate optional activities for students to choose from and enhances motivation and learning success (Kilis, 2013). It is because "via m-learning, learners can access the resources from home, on the move, etc., and they can learn according to their learning pace and speed. Additionally, they feel relax, free, more comfortable and flexible" (Kilis, 2013, p.379)

In addition, the integration of m-learning tools in the classroom can enhance students' motivation since students learn in an engaging way, and it encourages them to practice the language with the help of different multimedia-based assignments (Osman & Abdel, 2018). Therefore, according to Sarhandi, Bejnaid, and Elyas (2007), many authors (for example, Jones, Issroff, and Scanlon, 2007) recommend teachers incorporate mobile phones into the classrooms to assist students in promoting learning motivation.

Concerning autonomy, Holec (1981) describes it as the ability to take charge of one's own learning. Similarly, Leis (2012) gives a definition of autonomous students as ones who have gone beyond showing signs of motivation, using metacognitive skills in their private study, where metacognitive skills, according to Flavell (1979), means thinking about thinking and

reflecting on what you know and what you do not know. Therefore, M-learning provides students the opportunity to experience new learning modes that go beyond the classroom context, offering them more flexibility, learning options in terms of language content, ways of teaching, learning space, and time, thus enhancing their learning autonomy (Djoub, 2016).

To sum up, motivation is an essential part of any learning activity (Baby, 2019). Therefore, the

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need for tools and methods that engage students in the learning process. Osman and Abdel (2018) states that teachers use mobile technology and incorporate m-learning into their classrooms to motivate students and enhance the teaching and learning process because "mobile-learning provides a new way to motivate students by providing a high level of engagement and novelty, personalization, and autonomy. The ability to constantly use new appsand find new ways to use the device keeps it fresh and interesting for students." (McQuiggan etal., 2015, p.12).

Chapter III

2. Literature Review

2.1. Introduction

The following section aims to provide an overview of key findings from different studiesin order to set up a link between the topic of this research and what has already been found in this field. The studies have been classified in the following way: linguistic and non-linguistic effects of MALL-based activities, common MALL-based tasks, and finally EFL/ESL students' and teachers' perceptions on the use of the Mobile Assisted Language Learning method.

2.2. Effects of MALL or M-learning

Deepend (2015) identified that 86% of people between the ages of 18 and 24 years old own at least one mobile device to make phone calls, read emails, and access the web or social media. Thus, traditional teaching and classroom convention has been threatened by mobile devices since students incline towards the integration of mobile devices into traditional teaching(Yavuz, 2016). Then, "learning the English Language with the aids of applications (apps) on mobile devices is now quite on the vogue among the EFL learners" (Hossain, 2018, p.1).
Moreover, the use of MALL-based activities presents some effects that are classified into two groups, linguistic and non-linguistic effects.

2.2.1. MALL-based Activities: Linguistic Effects

In regards to language skills, AbuSa'leek (2014) acknowledged that the "features of mobile technologies such as texting, voice and video recording, access to the Internet and cameras, enable the learners to enhance their learning skills" (p.469). Therefore, different authors have conducted studies to analyze the effects of the use of MALL-based activities in eachlanguage skill, grammar, and vocabulary.

Regarding reading, Dau and Husin (2012) mentioned that reading is generally associated with academic achievement; however, the teaching of this skill is often limited to the classroom. Therefore, Hassan, Ali, Sipra, and Ahmad (2017) conducted a study to analyze the effect of m-learning in enhancing reading comprehension on EFL. In this quasi-experimental study, the results showed the significance of technology in the reading process. One of these results showed the effectiveness of smartphones in EFL reading instruction because they allowed the reading process to proceed smoothly and created a conducive reading environment. Another study conducted by Daud and Husin (2012) aimed to explore the impact of mobile applications in developing students' reading skills. The findings revealed that students using mobile technology improved critical thinking and autonomy in reading performance.

Concerning the listening skill, Azar and Nasiri (2014) performed a study to investigate the effectiveness of Mobile Assisted Language Learning on listening comprehension in young learners. The findings revealed that mobile learning is an effective way of improving listening comprehension. In addition, the results of this research showed that cell phones are an exciting and innovative way for developing listening skills since students can listen to topics of their interest anywhere and at any time. In addition to that, Al-Shamsi, Al-Mekhlafi, Al Busaidi, and Hilal (2020) conducted a study to explore the effect of mobile learning on improving adult learners' listening skills in Oman. In this study, the results indicated that the participants who were able to use smartphones outperformed their listening comprehension because mobile learning enhanced their motivation, increased their exposure, expanded their vocabulary repertoire, and provided easy access to "anytime" and "everywhere" learning.

In regards to writing, in a quasi-experimental study conducted by Nair and Wider (2020) in Pakistan, the objective was to investigate the role of smartphones and PowerPoint in motivating and enhancing students' English Essay writing skills in Pakistan. The findings have shown that mobile learning helped students improve their writing skills because they were able to download materials related to the writing activity, engaged in active discussion, and were able to edit their work collaboratively. Finally, to analyze the importance of MALL in the speaking skill, Darmi and Albion (2017) conducted a study to investigate the possibility of using mobile phones to improve the learners' oral interaction skills. The findings demonstrated an increase in the performance of the learners at the end of the semester. It is because the students were able to participate in role plays and mock interviews using their audio recording devices, thus they feel comfortable.

Concerning vocabulary, Ma and Yodkamlue (2019) managed a study to investigate the effects of a self-developed app on Chinese university EFL learners' vocabulary learning. The results showed that the use of m-learning in EFL classrooms presents benefits, such as the learning of words and their retention in their long-term memory. In another study, Basal, Yilmaz,Tanriverdi, and Sari (2016) aimed to investigate the effectiveness of a mobile application on teaching 40 figurative idioms compared to traditional activities. The results indicate that participants who were able to use m-learning gained significant idiom-knowledge demonstrating the effectiveness of the mobile application in teaching target idioms.

In the case of grammar, Jin (2014) performed a study in Korea on undergraduate studentsto investigate the effect of using a smartphone application for developing learners' English grammar skills. The research findings showed that the adoption of a smartphone application (Band) was effective in developing students' grammar skills because the students actively used the online space created by the application (Band) to solve complex tasks and increase grammatical accuracy by discussing questions with peers, seeking help, and collaborating withothers.

2.2.2. MALL-based Activities: Non-linguistic Effects

For this part, research has been carried out to analyze the non-linguistic effects of m-learning in terms of motivation, autonomy, and distraction.

Regarding motivation, Sha et al. (2011) stated that motivation is a mental process; therefore, it cannot be directly observed from outside. It can be just inferred from the behavior. Sari and Nurcahyo (2018) conducted a study to determine students' learning motivation throughmobile learning. The participants were 35 students who were given questionnaires before and after the learning to see the effectiveness of mobile learning in increasing students' learning motivation. The results showed that the use of m-learning had a significant effect on students' motivation by increasing it. In another study performed by Olasina (2012), the purpose was to investigate students' acceptance and understanding of m-learning and how these can affect motivation. The findings revealed that students were motivated by m-learning because they believe that mobile devices are helpful for learning due to the facilities of their service.

Similarly, Baby (2019) managed a study to see how internal motivation enhances students' cognitive skills through the innovative use of smartphones or m-learning in the classroom. By using a test, the findings revealed a visible rise in the motivational graph of the students participating in this study. Moreover, in a study conducted by Osman and Abdel (2018),the aim was to examine the impact of using mobile apps on sustaining language learner motivation.

During the study, the students were able to use their mobiles in their English course of 12 weeks. The findings revealed that using mobile apps increases students' motivation since they found that mobile apps support the usual face-to-face learning by encouraging students to practice the language with the help of various multimedia-based assignments.

Concerning autonomy, Osman and Abdel (2018) has mentioned that mobile technology empowers students by giving them a sense of autonomy and helping them develop skills for self-directed learning. Therefore, Gitsaki and Robby (2014) conducted a study to see if the use of iPads increases students' autonomous learning. The results showed that the use of these technological devices creates practice-ready and independent learners. In another study Djoub (2016) encountered that Mobile Assisted Language Learning provides learners with the chance to experience new learning modes that go beyond the classroom context, offering them more flexibility, learning choices in terms of context, ways of delivery, learning space, and time enhancing their learning autonomy.

M-learning opens up new possibilities and opportunities for both teachers and students; however, teachers and students must consider some barriers and limitations, such as distraction (Metruk, 2020). Distraction is considered one of the adverse effects of using mobile phones among students (Mojaye, 2015). Therefore, Alzubi (2019) conducted a study whose purpose was to explore the benefits and limitations of the use of m-learning. After completing a survey, most teachers supported the integration of smartphones in the EFL context showing some advantages of their use. Nevertheless, in the same study, it was found that smartphones might distract students' attention to the learning process.

Richtel (2012) reported a belief among teachers that constant use of digital technology hampered their students' attention spans and ability to persevere in the face of challenging tasks. Therefore, McCoy (2013) conducted a study to see how digital devices may interfere with classroom learning. The results revealed that students' use of digital devices for non-class purposes could cause students to get distracted in the classroom and miss instruction.

In conclusion, the linguistic and non-linguistic effects of implementing the Mobile- Assisted Language Learning methodology are considered necessary in this analysis since they will help address the research questions.

2.3. Common MALL-based Tasks

M-learning increasingly enables people to develop activities using a variety of mobile devices. They are good media for drills and practices for vocabulary, English expressions, and practices in English communication (Kwon & Lee, 2010). Guma, Businge, Nkamwesiga,

and Andogah (2017) conducted a study whose aim was to answer three different questions. In regards to this section, the objective was to examine how mobile devices are used for learning. The findings showed that students use mobile devices to access course materials, do classwork, send and receive emails, take and share notes, attend virtual classrooms, participate in discussionforums and listen to pre-recorded lectures.

In another study conducted by Dashti and Yateem (2018), the findings revealed that teachers and students' most common classroom activities include taking photos and videos, playing games, listening to songs, and watching videos. In addition to that, the results from the study performed by Shraim and Crompton (2015) showed that the activities that include mobiledevices allow students to explore real-world issues and solve authentic problems. Also, smartphones/tablets offer learners various ways to connect the curriculum with real life and engage through text, voice, image, and video.

Finally, Alzubi (2019) has found that teachers use mobile devices to perform different tasks, such as sending and receiving emails, accessing the internet, and using educational applications, scanning/creating QR codes, using calculators, playing games, and playing a podcast.

2.4. Students' and Teachers' Perceptions of MALL

Research has been carried out to analyze the perceptions of students and teachers on the use of m-learning in EFL/ESL classrooms. Davie and Hilber (2015) managed a study to see students' perspectives towards the implementation of MALL into their learning process regardingstudents' perceptions. With the help of questionnaires and follow-up interviews, the findings revealed that the use of smartphones in language learning is beneficial in student motivation and may have additional long-term benefits that have yet to be seen. Additionally, Kwangsawad (2019) conducted a study focused on investigating students' perceptions of the benefits and challenges associated with the use of smartphones for learning. The results showed that most students found the use of smartphones for EFL activities to be beneficial, fun, and productive, but some students were concerned about the misuse of smartphones. In another study, Tayan (2017) investigated learners' perceptions of implementing a MALL program. The findings from a student questionnaire highlight positive attitudes and receptiveness towards mobile learning implementation.

Concerning teachers' perceptions, O'Bannon, Waters, Lubkeb, Cadya, and Rearden (2017) have found that most teachers in their examined study supported the use of mobile phonesin the classroom. The participants perceived many mobile phone features as being useful in the

classroom. In addition, Alzubi (2019) conducted a study to explore the perceptions of EFL teachers. The results indicated that most teachers supported the integration of smartphones in theEFL context, in which some of them believed that smartphones would enhance students' EFL learning. Besides, Oz (2015) showed on the study results that overall the participants had high levels of perceptions about MALL, and they expressed their positive attitudes towards using mobile devices in language instruction.

After the analysis of many studies, it is seen that m-learning is considered a great tool forlanguage learning in the majority of them. However, there is not too much information on the kind of activities for each learning skill and their importance in EFL/ESL learning.

Chapter IV

3. Methodology

To collect the literature for the present bibliographical research synthesis, which according to Norris and Ortega (2006) is, "the systematic secondary review of accumulated primary research studies" (p. 4), data were gathered through a rigorous search in several online databases such as ResearchGate, ERIC, Scholar Google, Taylor and Francis, and Pro-Quest and in different journals, such as *Journal of Multimedia-Assisted Language Learning, International Journal of Computer-Assisted Language Learning and Teaching, Journal of Language Teaching and Research, Journal of English Education, Computers in the Schools Journals, Language and Language Teaching Journals,* Computer Assisted Language Learning Electronic Journal, *Global Journal of Engineering Science and Research Management, Journal of Research in Social Sciences and Technology, Journal of Education Sciences, International E-Journal for Research in ELT, The Turkish Online Journal of Education Technology, Journal of International Research in Higher Education, International Journal of Advanced Research in Technology and Innovation, International Journal of Language and Linguistics, Journal of Applied Sciences.*

Twenty two studies were considered for this descriptive research study. In order to select the studies, inclusion and exclusion criteria were established. Regarding inclusion criteria some points were taken into account: (1) Empirical studies published in the last ten years, (2) quantitative, qualitative, and mixed-method studies, (3) the studies performed in EFL/ESL classrooms, (4) and finally, the studies applied at different levels of education. In respect to the exclusion criteria, it was considered the following: (1) the studies published in non-academic sources, (2) the studies that used a design different from quantitative, qualitative, and mixed-method approach, (3) the studies whose participants did not belong to EFL/ESL classrooms.

The keywords used to look for these articles were (a) mobile learning, (b) smartphone, (c) teaching, (d) effectiveness, (e) implementation, (f) EFL, (g) ESL, (h) benefits, (i) Mobile-assisted language learning, and (j) implementation.

The purpose of performing such thorough research was to find a research gap that may serve as a future research topic.

Chapter V

4. Data Analysis

4.1. Introduction

For the present bibliographical research synthesis, 22 studies were selected on this section. The studies were coded and analyzed under the following categories: publication year of the studies, location where the studies were conducted, linguistic and non-linguistic effects of m-learning, MALL-activities used in EFL/ESL classrooms, the common apps used in the studies, and finally teachers and students' perceptions of MALL. The analysis of these categories were organized in tables followed by a synthetized description, which will help to answer the research questions and address the objectives.

4.2. Publication Year of the Studies

The publication year of the studies was included in this section because "over the past ten years m-learning has grown from a minor research interest to a set of significant projects in schools, workplaces, museums, cities, and rural areas around the world" (Mehdipour & Zerehkafi, 2013, p.93). In addition, in recent years, there has been a considerable growth in m- learning use, and mobile devices have become an integral part of students' life.

Table 1

Publication year of the studies

Author / Year	Year of Publication	N. of Studies	(%)

Olasina (2012), Jin (2014), Davie & Hilber (2015), Leis, Tohei & Cooke (2015), 4	2012 - 2016	18.2
Hassan, Ali, Sipra & Ahmad (2017), Lekawael (2017), O'Bannon, Waters, Lubke, Cady, & Rearden (2017), Hossain (2018), Osman & Abdel (2018), Almarshadi, Alenazi, Bidin, Abdul, Bin Mohamad (2019), Alzubi (2019), Baby(2019), Ko (2019), Ma & Yodkamlue (2019), Rao (2019), Alkhudair (2020), Alshammari (2020), Alshamsi, Al-Mekhlafi, ALbusaidi & Hilal (2020), Linh &Vu (2020), Nair & Wider (2020), Parnrod, Sinraksa, Nung-alee, Yacharat,	2017 – 2021	18

Junnuan, Laptawewong, & Yeera, (2020), Tiahi (2020).

N=22

Table 1 shows the year of publication of each study. It was divided into two periods of time. The first one goes from 2012 to 2016, and the second goes from 2017 to 2020. It is seen that the majority of studies which are 17 out of the 22 studies were conducted over the past five years. It suggests that in the educational field, m-learning research has received much attention in recent years (Leis, Tohei & Cooke (2015). In addition, the use of mobile-learning is increasing and diversifying across every sector of education (Alley, 2009). Therefore, research and discussion on the issue of mobile-learning have increased dramatically since the first decade of the 21st century (Leis, Tohei & Cooke, 2015). Data collected has shown that researchers put more emphasis on investigating this issue because m-learning tools have transformed learning and impacted on learners (Olasina, 2012).

4.3. Research Location

Table 2

Research Location

Author / Year	Location	N. of Studies	(%)
Olasina (2012), Osman & Abdel (2018), Tiahi (2020)	Africa	3	13.6
O'Bannon, Waters, Lubke, Cady, & Rearden (2017)	North America	1	4.6
Jin (2014), Leis, Tohei & Cooke (2015), Hassan, Ali, Sipra & Ahmad (2017), Lekawael (2017), Hossain (2018), Almarshadi, Alenazi, Bidin, Abdul, Bin Mohamad (2019), Alzubi (2019), Baby (2019), Ko (2019), Ma & Yodkamlue (2019), Rao (2019), Alkhudair (2020), Alshammari (2020), Alshamsi, Al-Mekhlafi, ALbusaidi & Hilal (2020), Linh & Vu (2020), Nair & Wider (2020), Parnrod, Sinraksa, Nung-alee, Yacharat, Junnuan, Laptawewong, & Yeera, (2020).	Asia	17	68.2
Davie & Hilber (2015)	Europe	1	13.6

N=22

Table 2 presents the studies classified according to the research location. For this category, all 22 studies were taken into account. As the table shows, the majority of the studiesbelong to the Asian continent. It suggests that in this continent, there is a high availability of research on m-learning or MALL. Moreover, table 5 shows that in Africa, this issue has been investigated

Regarding the American and European continent, it is evident that only one study was found in these continents. It might indicate that more research on technological tools in EFL/ESL classrooms is needed. Additionally, table 5 shows that in South America, no studies were found.

4.4. Effects of MALL in EFL/ESL Classrooms

The following category analyzes the predominant effects that the use of mobile devices produces on EFL/ESL students reported in the 22 studies. For the present analysis, the effects were classified into two groups: linguistic and non-linguistic effects.

Table 3

Effects of MALL in EFL/ESL Classrooms

Effects	N. of Studies	Category
Linguistic effects	13	Reading Skill
		Listening Skill
		Writing Skill
		Speaking Skill
		Vocabulary
		Grammar
Non-linguistic effects	15	Positive
		Negative

N= 22

*Studies are counted in more than one category.

4.4.1. Linguistic Effects

In table 3, it can be seen that there is a significant amount of studies focused on linguistic aspects of language. As Parnrod et al. (2020) indicated, m-learning plays a critical role in the development of language learning skills. As Alshammari (2020) mentioned, the use of mobile devices provides students with opportunities to practice their language skills. Additionally, grammar and vocabulary are analyzed.

Different authors such as Hossain (2018), Almarshadi et al. (2019), Alshammari (2020),Linh & Vu (2020), and Parnrod et al. (2020) agreed that mobile devices are exceptional tools inEFL/ESL classrooms that affect positively in the development of the language skills. Regardingreading, the findings established by Hassan, Ali, Sipra, & Ahmad (2017) stated that interactive

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exercises are beneficial for reading comprehension for two main reasons. First, it allows students to receive instant feedback, which is valuable to keep learners engaged and focused. Second, it helps students to improve their reading fluency by using a time constraint. Similarly, with respect to listening skills, results presented by Al-Shamsi, Al-Mekhlafi, Al Busaidi, Hilal (2020) indicated that the use of m-learning in the EFL/ESL classroom tends to be more effective than the conventional method in improving the learners' comprehension listening skill. Besides, the students who use mobile devices seem interested in exploring the target language listening skills by using their tools to watch movies or series in English, listen to Tik Tokers' English channels, and listen and practice different pronunciations (Parnrod, et al. 2020).

In regards to writing skills, only one study was found. The analyzed study belongs to Nair and Wider (2020) where they found that the use of smartphones significantly enhances students' writing skills. In addition, mobile devices allow students to create a fun and enjoyable writing experience since they have the opportunity to download material from the internet, engage in active discussion, and work collaboratively. The limited number of studies on this skillmight be caused by the idea that among the four skills, writing is considered to be demanding and challenging even for a native speaker (Johnstone et al., 2002). Therefore, implementing mobile devices for teaching writing might be more difficult because, as Aronoff and Rees-Miller(2007) stated, it requires implicit instructions.

According to Almarshadi et al. (2019), speaking is a fundamental skill for learners to gainsuccess and professional development; however, there are just a few studies on m-learning in relation to this language skill. One study was considered for the analysis of the speaking skill, and it was conducted by Almarshadi et al. (2019), who wanted to see if the application of m- learning could improve students' speaking skills. The findings from the study revealed that students using mobile devices could improve their speaking skills by building confidence and improving oral comprehension. However, this result cannot be generalized as it was just one study focused on this skill; hence there is a strong necessity to conduct more research on this issue to get reliable data.

Taking into account other dimensions of the language that are affected by the use of m- learning, studies have focused on vocabulary and grammar. Regarding vocabulary, five studies were analyzed, which in relation to the other linguistic effects represent a significant number, suggesting that researchers investigated this issue more in terms of vocabulary than the other linguistic aspects of language. In the studies conducted by Davie and Hilber (2015), Hossain (2018), Ko (2019), Ma and Yodkamlue (2019), and Alshammari (2020), it is demonstrated that MALL has positive effects on vocabulary acquisition. The results indicate that the use of mobile

phones and mobile applications can help students in different ways. First, they can learn new words in an easy and enjoyable way. Second, with the use of m-learning, the retention of new words is not complicated, so they can expand their vocabulary by learning at anytime and anywhere. Finally, in the study conducted by Ko (2019), the findings revealed that m-learning increased interest in learning new vocabulary, so the use of words improved satisfactorily.

Considering grammar, only one study was used. The study was conducted by Jin (2014), where the purpose was to determine the effects of a mobile application for developing learners' grammar skills. The results from the study cannot be fully appreciated since there is not a significant difference between the control and experimental group who participated in this study.In addition, although the author stated that the use of mobile devices could be beneficial and effective for facilitating learners' grammatical knowledge, there is no data that shows the kind ofactivities they used or how the improvement of grammar was analyzed. Therefore, further research is necessary not only on the grammar aspect of language but also in all the pointsmentioned before in order to examine the effectiveness of MALL in EFL/ESL learning.

4.4.2. Non-linguistic Effects

In table 2, it was seen that non-linguistic effects were categorized as positive and negative. In this part, however, these two categories will be thoroughly analyzed and re- categorized. This will be done to find relevant information about MALL's effects on the non-linguistic aspects of language learning. First, regarding positive effects, some elements were found, and they will be described in the table below.

4.4.2.1. Positive Non-linguistic Effects

Table 4

Positive Non-linguistic Effects of MALL

Author/ Year	N. of Studies	Category
Olasina (2012), Davie & Hilber (2015), O'Bannon, Waters, Lubke, Cady, & Rearden (2017), Osman & Abdel (2018), Alzubi (2019), Baby (2019), Ko (2019), Alkhudair (2020).	8	Motivation
Lekawael (2017), O'Bannon, Waters, Lubke, Cady, &Rearden (2017), Baby (2019), Ko (2019), Alkhudair (2020), Tiahi (2020).	6	Engagement

Olasina (2012), Jin (2014), Leis, Tohei, & Cooke(2015), Osman & Abdel (2018), Baby (2019).	5	Autonomy
O'Bannon, Waters, Lubke, Cady, & Rearden (2017),Alzubi (2019), Baby (2019), Rao (2019).	4	Creativity
Jin (2014), O'Bannon, Waters, Lubke, Cady, & Rearden(2017), Baby (2019).	3	Collaborative Learning

N= 14

*Studies are counted in more than one category

As it can be seen in Table 3, the positive non-linguistic effects that MALL has on EFL/ESL learners are motivation, autonomy, engagement, creativity, and collaborative learning.All of them are considered relevant for this research; hence they will be described in the following lines.

Motivation

For this part, eight out of the 14 studies were considered since motivation has been mentioned as one of the main effects that MALL has on EFL/ESL learners. It was stated that smartphones and other mobile devices are powerful tools to enhance learners' motivation. It is inconcordance with the idea proposed by Baby (2019), who has stated, "Integrating mobile applications in the classrooms can enhance the motivation level of students because mobile devices have become an essential part of their everyday life" (p.1). In addition, their level of motivation increases because, with the use of technological tools, students learn in an engaging way and practice the language with the help of different multimedia-based activities (Osman &Abdel, 2018).

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Engagement

Six studies were found regarding engagement. This feature was essential for this analysissince Tiahi (2020) mentioned that students' engagement is one of the critical features for effective learning. Thiahi (2020) has found that students engage in EFL/ESL learning when theyhave the opportunity to use technological tools in interactive activities that promote the improvement of their knowledge. In concordance with those findings, Baby (2019) and Ko (2019) have found that a classroom environment supported by technology makes it easier for students to pay attention, participate, and engage in a lesson.

Autonomy

In the case of autonomy, five studies were considered. It was found that the use of mobiledevices, in the words of Osman and Abdel (2018), "empowers students by giving them a sense ofautonomy and helping them develop skills for self-directed learning" (p.14). In addition, Leis, Tohei, & Cooke (2015) have found that m-learning does result in more autonomous students. It is because they feel comfortable with the opportunity they have to continue their learning and work individually outside the classroom (Jin, (2014) and Olasina, (2012)). It is supported by Baby (2019), who stated that learners nowadays enjoy exploring various applications not only in their day-to-day activities of life but also employing technology for their educational advancement, creating a sense of autonomy.

Creativity

In terms of creativity, four studies were analyzed. Different authors have found that mobile devices are powerful tools to support students' creativity (O'Bannon, Waters, Lubke, Cady, & Rearden (2017), Alzubi (2019), Baby (2019)). Rao (2019) mentioned the importance oftechnology for students' creativity by stating that mobile devices create many educational benefits because the use of different features of these tools allows students to find creative ways to employ these features in classroom activities and in-home tasks.

Collaborative Learning

Regarding collaborative learning, four studies were found. It is noted that the use of m-learning in EFL/ESL classrooms promotes to a high extent autonomy and individuality.

However, Jin (2014) has found that the online learning environment still promotes collaborative learning because students can interact and communicate whenever they want, even after the classroom. Baby (2019) agrees with this point and states that mobile learning is very effective among low learners since it allows them to work together through peer learning opportunities making them succeed.

4.4.2.2. Negative Non-linguistic Effects

Seven studies out of the 14 present adverse non-linguistic effects of MALL in EFL/ESLclassrooms. These negative effects are distraction, time consumption, and cheating,

Table 5

Negative Non-linguistic Effects of MALL

Author/ Year	N. of Studies	Category
Davie & Hilber (2015), O'Bannon, Waters, Lubke, Cady, & Rearden (2017), Alzubi (2019), Ko (2019), Tiahi (2020).	5	Distraction
Olasina (2012), Osman & Abdel (2018).	2	Time Consuming
O'Bannon, Waters, Lubke, Cady, & Rearden (2017).	1	Cheating

N= 7

*Studies are counted in more than one category

As it can be seen in the table, the negative effects were categorized into three main points,

(a) distraction, (b) time consuming, and (c) cheating. Regarding distraction, it was found that theuse of mobile devices tended to have the risk of being distractors that can damage the learning process Davie & Hilber (2015). In the study conducted by Ko (2019), students mentioned that they get distracted because instead of using their mobile devices for educational purposes, they use them to log into different social media apps. In the same way, Tiahi (2020) noticed that students easily get

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distracted in classes because they quit whatever activity they are doing to check unrelated activities on the phone.

The other negative effect of MALL is time-consuming. In the table, it can be seen that only two studies focused on this issue. Osman and Abdel (2018) have found that students believe that the use of m-learning is beneficial but time-consuming. The speed of the internet in the educational environment is so slow; hence they waste time. It might be considered a good reason for time-consuming; however, it cannot be taken as a fact because the participants who stated that is a minimal group from the total sample.

Regarding the last negative effect, which is cheating, O'Bannon, et al. (2017) included it in their findings, but there is no information about how they came to that conclusion. They did not investigate in depth how students use their mobile devices to cheat. Therefore, it would be necessary to investigate this issue.

The studies analyzed in this part might suggest that MALL is seen more in terms of its benefits rather than barriers. In addition, the significant number of positive effects indicate that m-learning is essential in EFL/ESL classrooms since students can develop and enhance their language learning.

1.1. MALL-based Activities used in EFL/ESL Context

For the next category, which is MALL-based activities, nine studies were selected. It is because, in the remaining 13, the findings did not reveal the kind of activities teachers used in their teaching practices. In the analysis of the studies, they were categorized into two groups, inside and outside classroom activities. It was done to recognize that students can apply m-learning not only in the classroom with the teacher but also on their own by applying the attribute of autonomy.

Table 6

MALL-activities in EFL/ESL context

Category	N. of Studies	Type of Activity
Inside classroom activities	1	Role plays using video functions
	4	Listen to music
	3	Discussions in forums
	3	Play games
	3	Watch videos
	1	Upload sentences to Apps
Outside classroom activities	1	Create online presentations
	4	Listening to music
	3	Watch videos
N= 9		

*Studies are counted in more than one category

In the table presented above, it can be seen the type of activities teachers use in their EFL/ESL classrooms. They are divided into two groups: outside and inside classroom activities. Regarding classroom activities, the activities focused on developing students' language skills in the educational context. It means that the activities are performed in the classroom with the guidance of the teacher. For this category, teachers used activities such as role-plays (Leis, Tohei, & Cooke, 2015), participation in discussion forums (Jin (2014), Linh & Vu (2020), & Tiahi (2020), listening to music, and other authentic audio material (Leis, Tohei, & Cooke (2015), O'Bannon, et al. (2017), Almarshadi, et al. (2019), and Alshammari (2020). In addition, teachers also used educational games incorporating m-learning tools, and some of them includedbingo, matching, hidden objects, among others (Davie & Hilber (2015), Linh & Vu (2020), Tiahi(2020). Finally, in one study (Ko, 2019), an activity was found where students used a mobile application to upload sentences of a determined topic, and they can get feedback from their peersand teachers promoting collaborative learning.

Moving to the next part, which is outside classroom activities, it includes activities that students perform after class. An activity that fits under this category is the creation of online presentations where students create their personalized learning and maintain engaged students even in a context different from the learning/teaching one (Tiahi, 2020). Additionally, watching videos and listening to music can also be included since in the studies, students used their mobiledevices to watch videos on different applications to complement their knowledge (Leis, Tohei, &Cooke (2015), O'Bannon, et al. (2017), Almarshadi, et al. (2019), and Alshammari (2020).

On this part, it is important to highlight that the limited number of studies with the focuson MALL-based activities suggests that more research needs to be done on this issue as it represents a very crucial part of the actual practices of teachers.

1.2. Apps for M-learning

Table 7

Apps for MAL

Linguistic Effects	Non-linguistic Effects	Author/Year	Mobile Application
Grammar and Vocabulary	-	Jin (2014)	Band

Vocabulary	-	Davie & Hilber (2015)	Quizlet
Vocabulary	-	Ko (2019)	NaverCafe
Vocabulary	-	Alshammari (2020)	Social Media (WhatsApp, Facebook, Twitter, Youtube)
Four Skills	-	Parnrod (2020)	Tiktok, Cake, Netflix,Spotify, TED Talks.
-	Engagement	Tiahi (2020)	Kahoot, Padlet, Slido

N= 6

The table above shows some mobile applications that teachers implemented in their classroom practices. As can be seen, only in six studies the authors center their investigation onthe use of apps when it comes to m-learning. However, for this research synthesis, only two studies (Jin (2014) and Tiahi (2020) will be analyzed since the remaining four do not have clearly stated the positive results of the use of mobile applications in the teaching-learning process.

In the case of the first app Band (Jin, 2014), it was used to engage students in a collaborative learning environment while they practiced their grammar skills. From the findings,it can be said that the use of this mobile application positively affects the development of learners' grammatical knowledge. It is because, as Jin (2014) mentioned, smartphone-based learning extends learning opportunities since, thanks to the advantages of mobility and accessibility, students' participation and involvement in grammar learning increase as they couldinteract and communicate with one another whenever they want even after the classroom.

Regarding Kahoot, Padlet, and Slido, Tiahi (2020) conducted a study to explore students' engagement and interaction with m-learning activities using these apps. The key finding from this research is that these mobile applications allow students to move from a random use of their mobile devices to an awareness of the different functions that these tools hold to enhance their learning process. One of the functions of these apps is that they give students the freedom to express their learning style and their needs while they interact and discuss with their peers, strengthening their communication and group work ability.

These mobile applications were taken into account for the analysis since they summarizethe point of this investigation which is to find out the effects of MALL in EFL/ESL classrooms.From Band, it can be concluded that the use of m-learning and, more specifically, the use of mobile applications help students in their grammar and vocabulary development. Second of all, the other apps (Kahoot, Padlet, and Slido) create positive effects regarding the non-linguistic aspects of language. In this case, they allow students to engage with the activities and cooperatewith their peers.

1.3. Students' and Teachers' Perceptions towards MALL

The analysis of this part intends to answer the second research question: What are the students' and teachers' perceptions of using the Mobile-Assisted Language Learning Method inEFL/ESL classrooms? Below, it will describe the perceptions of both students and teachers separately to illustrate the results from each group clearly.

1.3.1. Students' Perceptions

Table 8

Students' perceptions on the Use of MALL in EFL/ESL classrooms

Author/Year	Students' perceptions	N. of Studies
Olasina (2012), Jin (2014), Davie & Hilber (2015), Leis,Tohei & Cooke (2015), O'Bannon, Waters, Lubke, Cady,	Positive	13

& Rearden (2017), Osman & Abdel (2018),

Almarshadi,Alenazi, Bidin, Abdul, Bin Mohamad

(2019), Ko (2019),Ma & Yodkamlue (2019),

Alkhudair (2020), Al-Shamsi,Al-Mekhlafi, Al

Busaidi, Hilal (2020), Linh & Vu (2020), Tiahi

(2020)

Lekawael (2017)	Negative	1

N= 14

As seen in the table, the perceptions were divided into two categories, positive and negative. Here, the number of studies where students are strongly supportive of using m-learning in EFL/ESL classrooms is significantly considerable. It is because, as students have mentioned, the use of mobile devices represents an excellent opportunity and plays a crucial role in the learning-teaching process as they bring different advantages for them (Olasina, 2012, Jin (2014),Leis, Tohei & Cooke (2015), O'Bannon, Waters, Lubke, Cady, & Rearden (2017), Osman & Abdel (2018), Ko (2019), Linh & Vu (2020), Tiahi (2020). From their point of view, mobile devices are convenient tools to support their learning; thus, the incorporation of MALL is well appreciated and accepted by students (Jin, (2014), O'Bannon, Waters, Lubke, Cady, & Rearden (2017), Osman & Abdel, (2018).

On the other hand, Lekawael (2017) found that students, although having good results with the use of m-learning, viewed the negative things of its implementation. In this study, thestudents have mentioned that they do not support the use of MALL in EFL/ESL classrooms because they do not consider mobile devices as a supportive tool in the educational field. Theybelieved that these tools are only used to access social networks, access the internet, and play games.

As it can be seen, there are different views of MALL in EFL/ESL classrooms. However, considering the significant number of studies showing positive perceptions of students towards MALL, it can be mentioned that the implementation of m-learning in EFL/ESL classrooms is beneficial for developing students' learning of the English language.

1.3.2. Teachers' Perceptions

Table 9

Teachers' perceptions on the Use of MALL in EFL/ESL classrooms

Author/Year	Teachers' perceptions	N. of Studies
Alzubi (2019), Linh & Vu (2020), O'Bannon,Waters, Lubke, Cady, & Rearden (2017).	Positive	3
O'Bannon, Waters, Lubke, Cady, & Rearden(2017).	Negative	1

N= 3

*One study was counted in both categories.

For the analysis of the perceptions of teachers, only three studies were selected. The studies were categorized into two groups. In the first place, it has been analyzed the positive perceptions that teachers have of MALL. Alzubi (2019) has found that teachers see m-learning more in terms of its usefulness. Here, the teachers showed positive perceptions towards the integration of MALL because mobile devices have many functionalities making these tools veryuseful in the teaching-learning process. Some of the features that teachers have mentioned are: sending and receiving emails, accessing the internet, and using educational apps.

In the second place, Linh and Vu (2020) and O'Bannon, Waters, Lubke, Cady, and Rearden (2017) conducted different studies where the findings determined that teachers considered m-learning supportive for their teaching. For example, in Linh and Vu (2020), teachers agreed and admitted that the use of mobile devices could effectively support English learning. Moreover, O'Bannon, Waters, Lubke, Cady, and Rearden (2017) have found that mobile devices are resources and as any other resource, their applicability and functionality help to improve the teaching and learning process.

Regarding the negative perceptions of MALL, only one study was considered, (O'Bannon, Waters, Lubke, Cady, & Rearden, 2017). In this study, the findings revealed how teachers supported the use of m-learning in the EFL/ESL classroom as stated in the previous paragraph. However, in the same study, some teachers saw negative aspects of MALL in terms of its application. In this way, this group of teachers mentioned that they are unsure of using mobile technology in the classroom because they lack the training for its use, lack of personal use, or simply fear of change.

Based on the previous analysis, it can be concluded that MALL has many effects on the linguistic and non-linguistic aspects of language. In addition, even though mobile devices are considered great tools for the learning process, students viewed MALL negatively in one study, considering that they do not have to be integrated into the educational context. However, as Leis, Tohei, and Cooke (2015) mentioned, the use of mobile devices in the field of education has seen various changes and transitions in the past few decades, especially smartphones which have been immensely influential to students' learning. Parnrod et al. (2020) indicated that m-learning plays a crucial role in developing language learning skills.

Chapter VI

Conclusions and Recommendations

6.1 Conclusions

This bibliographical research synthesis aimed to analyze the effects and perceptions of both teachers and students towards the application of MALL-based activities in the EFL/ESL teaching-learning process. The effects were categorized into linguistic and non-linguistic to gather more reliable and understandable data about m-learning. Besides, the results from the data analysis are discussed in this section in order to answer the two research questions: a) What are the effects of the use of the Mobile-Assisted Language Learning Method in the EFL/ESL classroom, and b) What are the students' and teachers' perceptions of using the Mobile-Assisted Language Learning Method in EFL/ESL classrooms.

Regarding the first research question, the findings from the analysis of the 22 studies show that m-learning has more positive than negative effects in an extensive amount. Therefore, to gather information for this question, it was necessary to categorize the effects on linguistics and nonlinguistic as each of them represents different aspects of language. For the linguistic effects, it was considered all the language skills (listening, reading, speaking, and writing) as well as grammar and vocabulary. In this way, different authors (Hossain (2018), Almarshadi et al. (2019), Alshammari (2020), Linh & Vu (2020), and Parnrod et al. (2020) have concluded that m-learning represents an excellent opportunity for students to develop their learning skills. In m-learning, teachers can use different activities (role plays with video functions, discussions in forums, the use of games, online presentation, among others) to support the learning-teaching process while students practice their vocabulary, grammar, and different language skills.

In the case of the non-linguistic effects, it was found that m-learning affects in a positive and negative manner. The positive effects of MALL in language learning were summarized as the following: (a) high level of motivation, (b) engagement, (c) autonomy, (d) creativity, and (d) collaborative learning. For the negative effects, it was found that the use of mobile devices tended to have the risk of being a distractor that can damage the learning process (Davie & Hilber (2015). Additionally, Osman and Abdel (2018) have found that m-learning is beneficial but time-consuming. In the same way, O'Bannon, et al. (2017) have found a negative effect that has to be with cheating. These three effects, distraction, time-consuming, and cheating were found in the analysis. However, the analysis was focused more on the benefits than the barriers suggesting that m-learning, although having some negative effects, is more beneficial for the

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EFL/ESL learning-teaching process.

Regarding the second research question about teachers' and students' perceptions, it can be concluded that both groups strongly support the use of MALL in EFL/ESL classrooms. In the case of students, they feel that the use of mobile devices provides an excellent opportunity to enhance their learning and plays a crucial role in the learning-teaching process (Olasina (2012), Jin (2014), Leis, Tohei & Cooke (2015), O'Bannon, Waters, Lubke, Cady, & Rearden (2017), Osman & Abdel (2018), Ko (2019), Linh & Vu (2020), Tiahi (2020). Therefore, in general terms, students appreciated and accepted the integration of mobile devices in EFL/ESL classrooms. For teachers, MALL was also considered positive for the learning process. In this case, researchers have found that the different functionalities of mobile devices such as sending and receiving emails, accessing the internet, and using educational apps allow teachers to be more productive and use these tools in a better way (Alzubi, 2019), O'Bannon, Waters, Lubke, Cady, and Rearden (2017), Linh and Vu (2020).

There were also some negative perceptions of MALL where students described m- learning as tools that do not support the learning process because they considered that these tools are only used to access social networks, access the Internet and play games (Lekawael, 2017). In the case of teachers, some of them are unsure of the use of MALL in EFL/ESL classrooms because they lack the training for its use. However, these negative perceptions represent an insignificant number in comparison with the positive perceptions that teachers and students have toward the implementation of MALL in the EFL/ESL classrooms.

In summary, it can be concluded that MALL in the educational field, as Leis, Tohei, and Cooke (2015) mentioned, has seen various changes and transitions in the past few decades especially smartphones which have been immensely influential to students' learning. Therefore, its use and application in EFL/ESL classrooms have been strongly accepted (Olasina, 2012, Jin (2014), Leis, Tohei & Cooke (2015), O'Bannon, Waters, Lubke, Cady, & Rearden (2017), Osman & Abdel (2018), Ko (2019), Linh & Vu (2020), Parnrod et al. (2020), Tiahi (2020).

6.2. Recommendations

Based on the results of this research synthesis, the following recommendations can be stated. First, based on the positive results of the use of m-learning in EFL/ESL classrooms in regards to the language skills, it is highly recommended its implementation in the classroom to help students gain success in the development of each of the language skills. In addition, although some participants saw mobile devices as distractors for the learning-teaching process, I recommend the use of MALL because it allows students to gain high levels of motivation, autonomy, and engagement.

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Secondly, it is relevant to conduct more studies in Latin America in order to analyze the efficacy of MALL in this part of the world. It could be done with the purpose of gathering more familiar information within our context, and in this way teachers will feel more comfortable with the implementation of m-learning in their classrooms as they can feel reflected on their colleagues' results.

Moreover, it is necessary to center the investigation of MALL on two main points. First, more studies where the main objective is to search on MALL-based activities for each language skill because in the analyzed studies this aspect was described just in general terms. In the same way, it is relevant to focus more research on the most effective mobile applications for EFL/ESL students because in this research synthesis there was found a limited number of mobile applications for analysis.

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