



COMMUNICATIVE LANGUAGE SKILLS: A COMPARATIVE ANALYSIS OF DUOLINGO AND MEMRISE APPLICATIONS FOR LANGUAGE LEARNING¹

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ABSTRACT: The main objective of this study is to analyze the use of mobile applications for and learning English, focusing on the Duolingo and Memrise applications. The methodology of this study consists of a qualitative and exploratory investigation based on bibliographic sources. The research approach is qualitative, exploratory in nature, describing the methods and strategies used by the apps to promote English learning. As general objectives, this study highlights some aspects that involve language learning through the use of technological resources, considering the importance of integrating the language skills for the development of students' communicative abilities, a comparison is made between two mobile apps that were created to help individuals learn English as an additional language: Duolingo and Memrise. To achieve these objectives, the article is based on theoretical contributions from authors such as Harmer (2007, 2010); Brown (2001, 2007); Larsen-Freeman (2011, 2013); Mübert and Pereira (2011); Moran (2015); Barbosa (2020); Paiva (2017) and other researchers who have dedicated themselves intensively to the study of this area. After the exploratory bibliographical research, the two apps in question were analyzed, and possible ways of improving English learning through mobile apps were also identified, such as gamification, personalized feedback, the use of voice recognition technologies, and adaptive approaches to the students' learning pace.

Keywords: Language learning. English language learning. Mobile apps. Duolingo. Memrise. Communicative skills. Educational technology. M-learning.

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RESUMO: O principal objetivo deste estudo é analisar o uso de aplicativos móveis para a aprendizagem de inglês, com foco nos aplicativos Duolingo e Memrise. A metodologia deste estudo consiste em uma investigação qualitativa e exploratória baseada em fontes bibliográficas. A abordagem da pesquisa é qualitativa, de natureza exploratória, descrevendo os métodos e estratégias utilizados pelos aplicativos para promover a aprendizagem de inglês. Como objetivos gerais, este estudo destaca alguns aspectos que envolvem a aprendizagem de línguas através do uso de recursos tecnológicos, considerando a importância de integrar as habilidades linguísticas para o desenvolvimento das habilidades comunicativas dos alunos, é descrito e feita uma comparação entre dois aplicativos móveis que foram criados para ajudar indivíduos a aprender inglês como uma língua adicional: Duolingo e Memrise.. Para atingir esses objetivos, o artigo se baseia em contribuições teóricas de autores como Harmer (2007, 2010); Brown (2001, 2007); Larsen-Freeman (2011, 2013); Mübert and Pereira (2011); Moran (2015); Barbosa (2020); Paiva (2017) e outros pesquisadores que têm se dedicado intensamente ao estudo dessa área. Após a pesquisa bibliográfica exploratória, foram feitas as análises dos dois aplicativos em evidência, também foram identificadas possíveis formas de aprimorar a aprendizagem de inglês através de aplicativos móveis, tais como a gamificação, feedback personalizado, uso de tecnologias de reconhecimento de voz, e abordagens adaptativas ao ritmo de aprendizagem dos alunos.

Palavras-chave: Ensino de línguas. Aprendizagem de inglês. Aplicativos móveis. Duolingo. Memrise. Habilidades comunicativas. Tecnologia educacional. M-learning.

1 INICIAL CONSIDERATIONS

Over the last 20 years, the speed and complexity of the Internet and cyberspace have increased significantly, resulting in a large number of people using the Internet, hence the emergence of a large number of phones and many types of smartphones. According to statistics, 78% of the world's population over the age of 10 owns a smartphone, according to survey data from various schools. According to the IBGE⁴, 160.4 million people in Brazil (86.5% of

⁴ IBGE (Brazilian Institute of Geography and Statistics) is a Brazilian federal agency linked to the Ministry of Economy. Created in the 1930s, the IBGE aims to collect, analyse and disseminate statical data on the Brazilian territory and its population, and is also responsible for carrying out environmental, socio-economic and cartographic surveys and studies of Brazil. (GUITARRARA, Paloma. "IBGE (Instituto Brasileiro de Geografia e

Brazilians over the age of 10) own a smartphone. By 2022, 87.2% of the population is online, and by 2025 this figure is expected to rise to 98.7%, which will lead to an increase in consumption (Costa et al., 2023). Technology has played an important role in changing education, especially in the teaching of English and other languages. The integration of new educational technologies offers a unique opportunity to improve teaching and learning and make it dynamic, effective and efficient (Silva and Oliveira, 2022). Therefore, we see the rapid development of technology and how it is having a huge impact on many aspects of our society, beyond class boundaries (Martins and Pereira, 2021). In this case, technology has become an important ally for teachers by providing opportunities for dialog and access (Gomes and Andrade, 2022).

The integration of the four primary languages in this technological problem goes beyond simply connecting reading, writing, listening and speaking in the classroom and/or ways of establishing communication between students. For example, it allows students to develop the ability to use English and technology to access social, business, academic or professional opportunities (Almeida, 2023). Nowadays, people use their smartphones every day for various reasons, from checking the situation at home to going to work, buying airline tickets and selling all kinds of products. Therefore, mobile learning includes many different cultures, including additional language learning content (Ferreira and Sousa, 2023). When it comes to teaching and the use of technology, they are not mutually exclusive, but complementary, and many teachers try to follow a middle path to modify the process in the traditional classroom according to current needs (Rodrigues and Lima, 2022). In this way, the process of teaching English will be more honest than communication skills, including linguistic structure and communication in a technological environment (Nogueira, 2023).

In summary, the previous paragraphs have discussed the importance of technology in people's lives and some important aspects that need to be taken into account in language teaching and learning. In recent years, the author, as a student and future professional in the field of education, has become interested in the opportunities that new technologies provide for foreign countries. The rapid advance of technology and the popularity of smartphones in society has sparked an interest in learning how to use this tool to teach English. This personal interest, combined with the growing need for new and useful teaching methods, led him to carry out this study, focusing specifically on comparing two popular phones: Duolingo and Memrise. **The**

aim of this study is to highlight some aspects that involve language and learning through the use of technological resources, considering the importance of integrating the four language skills for the development of learners' communicative language abilities. Therefore, it is described, and a comparison is made between two mobile applications which were created to help individuals to learn English as an additional language. Duolingo and Memrise. Which app would most successfully develop students'/users'⁵communicative language skills? Considering the benefits provided by the use of technological tools such as the smartphone applications – through M-learning – available, which might make learning more engaging and motivating.

To meet the proposed objective, we analyzed the usability of the apps, the quality and relevance of the pedagogical content, the ability to personalize it to meet the individual needs of the students, and the interactive features offered, such as immediate feedback and practical activities. In addition, specific aspects of communicative competence were assessed, such as vocabulary, pronunciation and grammar, providing a comprehensive overview of the pedagogical approaches of each app.

This article will be structured as follows six main sections, ranging from theoretical contextualization to a detailed comparative analysis of the apps. The first section, “Shifting in Teaching and Learning English”, discusses the paradigmatic shifts in English teaching and learning, highlighting the transition from traditional methods to more interactive and student-centered approaches. The second section, “The Era of Technology”, explores the impact of technological innovations on education, emphasizing how technology has transformed the way students learn languages. The third section, “Mobile Learning”, focuses on mobile learning, discussing its advantages, challenges and the growing popularity of mobile devices as educational tools. The fourth section, “Mobile Learning Apps Description”, provides a detailed description of the two apps, addressing their features, functionalities and pedagogical approaches. The fifth section, “Methodology”, describes the methods used for the comparative analysis, including criteria used to perform the analysis. The sixth section, “Comparative Analysis between Duolingo and Memrise”, presents the comparison, discussing the differences and similarities between the apps in terms of usability, pedagogical content, personalization and effectiveness in developing communicative competence. Followed by the last section, “Final Considerations”.

⁵ In this study the terms ‘learner’ and ‘user’ are considered equal. Both refer to an individual learning an additional language using a technological tool.

2 SHIFTING IN TEACHING AND LEARNING ENGLISH

The teaching and learning of additional languages are a deeply complex and variable area, whose dynamics are reflected not only in changes in pedagogical theories, but also in technological advances and constantly changing social and cultural aspects. According to Harmer (2007), “additional language teaching is a complex activity involving a number of interconnected variables, from language skills to the cultural and social aspects involved” (p. 67). In this sense, a detailed understanding of this process becomes essential for a meaningful and effective approach to teaching additional languages.

Over the years, the framework of additional language teaching has been modified by a number of interrelated factors, ranging from emerging pedagogical theories to the impact of technological innovations in the educational field. As Brown (2001) mentions, “the evolution of additional language teaching reflects not only changes in methodological approach, but also the incorporation of digital technologies and an understanding of students’ needs and interests” (p. 45).

According to Larsen-Freeman (2011), “the assessment of language skills in additional language teaching requires a comprehensive understanding of the interactions between language, culture and the learning environment” (p. 62). By delving into the complexities involved in the formation of language skills in additional language students, it becomes feasible to identify pedagogical strategies and methods that meet contemporary needs and prepare students for effective communication in multicultural and globalized environments.

Over time, the teaching of additional languages has been shaped by various pedagogical approaches that reflect changes in educational visions and linguistic theories. In the 19th century, the grammar-traditional approach was predominant, focusing on memorizing grammar rules and translating classical texts. Authors such as Harmer (2007) emphasize the importance of this period in the context of language teaching, highlighting the importance of grammatical accuracy and reading complex texts as a means of improving students’ language skills (p. 38).

On the other hand, in the 20th century, there was a search for more communicative and functional theories, due to the influence of thinkers such as Brown (2001). This approach focuses on interaction, contextualization and authentic language use. The communicative approach recognizes the four main language skills: listening comprehension, reading comprehension, oral practice and writing. Brown (2001) states that

The communicative approach seeks to equip students with the skills they need to communicate effectively and meaningfully in real-life situations, which requires, among other things, clear comprehension and expression (BROWN, 2001, p. 50).

This shift from a grammatical-traditional perspective to a communicative one not only means a change in the way languages are taught, but also an adaptation to the needs of students in an increasingly globalized and interconnected world. As Larsen-Freeman (2013) points out, “the communicative nature of the approach affirms the vital role of language in social and cultural interaction, promoting students’ participation in real communication situations” (p. 128).

Today, English language teaching has developed significantly, driven by technological and methodological advances that aim to make the teaching-learning process more efficient and engaging. Recent studies highlight that the use of digital technologies and innovative approaches has transformed the way English is taught, allowing for greater personalization and interaction in learning (Brown & Larson, 2023). In addition, the focus on communicative methodologies and the use of digital tools, such as learning apps and online platforms, have provided a more dynamic learning experience tailored to students' individual needs (Johnson et al., 2022). One of the major trends is the integration of digital technologies into educational environments. Tools such as language learning apps, e-learning platforms, interactive multimedia and artificial intelligence resources are widely used to provide students with a more dynamic and personalized learning experience. For example, according to Andrade (2018, p.45), the use of mobile apps allows students to practice English anytime and anywhere, increasing exposure to the language and promoting knowledge retention.

In addition, a communicative approach plus a technological tool that emphasizes linguistic interaction and practical use remains a fundamental pillar of English teaching. This approach focuses on communicative competence, centering on students’ ability to use language in authentic communicative situations, rather than just understanding grammatical rules. This concept was first coined by Hymes, in the late 1960s as a reflection upon the following key positions on knowledge and use of language. Briefly, communicative competence means: (a) the ability to use a language well involves knowing (either explicitly or implicitly) how to use language appropriately in any given context; (b) the ability to speak and understand language is not based solely on grammatical knowledge; (c) what counts as appropriate language varies according to context and may involve a range of modes – for example, speaking, writing, singing, whistling, drumming, and (d) learning what counts as appropriate language occurs

through a process of socialization into particular ways of using language through participation in particular communities. (HYMES, 1972, p. 279).

To reinforce this perception, Brown (2014, p. 123) points out, a communicative approach can promote more meaningful learning when students engage in activities that simulate everyday situations, thus increasing fluency and confidence in speaking English.

It is important to mention that it is the ‘personalization of learning’, which recognizes that each student has different needs, learning styles and rates of progress. With the help of advanced technology, teachers can provide more adaptive teaching, adjusting content and activities based on students’ individual performance. As Johnson (2017) puts it, adaptive learning platforms use algorithms to identify areas where students need more support and provide specific resources to fill those gaps, thus significantly improving learning outcomes (p. 88).

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New technologies have profoundly and significantly transformed the teaching of additional languages, including the teaching of English. In the work of Chander and Arora (2020)

It is clear that the integration of Information and Communication Technologies (ICT) into traditional teaching-learning methods brings a series of benefits, ranging from attracting students to teaching materials to facilitating interactivity between teachers and learners. The use of the Internet, in particular, has been a great facilitator in this context, providing an educational environment integrated with various media and allowing for more effective and efficient communication (CHANDER and ARORA, 2020, p. 86).

It is also considered the potential of digital technologies to enrich learners’ intercultural knowledge. The Internet, with its multicultural and multilingual nature, not only facilitates communication between learners from different cultures, but also promotes the development of the ability to appreciate and critically analyze intercultural diversity (LOPES, 2012 p. 12). This is essential to prepare learners to use English appropriately in intercultural communication situations, promoting a deeper understanding and mutual respect between people from different cultures and backgrounds.

These different pedagogical approaches are not contrary to each other, but complementary, and many educators follow a middle path in which aspects of the traditional

grammar approach are incorporated and aspects of the communicative approach are valued (BROWN, 2007).

In this way, the English language teaching-learning process might be fairer with the development of communicative competence, considering important all elements that constitute it, from linguistic structures, appropriateness in use, cultural aspects, interaction, communication practice and, of course the assistance of technology.

3 THE ERA OF TECHNOLOGY

In the field of language teaching, this fusion between technology and education offers transformative potential, reshaping the way languages are taught and learned.

Linhares and Andrade (2018) point out that information and communication technologies (ICTs) have affected all fields of human life through their evolution and importance in social relations and have played a crucial role in the evolution of the teaching-learning process, reflecting the understanding of researchers in this area.

For Mishra and Koehler (2006), ICTs should not just be seen as isolated tools, but as part of a broader and more dynamic educational environment. The accessibility provided by ICTs, as mentioned by Bates (2015), “is fundamental to overcoming geographical and time barriers, allowing more democratic access to knowledge”.

According to Siemens (2005), ICTs enable more personalized and adaptive learning by offering a variety of interactive and collaborative resources. This view is complemented by Deterding et al. (2011), who highlight the potential of digital technologies for gamification learning, making the process more engaging and motivating for students.

Gaya (2022) highlight that “playing a game” is much more attractive than “learning a plain lesson”. When game features are introduced into a learning environment, the objectives are not to play, but to teach and learn. The idea is not just to entertain the students and provide them with fun, but to provide something greater that enhances a certain type of learning (LEFFA, 2024). Therefore, the gamified applications have risen such interest in the educational field, as Gaya (2022) mentions “gamification is based on the use of game elements - such as mechanics, dynamics and components and/or elements - in contexts other than their initial application⁶” (p.126), and it has emerged as an innovative approach in the context of English

⁶ Original text: A gamificação se baseia no uso de elementos de jogos, como mecânica, dinâmica e componentes e/ou elementos, em contextos diferentes de sua aplicação inicial (Gaya, 2022, p. 126).

teaching, using the dynamic and motivational elements inherent in games to transform the educational experience.

Based on intrinsic motivation theory, such as that proposed by Deci and Ryan (2000) in Self-Determination Theory, gamification aims to engage students through game mechanics such as points, badges and levels, creating a learning environment that is both challenging and rewarding (Deterding et al., 2011, p. 10). By implementing gamification strategies, educators might promote more active and engaging learning, favoring the retention and practical application of the knowledge learned.

In this context, authors such as Rose and Meyer (2016) emphasize the importance of adopting universal pedagogical practices, complemented by digital technologies, to ensure an equitable and inclusive education for all students.

However, as Selwyn (2016) points out, it is essential to adopt a critical approach to the use of technologies, ensuring that they are used ethically, safely and equitably. It is also necessary to invest in the training and professional development of educators, as argued by Fullan (2013), so that they can use these technologies effectively and meaningfully in their teaching practices.

The strategic use of mobile apps has proven to be key to enriching the learning experience and engaging students effectively. According to Johnson et al. (2018), mobile apps provide flexibility and convenience, allowing students to access educational content at any time and from anywhere, using their mobile devices such as smartphones and tablets.

4 MOBILE LEARNING

In recent years, the speed and complexity of the Internet and social networks have increased dramatically. This development has led to an increase in the number of people using the Internet on the World Wide Web and in the variety and number of mobile devices used.

These advances have led to new forms of distance learning, such as e-learning and mobile learning (also known as M-learning).

The concept of M-learning was first introduced into scientific literature in 2001, highlighting the advantages of studying anywhere and at any time (MÜLBERT; PEREIRA, 2011). M-learning is an educational modality that has evolved from e-learning. The main distinction between them lies in the interaction tool used by the student: M-learning is carried out using mobile devices such as cell phones and tablets, while e-learning uses computers.

Geddes (2004) mentioned by Gaya (2022) establishes M-learning as “the acquisition of any knowledge and skill through the use of mobile technology, anywhere, anytime”, for this reason it stands out for its ubiquity and functionality. Smartphones are ubiquitous and cheap, which makes them a useful tool for democratic education. As their usability is much greater than other tools, they can support the implementation of e-learning programs in various locations, including remote and poor areas....

The growth and popularity of M-Learning brings many benefits to modern education, especially in terms of accessibility, affordability and flexibility. The portability of mobile devices allows learning to take place in a variety of environments and times, breaking down the spatial and temporal limitations imposed by face-to-face educational models. This flexibility is essential to meet the needs of students who, for various reasons, cannot attend classes at fixed times or in specific locations (Moran, 2015, p. 45).

In addition, the interactive capacity of mobile devices, such as the use of educational apps and learning platforms, might promote a more dynamic and personalized engagement. As highlighted by Moran (2015)

The integration of ICTs in education makes it possible to create more collaborative and interactive learning environments, where students can actively participate in the educational process, rather than being passive recipients of information. (MORAN, 2015, p. 50)

Promoting M-learning also presents a major challenge. One of the biggest obstacles is the lack of access to high-speed Internet technology. In many areas of Brazil, especially rural and low-income areas, connectivity is still low, which can limit the potential of M-learning to improve education. According to the UNESCO report (2020, p. 75), digital inequality is an important factor that must be addressed if all students are to benefit from new learning opportunities.

Another important challenge is the lack of digital literacy, in other words, training teachers as well as students to use these technologies effectively. As Silva and Barbosa (2020) point out, the successful adoption of M-learning requires educators to be adequately prepared to integrate mobile devices and educational applications into their teaching practices. This implies continuous investment in training and the development of digital skills on the part of teachers (p. 53).

Despite the challenges, the opportunities offered by M-learning are wide-ranging and successful. The development of technology in education can not only connect with traditional

teaching, but also change its meaning, providing new teaching and learning opportunities based on the needs of the 21st century.

M-learning has established itself as a new teaching method which, if used correctly, can overcome traditional problems and provide better and more effective learning. It is important that public policies and investments are directed towards overcoming infrastructure and education challenges so that M-learning can reach its potential and benefit many students here in Brazil and around the world.

5 MOBILE LEARNING APPS DESCRIPTION

The selection of the Duolingo and Memrise apps for comparative analysis is based on their distinctive features and wide global adoption. Duolingo is recognized for its gamified approach and focus on grammar translation, offering insights into the effectiveness of structured, repetitive learning. Memrise, on the other hand, stands out for its communicative approach and use of authentic materials, such as videos of native speakers, providing a more contextualized and practical experience. Both have user-friendly interfaces and interactive features, such as immediate feedback, which maintain engagement and promote active learning. Comparing them allows us to explore different pedagogical methodologies in English teaching, providing a comprehensive view of the potential and limitations of each tool.

First of all, it is necessary to describe both apps in order to have a better understanding of their full capacity in helping their users to learn English as an additional language.

DUOLINGO



Duolingo⁷ is a language learning application that falls into the category of mobile learning, where learning is carried out using a mobile device (smartphone, tablet or computer). Duolingo is one of the most cited apps by students, teachers on social networks and researchers (Paiva, 2017).

Ibad (2022) argues that

⁷ Disponível em: <https://pt.duolingo.com/>

mobile learning refers to the learning process supported by the use of wireless mobile device technology, with the characteristic that users are students who do not need to be physically in the same place, such as a classroom, instruction room or training site. These students have mobile devices as part of their daily routine (Ibad, 2022).

Duolingo is a free language learning app, but if the learner wants a certificate, he/she will need to pay a certain amount to get this benefit, this app was created by Luis Von Ahn and Severin Hacker (Paiva, 2017). As well as being available on the web, Duolingo is also available on various operating systems, such as Android, iOS and Windows Phone. To access the app, users can create an account or log in with their Google or Facebook accounts. This app offers 66 different language courses and is available in 23 languages. Leffa (2014) describes the app by

Showing that, in terms of design, it is a successful example of gamification in the field of language teaching, while, in methodological terms, it falls short, mainly because it is a closed system, not allowing the proposed activities to be adapted by the teacher to meet the specific needs of their students⁸. (LEFFA, 2014, p.1, *our translation*)

Lessons are provided both in writing and by voice, and there is also speaking practice for more experienced users. Leffa (2014) says that

In terms of language teaching, the emphasis is on translating words and phrases between the student's language and the target language, but there are also moments of listening, where the student writes down what they hear in the target language. It works like a dictation of words and phrases; at no time is there anything that could be compared to an oral comprehension activity involving a dialog, a presentation or an interview. Oral production exercises, in which the system evaluates what the student says, also occur, but they are rarer and do not guarantee a reliable evaluation. (LEFFA, 2014⁹, p. 2, *our translation*)

There are questions in a chapter that users of this application must solve. Each chapter consists of sentences that must be translated, and these sentences can contain new or already

⁸ Original text: Em termos de ensino de idiomas, a ênfase está na tradução de palavras e frases entre o idioma do aluno e o idioma-alvo, mas também há momentos de escuta, em que o aluno escreve o que ouve no idioma-alvo. Funciona como um ditado de palavras e frases; em nenhum momento há algo que possa ser comparado a uma atividade de compreensão oral envolvendo um diálogo, uma apresentação ou uma entrevista. Exercícios de produção oral, nos quais o sistema avalia o que o aluno diz, também ocorrem, mas são mais raros e não garantem uma avaliação confiável. (Leffa, 2014, p. 1)

⁹ Original text: Em termos de ensino de idiomas, a ênfase está na tradução de palavras e frases entre o idioma do aluno e o idioma-alvo, mas também há momentos de escuta, em que o aluno escreve o que ouve no idioma-alvo. Funciona como um ditado de palavras e frases; em nenhum momento há algo que possa ser comparado a uma atividade de compreensão oral envolvendo um diálogo, uma apresentação ou uma entrevista. Exercícios de produção oral, nos quais o sistema avalia o que o aluno diz, também ocorrem, mas são mais raros e não garantem uma avaliação confiável. (Leffa, 2014, p. 2)

learned words. “The course uses the grammar and translation method, with the support of drawings for the presentation of vocabulary and audio for pronunciation. With each exercise done, the learner receives automatic feedback – “Correct!” - accompanied by a sound¹⁰” (Paiva, 2017, p. 16). Each correct answer adds points, and vice versa.

Paiva (2014) says that the course offered by the app is based on gamification. Each stage the player wins unlocks new stages and earns “lives” represented by hearts and crystals. However, it is noticed that although it works with heart icons that can be lost during each lesson, there is no clear emotional involvement, as it is not clear how the loss of hearts interferes with the game as a whole.

Paiva (2017, p. 17) says that each unit has its own activity, which she lists as:

- *Image Identification*: The user must select the correct image from four options that illustrate a particular English word.
- *Touch Translation*: Translation of a noun phrase from Portuguese into English using a list of words available for touch selection.
- *Typed Translation*: Translation of one or two noun phrases from Portuguese into English that require the answer to be typed in.
- *Sentence Translation (English/Portuguese)*: Translation of a sentence from English into Portuguese with a list of words available to choose from by touch.
- *Sentence translation (Portuguese/English)*: Translation of a sentence from Portuguese to English using a list of words available for touch selection.
- *Phrase Translation (Portuguese/English) by Typing*: Translation of a phrase from Portuguese to English that requires typing the answer.
- *Correct Word Selection*: Translation of a word with a list of three options for selection by touch.
- *Complete the Sentence*: Exercise where the user completes a sentence in English by typing in a word chosen from a list of three options.
- *Translation of Linked Syntagms*: Translation of two noun phrases linked by the conjunction “and”, with a selection of options.
- *Tap the Pairs*: Exercise to pair words with their respective translations.

¹⁰ Original text: O curso usa o método de gramática e tradução, com o apoio de desenhos para a apresentação do vocabulário e áudio para a pronúncia. A cada exercício realizado, o aluno recebe um feedback automático - “Correct!” - acompanhado de um som. (Paiva, 2017, p. 16)

- *How to Say It (Image)*: Exercise where the user has to type in the translation of a term from a displayed image.
- *How it's Said (Touch Choice)*: Exercise where the user chooses the correct translation from a list of three options.
- *As You Say (Typing)*: Exercise where the user has to type in the correct translation of a presented term.
- *Auditory Sentence Translation*: Translation of a sentence that can be read and heard, requiring the translation to be typed in.
- *Connected Syntagms Translation (Portuguese)*: Translation of two noun phrases in Portuguese linked by the conjunction “and”.
- *Dictation*: Exercise where the user listens and types in phrases and sentences.

Some activities are solved based on drawings, such as the one in figure 1, which challenges users to identify the correct image and shows some drawings that show a bottle of water, coffee, milk and a cup of tea, with their proper names in English. Another activity is to translate phrases, in which there is a sentence, as in image 2, in which the phrase is “Coffee and tea”, the activity asks users to click on the words, which are in balloons, to form the complete sentence. Users can share their achievements within the app, these shares can be through social networks such as Instagram, WhatsApp, Twitter (now X) and Facebook, save the image to share with friends and even send it by email, as shown in figure 3. “At the end of each sequence, the learner has the opportunity to choose to practice the unit and, each time they make this choice, a new sequence of the exercises already done appears again¹¹” (Paiva, 2017, p. 18). The learner can choose to abandon a stage and also to skip units in any period. Receiving crystals when completing activities and levels (see figure 4) is a way of stimulating the learner. These crystals can be exchanged for more hearts, giving the learner another chance after losing hearts after making several mistakes in certain exercises.

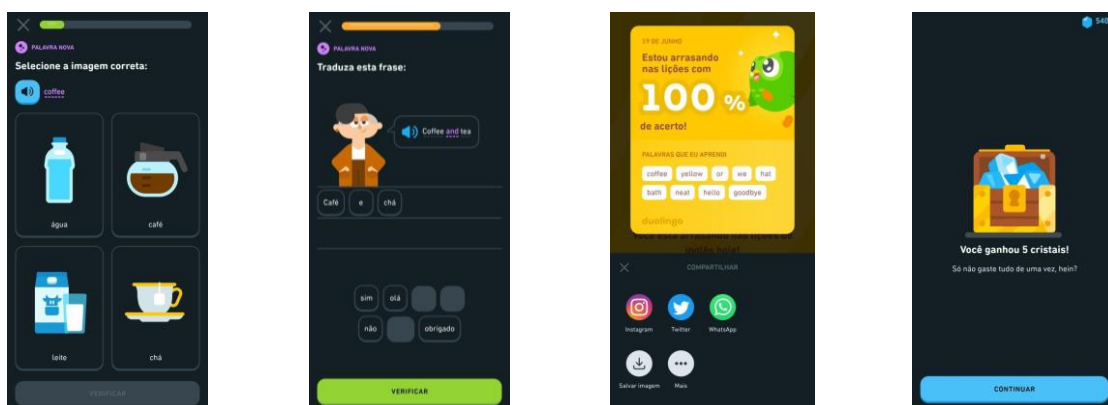
Figure 1

Figure 2

Figure 3

Figure 4

¹¹ Original text: No final de cada sequência, o aluno tem a oportunidade de escolher praticar a unidade e, sempre que fizer essa escolha, uma nova sequência dos exercícios já realizados será exibida novamente (Paiva, 2017, p. 18)



Source: Screenshots from the author's cellphone while performing tasks on Duolingo.

According to information on the Duolingo website, at each level, the learner earns an ingot multiplied by the number of the level they have reached, as long as they have not used any shortcuts to get to the next level. There are other ways of earning ingots: inviting a friend and having them use the app, 1 ingot for every 10 days of offense and 1 ingot for voting in favor of a document sent by the student to the immersion area. With this virtual currency, the learner can buy more content and block offenses so that the number of offenses does not drop, even if they are inactive for a day. As also observed by Gunter et al (2016), there is no investment in interaction or communicative functions, and most tasks require mechanical memorization.

Another important aspect is the creation of a specific area for educators, as highlighted by Munday (2016, p. 88), where “educators create groups or classes” on the site, facilitating the use of the platform in school environments. This initiative demonstrates a commitment to expanding educational opportunities, although the artificiality of the initial material remains a point of criticism.

Duolingo therefore presents a robust and interactive platform that benefits many learners but faces challenges in terms of content relevance and feedback accuracy at more advanced levels. Initiatives to improve the user experience, such as the area dedicated to teachers, are positive steps, but the full effectiveness of the app will depend on continuous improvements to the content and social interaction features, providing a more natural and collaborative learning experience.

After exploring Duolingo's features and functionalities, it is essential to examine another widely used app for teaching additional languages: Memrise.

MEMRISE



The Memrise¹² app represents an innovative tool for language teaching and learning, standing out for its differentiated approach that combines effectiveness and fun, as described on the app's official website (MEMRISE, 2023). Founded in 2010 by Ben Whately, Ed Cooke and Greg Detre, Memrise quickly gained a global audience, with more than 50 million users in 189 countries, offering a platform that prioritizes self-development and global connection (MEMRISE, 2023). This app has a free version and a paid version, called Memrise Pro, which significantly expands the features offered, including access to 30,000 videos with native speakers and unlimited conversation practice, without the presence of ads (MEMRISE, 2023).

Memrise is simple to use, according to Nuralisah and Kareviati (2020, p. 496)

This application can be used with a website, and sign in using a Google or Facebook account, but can also be done by downloading the application in the play store or mobile app store so that it can be used more easily and practically.

One of Memrise's notable features is its linguistic variety, allowing users to choose from different language variations, such as British and American English, as well as Spanish from Spain and Mexico.

When users start using Memrise, they are asked to select their mother tongue and the language they want to learn, with options for proficiency levels ranging from beginner to intermediate. For the purposes of this study, it was decided to start from scratch in learning American English. The app is structured into four main sections: Start, Learn, Immerse and Communicate, each offering different tools and resources to facilitate learning. The "Learn" section, for example, features a recommended learning path as well as 15 lesson themes, although not all activities are available in the free version.

Despite these limitations, Memrise stands out for its incorporation of gamification elements, which makes the learning experience more engaging and less repetitive. Based on Gee's (2005) principles of learning in games, we identified several of these principles in the app, although some features have been removed in recent updates. The Identity Principle, for example, previously present with the character Ziggy, is no longer available. However, the

¹² Disponível em: <https://www.memrise.com/pt-br/>

Interaction Principle is well implemented through immediate feedback, albeit not explanatory, and the Production Principle is observed in the possibility of creating additional courses.

Other principles, such as the Risk Principle and the Challenge and Consolidation Principle, are partially found in revision and vocabulary acquisition activities. However, principles such as “On time” and “On demand” are not fully implemented, unlike Duolingo, which offers guides with grammar and vocabulary tips during activities.

A distinctive feature of Memrise are the “mems”, tips or tricks provided by users themselves to help memorize new words, associating content with personal meanings (Harres et.al., 2021, p. 6). This aspect sets it apart from other apps, contributing to a deeper and more personalized understanding of vocabulary. As it shows in figures 5, 6, 7 and 8.

Figure 5

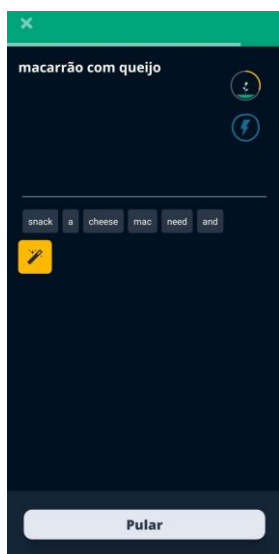


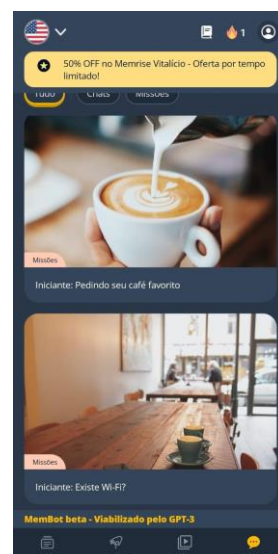
Figure 6



Figure 7



Figure 8



Source: Screenshots from the author's cellphone while performing tasks on Memrise.

METHODOLOGY

The methodology used for the research consisted of conducting a qualitative and exploratory investigation through bibliographic sources to investigate through a comparative analysis Which mobile application best develop learners' communicative language skills, Duolingo or Memrise.

It is also important to highlight the importance of communicative learning of an additional language. The research is based on authors who mention English language teaching and learning shifting throughout the years, such as Brown (2001), Harmer (2007), and Larsen-Freeman (2011), who argue in favor of the blending approaches, which means that a combination of different methodologies might be beneficial for learners.

Moreover, it is relevant to have a good understanding of the theory of M-learning, as pointed out by researchers such as Mübert and Pereira (2011), Moran (2015) and Silva and Barbosa (2020), who discuss the benefits of M-learning as well as the effectiveness of the use of technological resources, such mobile apps for practicing, developing, and improving learners' communicative language skills.

Following the literature review, we carried out by a comparative analysis between both apps mentioned beforehand, which were designed to assist English language learners.

The form of exploratory research, according to (Yin, 1994), “the researcher understands what is happening, seeks for new insights, asks questions and assesses phenomenon in a new light”. Thus, it is important to raise reflection on how mobile applications might improve language skills.

According to Berg and Lune (2014, p.8), “qualitative research properly seeks answers by examining various [social] settings and the groups or individuals who inhabit these settings”. In fact, it underlies the development of different research traditions and methods, it is a debate on the nature of knowledge and the status of assertions about the world.

In this sense, to accomplish the proposed aim, we analyzed the usability of the apps, the quality and relevance of the pedagogical content, the ability to customize it to meet students' individual needs and the interactive features offered, such as immediate feedback and practical activities. Furthermore, specific aspects of communicative competence were assessed, such as vocabulary, pronunciation and grammar, providing a comprehensive overview of the pedagogical approaches of each app.

In this way, the results of the qualitative research were organized into a section that describes both apps mentioned, explains their functionalities, in to develop learners' communicative language skills. The next section will cover the analysis of the research, presenting the comparison made between Duolingo and Memrise applications.

COMPARATIVE ANALYSIS

As mentioned before, it is going to be analyzed in the following aspects on both apps. Which app would be more appropriate to develop users' communicative language skills?

The rise in popularity of mobile devices has fostered the creation of language learning apps, with Duolingo and Memrise emerging as two of the most widely used tools for studying English. These platforms employ distinct methods that align with various teaching theories and practices. In order to properly evaluate these apps, it is crucial to examine their approaches to develop communicative language skills. In addition, specific aspects of communicative competence were assessed, such as vocabulary, pronunciation and grammar, providing a comprehensive overview of the pedagogical approaches of each app.

Duolingo is often characterized by its predominant use of grammar translation. This methodology, which has its roots in traditional language teaching, focuses on translating sentences and learning grammar rules. On Duolingo, users often find exercises that require them to translate sentences between English and their mother tongue, thus reinforcing grammatical structure through repetition and memorization. According to Ortega (2009, p. 18), grammar translation can be effective for internalizing linguistic structures, but it can limit fluency and spontaneous communicative ability. Therefore, Duolingo, while useful for solidifying grammatical knowledge, may not be the best tool for those looking to develop advanced communicative skills.

In contrast, Memrise takes a more communicative approach. This app uses learning techniques that involve real contexts and phrases used in everyday life, which favors practical and functional communication. According to Richards and Rodgers (2014, p. 87), the communicative approach emphasizes interaction and the use of language in authentic contexts, thus facilitating the acquisition of communicative skills. Memrise includes videos of native speakers, which gives users exposure to natural pronunciation and intonation, promoting greater familiarity with everyday language use.

When it comes to developing listening skills, Memrise stands out for offering a wide range of listening exercises. The videos with native speakers are a valuable resource, as they allow users to listen to various variations in accents and ways of speaking, thus broadening their listening comprehension. This approach is fundamental in the educational context, as pointed out by Harmer (2010, p. 109), who emphasizes the importance of exposing students to different varieties and accents of English, rather than limiting practice to the teacher's voice. In addition, Brown also pointed out that (2007, p. 254), exposure to different language variations is crucial for developing listening competence. On the other hand, Duolingo offers more limited listening

exercises, with short, simplified sentences, which may not be enough to fully develop this skill at more advanced levels.

When it comes to speaking, both Duolingo and Memrise present challenges. Duolingo includes repetition and pronunciation exercises, where the user has to repeat phrases dictated by the app. However, the lack of human interaction limits the development of fluency and the ability to respond spontaneously. As Harmer (2007, p. 104) notes, real interaction is fundamental to the development of speaking skills. Memrise, on the other hand, although it includes pronunciation exercises, does not offer a robust interactive environment for practicing conversation. However, exposure to videos of native speakers can provide users with a more authentic model of pronunciation and language use, which can be beneficial for autonomous practice.

In terms of accessibility, it would be essential to implement some additional features. For visually impaired users, both apps could improve compatibility with screen readers, including image descriptions, interface adjustments to facilitate keyboard navigation and the option to increase font size. The creation of audio-only content that allows learning without relying on visual elements would also be a significant improvement.

For hearing-impaired users, the introduction of subtitles on all videos and audio materials, as well as options in sign language, would increase access to and understanding of the content. Another important aspect would be the development of activities that do not depend exclusively on auditory or visual skills, allowing for greater flexibility in learning.

Therefore, although Duolingo and Memrise offer basic accessibility features, there is a clear need for improvement in order to fully meet the diverse needs of users with disabilities. The inclusion of these features would not only make these apps more accessible, but would also reflect a deeper commitment to inclusive and equitable education for all.

When comparing Duolingo and Memrise, it can be seen that each app has strengths and limitations that align with different learning objectives. Duolingo is more effective for learning grammar and translation, while Memrise offers a more communicative and context-rich approach, favoring listening comprehension. For the development of speaking skills, both apps have limitations, highlighting the need for additional practice involving human interaction to complement learning. Thus, the choice between Duolingo and Memrise should be guided by the specific needs and objectives of each learner, and both can be used in a complementary way for more comprehensive and effective learning.

Continuing the comparative analysis between the Duolingo and Memrise apps for teaching and learning English, it is essential to examine various factors that influence the effectiveness and quality of learning. These factors include the usability of the app, the quality and relevance of the pedagogical content, the ability to personalize it to meet students' individual needs, and the interactive features offered, such as immediate feedback and practice activities. In addition, the integration of the four skills (listening, speaking, reading, writing) is crucial for a complete assessment.

The usability of an app is key to ensuring that users have a fluid and intuitive learning experience. Duolingo is often praised for its user-friendly and gamified interface, which makes learning enjoyable and motivating. As pointed out by Reinders and White (2016, p. 145), gamification can increase student motivation by making the learning process more engaging. Duolingo uses rewards, daily goals and a level system that encourages continuous progression.

Memrise, on the other hand, also features an intuitive interface, but with a slightly different approach. This app uses a combination of videos of native speakers and visual memorization techniques that help users retain vocabulary and phrases. Memrise's visual approach is particularly effective for long-term memorization, as discussed by Thornbury (2012, p. 58), who highlights the importance of visual support in vocabulary learning.

The quality and relevance of the pedagogical content is crucial to the success of any language learning program. Duolingo offers a wide range of lessons covering everything from basic vocabulary to more complex grammatical structures. However, its approach can be seen as mechanical and repetitive, focusing more on translation and memorizing phrases out of context.

Memrise, on the other hand, offers content that is often contextualized in everyday situations. The use of videos of native speakers in real-life situations gives students a more authentic exposure to the language, as pointed out by Gilmore (2007, p. 103), who argues that the authenticity of teaching material is vital for effective learning. This means that Memrise offers teaching content that is not only relevant, but also applicable in real communication situations.

The ability to personalize is another important factor to consider. Duolingo allows users to choose their learning pace and focus areas, but the customization options are relatively limited. The app follows a linear structure that may not meet the specific needs of all learners. According to Tomlinson (2011, p. 56), personalization in language teaching is crucial to meet the diverse needs of students and maximize learning effectiveness.

Memrise offers greater flexibility in personalization. Users can choose specific courses that suit their needs and interests, and the application adapts to the student's pace. In addition, the possibility of creating and sharing personalized courses is a powerful feature that allows for even greater adaptation. As Godwin-Jones (2014, p. 13) states, personalization and flexibility are essential for meaningful and sustained learning.

Interactive features, such as immediate feedback and hands-on activities, are essential for maintaining engagement and promoting active learning. Duolingo provides immediate feedback on exercises, which helps users correct mistakes quickly. This instant feedback is an important component of learning, as evidenced by Hattie and Timperley (2007, p. 81), who highlight the importance of feedback for the continuous improvement of student performance.

Memrise also offers immediate feedback but complements this with practical activities involving videos and interactive exercises. This combination of feedback and active practice is effective in reinforcing learning and ensuring that users not only memorize information, but also know how to apply it in real contexts. As argued by Ellis (2005, p. 92), interactive practice is essential for the acquisition of language skills.

The integration of the four skills (listening, speaking, reading, writing) is crucial for complete language learning. Duolingo focuses mainly on reading and writing, with exercises that involve translating and writing sentences. Although it offers some listening and speaking activities, these are relatively limited and not as interactive as they could be. As Harmer (2007, p. 345) states, integrated practice of all four skills is essential for balanced and effective learning.

Memrise, however, offers a more balanced approach. The use of videos of native speakers provides excellent listening practice, while pronunciation exercises help develop speaking skills. In addition, the writing and reading exercises are contextualized and based on real-life situations, which encourages a more natural integration of skills. According to Richards (2008, p. 193), the integration of skills is fundamental to developing proficiency in a second language in a holistic way.

Duolingo and Memrise take different approaches to teaching vocabulary. Duolingo uses a combination of spaced repetition and gamification to help users memorize and retain vocabulary. The platform introduces new words gradually, reinforcing them through repetitive exercises that include translation and associating words with images. This technique is effective because, according to Nation (2001, p. 78), spaced repetition is a proven strategy for long-term

vocabulary retention. In addition, gamification keeps users engaged, encouraging regular practice.

Memrise, meanwhile, uses an approach that combines visual memorization and practical contextualization. The app presents words and phrases in authentic contexts, often using videos of native speakers to show the use of vocabulary in real situations. This approach is supported by Thornbury (2012, p. 58), who highlights the effectiveness of visual support and contextualization for vocabulary acquisition. The combination of images, videos and authentic context facilitates the memorization and practical use of new words.

Pronunciation is an essential skill for effective communication, and both apps offer resources to help users improve this competence. Duolingo includes pronunciation exercises where users must repeat words and phrases after listening to recordings of native speakers. The app uses voice recognition technology to assess pronunciation accuracy, providing immediate feedback. According to Derwing and Munro (2015, p. 98), “immediate feedback is crucial for correcting pronunciation errors and improving fluency”.

Memrise also offers pronunciation resources, with a greater emphasis on exposure to authentic speech models. Videos of native speakers are a valuable tool, allowing users to hear and imitate natural pronunciation and intonation. However, Memrise does not offer the same level of interactivity in terms of pronunciation feedback as Duolingo. According to Celce-Murcia et al. (2010, p. 374), exposure to native models is fundamental, but active practice and feedback are equally important for pronunciation development.

Each app’s approach to teaching grammar also varies significantly. Duolingo focuses heavily on grammar through translation exercises and activities that require the correct use of grammatical structures. This methodology, although traditional, is effective for understanding and memorizing grammar rules, as indicated by Ur (2012, p. 136), who suggests that repetitive practice is crucial for internalizing grammar structures.

Memrise, on its part, integrates grammar teaching in a more implicit way, through authentic sentences and contexts. Instead of direct translation exercises, Memrise presents grammar within contexts of use, which can be more effective for the practical application of grammar rules. Ellis (2006, p. 85) argues that contextualized grammar helps students understand how structures are used in real communication, facilitating the transfer of grammatical knowledge into communicative practice.

The comparison between Duolingo and Memrise reveals that each app has distinct and complementary approaches to teaching English communication skills. Duolingo is particularly

strong at teaching grammar and vocabulary through repetition and translation methods, supported by a gamified interface that keeps users engaged. Its pronunciation features, while effective, benefit from voice recognition technology to provide immediate feedback, which is crucial for error correction and continuous improvement. Memrise, on the other hand, offers a more contextualized and authentic approach, with an emphasis on exposure to native speakers and the use of visual and audiovisual materials. This approach is particularly effective for practical vocabulary acquisition and listening comprehension, although it can lack the same level of interactivity and immediate feedback when practicing pronunciation. The choice between the two applications should be guided by the specific needs of the students, and both can be used in a complementary way for more comprehensive and balanced learning.

FINAL CONSIDERATIONS

The aim of this work was to highlight some aspects of language and learning through the use of technological resources, with a particular focus on the importance of integrating the four language skills (listening, speaking, reading, writing) in order to develop communicative language skills. To achieve this goal, we carried out a detailed comparison of two popular mobile apps for teaching English as an additional language: Duolingo and Memrise.

To meet the proposed objective, we analyzed the usability of the apps, the quality and relevance of the pedagogical content, the ability to personalize it to meet the individual needs of the students, and the interactive features offered, such as immediate feedback and practical activities. In addition, specific aspects of communicative competence were assessed, such as vocabulary, pronunciation and grammar, providing a comprehensive overview of the pedagogical approaches of each app.

Duolingo stood out for its effective use of gamification and spaced repetition, making it a valuable tool for memorizing vocabulary and grammatical structures. Its user-friendly interface and voice recognition system for immediate feedback on pronunciation are features that contribute significantly to student engagement and error correction. Duolingo's structured approach, focused on translation and repetitive practice, is effective for internalizing grammar rules, as pointed out by Nation (2001, p. 78) and Ur (2012, p. 136).

On the other hand, Memrise stood out for its communicative and contextualized approach, using videos of native speakers and visual memorization techniques that provide a more authentic and practical learning experience. The emphasis on exposure to real contexts

and the use of authentic materials make Memrise a powerful tool for vocabulary acquisition and listening comprehension, as discussed by Thornbury (2012, p. 58) and Ellis (2006, p. 85). However, Memrise lacks a feedback system as interactive as Duolingo's for pronunciation practice.

When considering its effectiveness in developing the learner's communicative language skills, Memrise is the most suitable application. Its contextualized and authentic approach offers a rich exposure to real language use, which is crucial for the practical and meaningful learning of communicative skills. The ability to bring learning closer to real-life communication situations makes Memrise a robust tool for those seeking to develop holistic and functional communicative competence in English.

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