UNIVERSIDAD BOLIVARIANA DEL ECUADOR

Research Work

UNIVERSIDAD BOLIVARIANA DEL ECUADOR

REPÚBLICA DE ECUADOR

RESEARCH WORK PRESENTED TO OBTAIN THE ACADEMIC TITLE OF MASTER IN PEDAGOGY OF ENGLISH AS A FOREIGN LANGUAGE

TITLE

"The implementation of M-learning to increase English vocabulary in A1 English level students"

AUTHORS:

Loor Ostaiza Leidy Angelica

TUTOR:

MSc. Johnny Campoverde López

ECUADOR

2025

AVAL DEL TUTOR DE LA TESIS

AVAL DEL TUTOR DE LA TESIS

Fecha

Siendo designado como tutor del programa de maestría Pedagogía del Inglés como Lengua Extranjera de la Universidad Bolivariana del Ecuador (UBE) se avala el trabajo titulado "The implementation of M-learning to increase English vocabulary in A1 English level students" que ha sido elaborado por Leidy Angelica Loor Ostaiza bajo mi tutoría, y que reúne los requisitos para ser defendido ante el tribunal que se designe a tal efecto.

Firma: _____

Msc. Jonny Campoverde López

DEDICATION

To God, because He is the cornerstone of my projects.

To my parents and brother, for their unconditional love, constant support, and for being my source of perseverance. Without their sacrifice, understanding, and support, this achievement would not have been possible.

I owe my strength and vision to God and to you for achieving my dreams.

ACKNOWLEDGEMENTS

I thank God for allowing all plans in His will to come to fruition.

I thank my family. My parents and my brother, for their support, which was instrumental in achieving this goal.

I thank my thesis advisor, Johnny Campoverde López, for his guidance and dedication throughout this entire process.

I also thank the professors and teachers at the Bolivarian University of Ecuador for providing me with the knowledge and tools necessary to get here.

Thank you all for being part of this achievement and for accompanying me on this journey.

ABSTRACT

The research project "Implementing M-learning to increase English vocabulary in A1-level learners using the Duolingo mobile app" studies how mobile learning (M-learning) affects vocabulary development in A1-level English learners. Mobile apps represent essential educational tools for language teaching, as they benefit educational institutions in low-resource settings due to the rapid advancement of technology in education. This study aims to determine the functioning of Duolingo as a mobile learning method for vocabulary acquisition in students, to strengthen the digital learning literature, and to develop advanced language teaching practices. Students participated in Duolingo vocabulary education for four weeks during the research. The study used vocabulary pre-and post-tests, along with qualitative feedback from students and teachers, to assess vocabulary growth, motivation levels, and usability. Students achieved improved vocabulary retention and use thanks to Duolingo's gamification features, which maintained their interest in language education. Mobile learning provided students with an adaptable instructional method that allowed them to learn vocabulary in a way that expanded their classroom vocabulary. Research findings demonstrate that mobile learning offers beneficial results over traditional teaching methods, allowing students to develop independence, interact better, and retain vocabulary more efficiently through apps like Duolingo. Based on the research findings, schools should adopt mobile learning platforms as complementary educational tools. Furthermore, ongoing studies on vocabulary retention through mobile apps should be conducted. Teachers need training on the effectiveness of educational technology, as well as on strategies for providing digital resources to struggling students.

Keywords: Mobile learning, vocabulary acquisition, A1 level students, Duolingo, English learning, gamification, educational technology, digital learning, language teaching.

RESUMEN

El proyecto de investigación "Implementación de m-learning para aumentar el vocabulario de inglés en estudiantes de nivel A1 mediante la aplicación móvil de Duolingo" estudia cómo el aprendizaje móvil (m-learning) afecta el desarrollo de vocabulario en estudiantes de inglés de nivel A1. Las aplicaciones móviles representan herramientas educativas esenciales para la enseñanza de idiomas, ya que benefician a las instituciones educativas en entornos de bajos recursos gracias al rápido avance de la tecnología en la educación. Este estudio busca determinar el funcionamiento de Duolingo como método de aprendizaje móvil para la adquisición de vocabulario en estudiantes, fortalecer la literatura de aprendizaje digital y desarrollar prácticas avanzadas de enseñanza de idiomas. Los estudiantes participaron en la educación de vocabulario de Duolingo durante cuatro semanas durante la investigación. El estudio utilizó pruebas previas y posteriores de vocabulario, junto con retroalimentación cualitativa de estudiantes y docentes, para evaluar el desarrollo del vocabulario, los niveles de motivación y la usabilidad. Los estudiantes lograron una mejor retención y uso del vocabulario gracias a las funciones de gamificación de Duolingo, lo que mantuvo su interés en la enseñanza de idiomas. El aprendizaje móvil proporcionó a los estudiantes un método de instrucción adaptable que les permitió aprender vocabulario de una manera que amplió su vocabulario en el aula. Los resultados de la investigación demuestran que el aprendizaje móvil ofrece resultados beneficiosos en comparación con los métodos de enseñanza tradicionales, permitiendo a los estudiantes desarrollar su independencia, interactuar mejor y retener vocabulario de forma más eficiente mediante aplicaciones como Duolingo. Con base en los resultados de la investigación, las escuelas deberían adoptar plataformas de aprendizaje móvil como herramientas educativas complementarias. Además, se deben realizar estudios sobre la retención de vocabulario mediante aplicaciones móviles. El profesorado necesita formación sobre la eficacia de la tecnología educativa, así como sobre estrategias para proporcionar recursos digitales a los estudiantes con dificultades.

Palabras clave: Aprendizaje móvil, adquisición de vocabulario, estudiantes de nivel A1, Duolingo, aprendizaje de inglés, gamificación, tecnología educativa, aprendizaje digital, enseñanza de idiomas.

TABLE OF CONTENTS

INDEX OF TABLES

INDEX OF FIGURES

INDEX OF ANNEX

INTRODUCTION

Educational practices in language learning are undergoing major modifications due to the rapid growth of mobile technology. This study focuses on the implementation of M-learning for English vocabulary growth in A1-level students because the digital age requires the adaptability of modern teaching methods. Standard language teaching methods fail to offer flexibility and interactivity capabilities that meet the needs of young learners. Traditional mobile learning methods introduce adaptive practices that allow for personalized education that goes beyond the normal boundaries of the classroom.

Mobile technologies strengthen language learning by providing students with learning opportunities tailored to their needs as well as automated feedback systems and improved self-direction in education (Criollo-C, 2021). This study gains significance because it solves vocabulary acquisition challenges that form the essence of language competence while adopting modern technology-driven instructional strategies that adapt to the digital device usage habits of modern learners.

This research makes practical and theoretical advances. This research expands the theoretical scope of mobile-assisted language learning (MALL) by demonstrating effective methods for implementing mobile learning for the vocabulary education of beginners. This study investigates supporting pedagogical frameworks for mobile learning and demonstrates methods for optimizing vocabulary learning at the A1 level. Through research, educators will gain practical educational methods, including Duolingo mobile apps, as well as educator platforms and online forums and digital learning materials to incorporate into their classrooms. Mobile learning encourages learners to be more motivated and engaged (Asio, 2021), while these factors support the maintenance of language skills and the advancement of proficiency.

The primary beneficiaries of this research are A1-level English learners, who will gain access to more engaging, flexible, and effective vocabulary learning opportunities. Teachers will also benefit, as the study will equip them with innovative methods to improve their teaching practices and

better support diverse learning needs. Furthermore, educational institutions can leverage the findings to improve curriculum design, incorporating mobile technologies to promote more effective language learning environments. Policy makers and curriculum developers may also find the research valuable in shaping future educational policies that integrate technology into language education.

In terms of feasibility, the research is supported by the wide availability of mobile devices and internet connectivity, which have become increasingly accessible in both urban and rural educational settings. Many schools already use digital tools as part of their curriculum, and free or low-cost apps like Duolingo make it cost-effective to implement mobile learning strategies. Furthermore, educator platforms like Google Classroom and Edmodo, along with discussion forums and online resources like Quizlet and Memrise, provide readily available infrastructure to support this initiative. As Asio (2021) notes, the ubiquity of mobile technologies makes mobile learning a practical and scalable solution to improve language education globally.

Problem Statement

The problem statement of the current project is that in today's rapidly evolving educational landscape, traditional methods of teaching English vocabulary often fail to meet the diverse learning needs and preferences of A1-level students. Conventional classroom instruction tends to rely heavily on rote memorization, repetitive drills, and textbook-centered activities, which can lead to disengagement and limited vocabulary retention. As language learning becomes more dynamic and student-centered, the need for innovative approaches that promote active participation, motivation, and autonomy has become increasingly apparent. However, many educational institutions continue to face challenges in effectively integrating technology into language instruction, leaving a gap in developing essential vocabulary skills for beginner-level students.

Mobile learning (M-learning) has emerged as a promising solution to address these challenges by offering flexible, interactive, and personalized learning experiences. Through the use of mobile applications, educator platforms, online discussion forums, and digital resources, M-

learning provides opportunities for students to practice vocabulary in meaningful contexts anytime, anywhere. Despite its potential, the implementation of M-learning in vocabulary instruction remains unexplored, particularly for A1 level English learners. There are no comprehensive studies on the impact of mobile learning tools on vocabulary acquisition, the specific strategies that enhance their effectiveness, and the factors that influence students' interaction with these technologies.

The absence of evidence-based practices in integrating mobile learning raises concerns about its effectiveness in improving vocabulary outcomes. Teachers often lack guidance on the selection and use of appropriate mobile tools, while students may not make the most of available resources due to limited instructional support. This research seeks to address these gaps by analyzing the effectiveness of mobile learning in increasing English vocabulary among A1-level learners. By identifying best practices and evaluating the impact of different mobile learning strategies, the study aims to provide insights that can inform teaching methodologies, improve vocabulary teaching, and ultimately improve language proficiency for beginner-level learners.

Precision of the topic

The research is framed within the pedagogical, didactic, and educational management framework of the Bolivarian University of Ecuador through its pedagogical innovation subline. The academic areas of pedagogy didactics and educational management find support through this study that analyzes the implementation of M-learning to improve English vocabulary skills in A1-level students. The research evaluates the development of advanced language teaching strategies while studying mobile-assisted language learning (MALL) because it shows potential as an educational model. The research integrates M-learning to support three main educational objectives that include better educational practice better instructional methods and digital pedagogical advances in English language teaching.

Accuracy of theme

The study of the use of mobile learning (M-learning) to improve English vocabulary acquisition in A1-level learners.

General objective

The main objective of this study is to implement mobile learning to increase English vocabulary in A1-level learners using the Duolingo mobile app for four weeks. The study demonstrates the effectiveness of mobile learning on English vocabulary. By carrying out the research, the work aims to contribute to the existing understanding of the area and provide valuable information to researchers, educational program developers, and language teachers who wish to foster effective teaching methods and raise the language proficiency levels of A1-level learners.

Hypothesis

The hypothesis proposed is the implementation of M-learning significantly increases the English vocabulary acquisition of A1 English-level students compared to traditional learning methods. With this general objective To analyze the effectiveness of M-learning in increasing English vocabulary in A1 English-level students, and the specific objectives first To identify the theoretical literature related to M-learning and its role in vocabulary acquisition for A1 English-level students, second To describe the impact of M-learning tools, such as mobile applications, educator platforms, online discussion forums, and online learning resources, on vocabulary development, third To determine the contribution of M-learning strategies in enhancing English vocabulary acquisition in A1 English-level students.

Declaration of the variables

As **an independent variable** I have the application of M-Learning in the acquisition of vocabulary, which, as mentioned before, M-learning is a methodology that mainly makes use of mobile devices. Considering that we are in the technological age, almost everyone has access to mobile devices. Mobile devices in the educational area can have negative repercussions on the learning process because students bring devices to class and cause distractions, as well as positive repercussions that must be taken advantage of by teachers in teaching English.

"Functionality of Mobile Learning The student who wants to make use of mobile learning has to register and get a recommendation to use it via web service. Students can also download mobile apps which will be installed on the mobile phone through the GPRS and WIFI connectivity. The students can read the documents, watch video tutorials, listen to lectures or seminars, and finally they can take up self-assessment. They will be given results and analysis so that they can evaluate their strengths & weaknesses on their own. The mobile system helps to learn while you roam and also education for all at any time anywhere globally. Professionals can also share their valid tutorials into the cloud for development of the education community" (Blackledge, 2015)

As also mentioned, by Sanchez (2018), technological tools not only transmit information but can also be a fundamental pillar in the construction and acquisition of cognitive skills. For this reason, combining technology with education is a strategic plan with positive results.

The dependent variable is vocabulary. Vocabulary refers to the collection of words that a person knows and understands in a particular language. It encompasses all the words, phrases, and expressions that an individual can use and comprehend when speaking, listening, reading, or writing (Journal, 2023).

Also, Ogu (2019), developing the vocabulary base is crucial if the student has to improve on their communicative competence. In his speech and writing, he has to be armed with many words and their alternatives if his work will not appear insipid and tasteless. As in eating, well-spiced passages are the readers' delight. It can be said that vocabulary is the structural basis for acquiring a new language because before knowing grammatical structures or verb tenses, having the knowledge and management of a sufficient list of words.

Including M-learning in the teaching-learning process generates a great diversity of materials and resources in order to benefit students in their vocabulary-learning processes.

It is essential to cite some experts to conceptualize necessary and basic terms for this investigative work.

The teaching-learning process, or the education process, has been defined as a systematic, sequential, planned course of action on the part of both the teacher and learner to achieve the outcomes of teaching and learning (University of Maryland, 2023).

The research tools for this study will consist of both **quantitative and qualitative** data collection tools for the implementation of M-learning to increase English vocabulary in A1 English-level students.

Initial and final assessments will analyze how vocabulary levels vary between students before and after the intervention; a vocabulary test corresponding to level A1 will be carried out. This assessment will include statements to assess vocabulary as well as accuracy and coherence.

A structured form will be used to obtain quantitative data on students' perceptions of M-learning and its influence on the growth of English vocabulary. The survey may contain Likert scale questions and multiple-choice questions.

Also, Classroom observations will be carried out to analyze students' participation, engagement, and interaction while using M-learning. This information will provide qualitative data on students' experiences and behaviors in the educational environment.

Research tools will be created based on already validated instruments, adapting them to the specific circumstances and objectives of the study. The fusion of quantitative and qualitative methods will facilitate a rigorous and triangulated analysis of the data obtained, allowing a deeper understanding of how M-learning influences the increase in English vocabulary.

The beneficiaries are in a rural Chone Canton of Manabí province at “Bocana del Búa” Educational Unit. The class is made up of twenty adolescent students. They are in the first year of Bachillerato They are students who have recently been exposed to the challenge of knowing and subsequently mastering English as a foreign language, considering that in general basic education, the students were at the pre-A1 English level, for that reason now the level of English they are working on according to CEFR is A1

The first-year high school students of the Bocana del Búa Educational Unit are at level A1 according to the CERF. With the background presented in basic general education and knowing firsthand how these students learn English, it can be said that their strength is the ability to listen, speak and also understand abstractly the basic grammatical structures. Still, in the development and use of the English language as a foreign language they need to strengthen the bank of words they know or vocabulary considering that Vocabulary is all about words the words in a language or a special set of words that you are trying to learn, (Vocabulary, 2019), so that their skills are strengthened, they can communicate fluently and confidently and thus improve their current level of English and later ascend to the next higher level.

This research provides useful recommendations for educators, policymakers, and curriculum designers alike. The research presents proven mobile learning tactics applicable to English language learning that deliver improved vocabulary gains. Educators should implement mobile applications that complement traditional classroom methods to make instruction more interesting for students. The research results provide evidence for developing specifically designed educational applications that meet the vocabulary requirements of A1 students, thereby creating optimized learning environments.

Vocabulary development is highlighted as an essential criterion for the development of language proficiency among beginners at the A1 level. Students gain confidence in real-life communication and develop all essential literacy skills through mastery of vocabulary at an advanced level. The value of the research arises from demonstrating that mobile learning methods enable vocabulary expansion by combining interactive educational content with personalized learning journeys and instant assessment resulting in increased language effectiveness.

Digital technology during this current information age creates a greater connection between students and mobile devices. Educational integration now becomes possible because students are connected to mobile technology daily. The study addresses a societal requirement because societies need flexible technology-based educational solutions that adapt to different learning environments

and styles. M-learning serves as an essential tool that fills the gaps in educational resources to establish equal learning opportunities among students in areas with inadequate classroom resources.

Brief description of the content of the chapters that make up the degree report

Now you can appreciate a Brief description of the content of the chapters that make up the thesis report.

Chapter I: Literature Review. This chapter is dedicated to examining the existing literature on studies and research previously conducted in various contexts worldwide and their results on M-learning. In this section, different aspects will be considered to identify recommendations for its use in language learning environments. Regarding M-learning as a pedagogical strategy, various hypotheses about its origins and evolution will be explored in depth, which could offer a theoretical framework for the analysis. This chapter will also include information about previous approaches that led to the development of M-learning and the researchers involved in the creation of contemporary strategies. An essential element of this approach is to give students relevant tasks that align with their needs and goals in expanding their English vocabulary while acquiring a foreign language.

Chapter II: Research Methodology. This chapter examines the online study, the set, the population, the sampling process, the data collection methods, and the tools used to conduct the project research. The matrix of variables will also be addressed, which explains in detail the dimensions and indicators evaluated through the M-learning-based activities. This section covers the diagnostic phase, the tools, the extent of the study, the methodological framework, and the rationale for the methodology used.

Chapter III: Data Analysis and Results. This part presents the analysis of the data collection, and the results derived from the research study. Graphs, tables, and charts will be used to illustrate quantitative data, as well as the statistics from the pretest, posttest, and surveys. In addition, the percentage of progress of the students will be included both during the intervention and after it to

consolidate all the data. Finally, the researcher will mention some limitations that the study showed during the implementation, the results, and the research process.

CHAPTER 1: THEORETICAL FRAMEWORK

There are several research that have been investigated, in the following section, there are several research related to the current project.

Aguaiza (2021), the research project "Mobile-assisted language learning (mall) for vocabulary improvement" aimed to enhance English vocabulary in students from the A1 English Level at Universidad Técnica de Cotopaxi- Language Department. The study involved 100 students, with 50 in the control group and 50 in the experimental group. The study used a quali-quantitive method and a post-test to evaluate proficiency. The results showed that the Mobile-Assisted Language Learning strategy is effective in acquiring foreign language vocabulary proficiency.

Tenecota (2022), the research “M-Learning (Kahoot App) and vocabulary” examined the impact of the Kahoot application on vocabulary learning in 5th-grade students at "Unidad Educativa La Granja." A quantitative approach was used, including pre and post-tests, surveys, and interventions. Data from the Cambridge standardized test was analyzed to diagnose students' vocabulary levels. Results showed a general average of 6.93 out of 10 points in the pre-test, indicating a lack of vocabulary in English. The intervention activities, including videos and images, helped strengthen these weaknesses. Students reported improved vocabulary recognition and retention.

Rodriguez (2023) made the research: “Comparison of Learning Content Representations to Improve L2 Vocabulary Acquisition Using m-learning”. This study explores the use of Learning Content Representation (LCR) types in mobile devices for vocabulary learning. Two LCR types were tested: SRL (self-regulated learning strategy) and NSRL (non-self-regulated learning strategy). Results show a relationship between LCR types and word recall, with SRL demonstrating better academic performance. The study suggests LCR-SRL types should be used in m-learning for L2 vocabulary acquisition. Future research should explore their integration and effects.

Monje (2022) in his project: “M-learning (Duolingo app) and the listening skills. This study investigates the use of Duolingo in improving listening skills in ninth-year students at Unidad

Educativa "Las Americas."" The research involved 28 students and used standardized tests A1 Movers (YLE) to evaluate their listening levels. Six lessons were applied to integrate Duolingo with listening purposes, and students used the app for 15 minutes daily for three weeks. The results showed that Duolingo improved students' listening skills and made the teaching-learning process easier and more enjoyable.

Lei (2022) in the study: "The impact of mobile-assisted language learning on English as a foreign language learners' vocabulary learning attitudes and self-regulatory capacity". This study examines the impact of mobile-assisted language learning (MALL) on 139 English as a Foreign Language (EFL) learners' vocabulary learning attitudes and self-regulatory capacity over a year. The study used latent change score models and latent growth curve modeling to analyze data. Results showed an increase in vocabulary learning attitudes and self-regulatory capacity during the 1-year MALL program, with positive correlations between changes in both variables.

1.1 Independent Variable

1.1.1 Implementation of M-learning

Mobile learning is an educational method known as M-learning, which uses mobile devices such as smartphones, tablets, and laptops to enable anytime, anywhere learning assistance. This educational technique uses features of mobile technology such as mobility, connectivity, and interactivity to create dynamic learning environments that are student-centered. The definition of M-learning according to Qashou (2021) describes it as learning that takes place in various contexts by combining social and content interactions with personal mobile technology devices. This approach allows students to access educational resources while engaging in interactive activities along with peer collaboration, resulting in continuous learning outside of standard classroom environments.

M-learning allows students to access educational content without time or location restrictions in the concept known as ubiquitous learning. Al-Emran et al. (2021) explain that M-learning allows students to acquire knowledge at the precise time when it is most beneficial to their needs. Language

learners benefit from M-learning because it allows them to experience new vocabulary and practice their skills through real-world situations.

Mobile apps use adaptive technologies that personalize educational content according to individual learners' needs and their current learning progress. The use of games, spaced repetition, and immediate feedback in Duolingo with Quizlet and Memrise helps users acquire vocabulary more effectively (Nikolayev, 2021). The platform offers engaging features that support learning efficiency for A1-level English learners because they need constant repetition to memorize new vocabulary.

The use of mobile learning supports different learning styles through multimodal integration where text, audio, and images are combined as well as interactive learning objects. Multimedia resources used in mobile learning environments according to Criollo-C et al. (2021) lead to better language comprehension with improved information retention. Vocabulary development capabilities through mobile learning systems are essential because students hear pronunciations while viewing visual representations during contextual exercises that enhance their understanding of words.

In conclusion, mobile learning represents a transformative approach in modern education, offering innovative ways to support language learning. Its flexibility, adaptability, and interactive nature make it an effective tool for increasing English vocabulary among A1-level students, fostering both autonomy and motivation in the learning process.

1.1.2 Learning Process

Mobile learning is characterized by dynamic, learner-centered learning through mobile technologies that create flexible interactive education while offering individualized educational experiences. Through mobile learning, students can study beyond the walls of traditional classrooms as it provides a continuous education experience across geographic locations and allows for anytime, anywhere learning. Constructivist learning theories serve as the basis for this process, where active participation in self-directed learning and knowledge development occurs through real-world experiences (Sasan, 2022).

The mobile learning process has flexibility as its main feature. Students can retrieve educational content from mobile applications online platforms and multimedia resources according to their schedule. Mobile learning enables students to study “just in time” by providing them with knowledge at the time they need it (Naseem, 2022). The autonomy of online learning increases when students control the order, speed, and area of study through which they learn because this allows for greater motivation and engagement, particularly in foreign language education.

The fundamental benefit of mobile learning arises from its innovative support methods to offer personalized learning journey scenarios. Learning platforms that exist on mobile devices employ adaptive technology to deliver personalized educational content that fits students’ requirements as well as learning preferences and academic development. The language apps Quizlet and Memrise implement spaced repetition systems along with game mechanics that increase effective vocabulary mastery (Raimjonova, 2024). The system offers personalized education to A1-level English learners through focused exercises that help them develop vocabulary along with retention skills.

The learning method allows students to actively progress in their studies because it provides interactive learning tools such as quizzes and flashcards along with simulations and collaborative projects. Students using these activities must apply their knowledge immediately to develop critical thinking and problem-solving skills. Students can carry out “situated learning” using mobile technologies as Li et al. (2022) identify this capability of mobile technologies. Language learners need to apply their vocabulary knowledge in natural situations by using language software when traveling, shopping, and interacting with friends online.

The social facet of learning through mobile devices has a significant impact on education. Several mobile learning platforms include options for collaboration, such as online discussions, peer feedback, and tools for communicating in real time. These features favor the social constructivist approach, where learning occurs through interaction and sharing knowledge with others (Marougkas, 2023). This type of collaborative environment enhances language acquisition by offering possibilities for genuine communication, peer support, and cultural exchange.

In summary, mobile learning is a complex process that combines flexibility, personalization, participatory learning, and social interaction. These features create an engaging and effective educational space, especially for language learners who want to enrich their vocabulary. Mobile learning not only contributes to intellectual development but also promotes independence and motivation essential for continued learning.

1.1.3 Autonomy in Learning

M-learning stands out for its ability to give students independent control of their educational development. Educational control is transferred to students when they interact with m-learning systems, as mobile devices undo traditional teacher-led learning methods in classrooms. Little (2022) defines autonomy in language learning as the independence of students in their educational process. Mobile devices promote unrestricted educational access through educational resources and language applications and interactive content. A1-level English learners who wish to study vocabulary can use mobile resources at their preferred pace and work through difficult material and additional learning resources outside of strict classroom attendance requirements. Through this independent method, students develop responsibility toward education, which establishes lasting learning practices.

1.1.4 Individual progress

Through personalized learning experiences, M-learning fosters each student's advancement according to their individual abilities, learning needs, and speed. Adaptive learning algorithms in mobile apps modify their level of difficulty based on the results obtained by the students. Duolingo and Babbel represent two language learning apps that provide real-time feedback, record progress, and offer personalized activities to strengthen vocabulary skills (Kessler, 2023). The individualized learning method offers extraordinary advantages to A1-level English learners as it allows them to focus on the vocabulary sections that need attention. Dashboards, badges, and analytical data allow students to track their progress so they can set goals and determine areas of improvement for further

development. Through their self-managed learning activities, students progress at their pace toward higher performance.

1.1.5 Motivation and engagement

The effectiveness of mobile learning depends on student engagement, as motivation is a fundamental component of success in language learning. Students stay engaged in their studies in an engaging educational environment thanks to gamification features that use points and badges along with leaderboards and reward systems (Portela, 2022). Interactive activities such as quizzes, flashcards, and real-time language games stimulate curiosity and make learning enjoyable. In addition, the multimedia capabilities of mobile devices, combining text, audio, images, and videos, supply different learning styles, making vocabulary learning more dynamic and memorable (Kotiash, 2022). For A1-level English learners, this engaging environment reduces the anxiety often associated with language learning and fosters a positive attitude toward acquiring new vocabulary. The sense of accomplishment from completing levels or winning prizes further increases intrinsic motivation, leading to sustained learning efforts.

1.1.6 Technology connection

Implementing mobile learning strategies to develop vocabulary skills in A1-level English learners requires reliable technological infrastructure systems. Technological connection represents three vital elements, including internet accessibility platform accessibility, and device compatibility that establish an efficient mobile learning environment (Al-Rahmi, 2022). Technological components enable seamless access to educational content that supports continuous learning situations inside and outside the classroom environment.

1.1.6.1 Internet Accessibility

Internet accessibility is presented as an essential condition necessary for the successful implementation of a mobile learning strategy. Students who have reliable internet access can obtain online resources while downloading vocabulary apps and engaging in language activities, as well as

receiving immediate feedback. Continuous internet access establishes flexible instructional environments that students can use to study content anytime and from anywhere (Asio, 2021). Regular use of online platforms by A1-level English learners ensures their ability to practice vocabulary, which strengthens their memory and ability to apply this knowledge. Internet availability becomes a challenge because some underserved regions or areas lack equal access to this resource. Some mobile learning apps address this issue by giving students access to offline content that they can download for offline study.

1.1.6.2 Platform accessibly

The accessibility of language acquisition tools depends on the ability of students and teachers to interact with mobile learning apps and websites through their platforms. Mobile learning platforms should provide interfaces that are user-friendly and accessible to users whose digital proficiency level ranges from basic to advanced. Researchers suggest that accessible interfaces enhance learning environments through their ability to reduce technological barriers while boosting student engagement (Kamble, 2021). Interactive vocabulary exercises from Duolingo, Quizlet, and Memrise serve A1 level English learners through user-friendly platforms for easy visual learning. The combination of clear navigation tools with multilingual features along with adaptive learning paths across platforms enhances vocabulary education by serving learners of different abilities effectively and enjoyably.

1.1.6.3 Device compatibility

Device interoperability is a key factor in the implementation of mobile learning, as it ensures that applications and educational materials work effectively across a variety of devices, including smartphones, tablets, and laptops. The compatibility of mobile learning tools with multiple operating systems, such as Android, iOS, and Windows, expands access for students, regardless of the devices they use. Nivethitha et al. (2024) mention that cross-device compatibility improves flexibility in learning, allowing students to switch between devices at their convenience. For students who are at an A1 level of English, this means they can study vocabulary on their smartphones while on the

move, continue with exercises on a tablet at home, or even access online versions on a laptop. In addition, responsive design in educational apps ensures that content is displayed correctly in different screen dimensions, preserving the quality of interactive activities, tests, and multimedia resources that are key to vocabulary enrichment.

1.1.7 Mobile device

The success of vocabulary teaching through mobile learning for A1-level English learners depends on the mobile devices selected for educational use. The wide range of devices, including smartphones, tablets, augmented reality e-readers, and computers, act as fundamental tools for accessing interactive language applications, in addition to multimedia content and collaborative platforms. Each device provides students with different capabilities that create adaptable and engaging learning environments that fit the individual needs of students in different educational circumstances (Rahmani, 2022).

1.1.7.1 Smartphone

Mobile phones are the primary electronic devices for mobile learning because they provide portability along with cost-effectiveness and multiple uses. A1 level English learners can practice vocabulary through language learning applications such as Duolingo, Quizlet, and Memrise through their smartphones because these applications allow for anytime, anywhere study (Jomaa, 2025). Smartphones provide users with multimedia capabilities through audio content and video playback and interactive quiz features that help students develop their vocabulary skills by listening, reading, and speaking to the device. The connectivity tools of these devices provide instant peer feedback along with gaming elements that create a higher level of student response and interest in studying (Muallim, 2024). Smartphones serve as a convenient medium for language acquisition because they exist in most learning spaces, from formal institutions to everyday situations.

1.1.7.2 Tablets

The enlarged screen available on tablets provides an enhanced user interface that benefits educational activities that demand screen space along with visual components. Educational contexts choose tablets over other devices because these mobile devices provide both portable use and computer-level functionality (Bjørgen, 2022). A1-level English learners use tablets to learn vocabulary more efficiently by playing interactive storybooks and language-based games and using digital flashcards that work better with larger screens. Touchscreen interaction on tablets uses kinesthetic techniques to help students interact with their screen to drag and drop objects, which improves both cognitive focus and memory recall. In educational settings, companies use tablets to group students and facilitate collective learning activities.

1.1.7.3 E-readers

The primary purpose of E-readers such as Kindle revolves around digital text-reading activities that create effective opportunities for vocabulary development through extensive text consumption. E-readers provide learners with access to digital reading materials through connected dictionaries as well as e-books and articles, but they do not have an interactive capability equivalent to that of smartphones or tablets. Learners can benefit from this functionality because it allows them to encounter unfamiliar words during reading sessions, which enhances vocabulary learning in realistic environments (Karakoç Öztürk, 2021). E-readers combine the feature of built-in vocabulary review tools and annotation capabilities that help users track new terms and perform repeated reviews to develop long-term memory retention.

1.1.7.4 Augmented reality

Augmented reality (AR) is presented as an advanced approach in mobile learning that combines digital information with real-world environments to produce deep language education encounters. Mondly AR is among a class of AR applications that uses real-time virtual characters to help students learn vocabulary while exploring the physical world (Garzón, 2021). Through augmented reality, students make connections between vocabulary words and visual-spatial elements

to improve their understanding and better remember new terms. Students use their devices to point to objects while receiving vocabulary labels and practicing pronunciation through interactive tasks that approximate real-world situations. Active learning and motivational engagement find support through the immersive practice provided by the learning environment.

1.1.7.5 Computers

The digital learning system relies on computers in addition to mobile devices, as mobile learning emphasizes portable technology. The combination of desktop and laptop computers offers high-performance computer systems with large screen sizes and professional tools that allow for detailed language learning programs that include multimedia projects and virtual classroom applications, as well as elaborate vocabulary problem sets. Alshurideh et al. (2023) explain that integrating computers with mobile learning environments helps instructors create diverse instructional designs that unify desktop and mobile resources for well-rounded educational experiences. A1-level English learners find computers useful for tasks that require intensive reading, writing, and multimedia production because these devices extend the benefits that mobile devices provide for spontaneous learning.

1.1.8 Teletraining tolls

Digital platforms, along with applications called E-learning tools, create solutions that enable distance learning and teaching by combining communication technology features. The delivery of educational content combined with student interaction and language learning support occurs through mobile learning platforms known as M-learning (Mobile Learning) e-learning tools. These tools allow for both real-time and asynchronous learning, making them optimal for increasing English vocabulary acquisition among students (Maharjan, 2022).

Mobile devices serve as the central component of mobile learning through their creation of customizable learning environments that provide accessibility to all users. Combining E-learning tools with this approach allows teachers to distribute vocabulary instruction along with interactive content and assessment tasks through mobile devices including smartphones, tablets, and personal

computers. Mobile learning platforms or E-learning tools create learning-anywhere capabilities to support the continued growth of students' vocabulary (Akour, 2021).

Students can use video conferencing software along with learning management platforms and interactive language applications including Zoom, Microsoft Teams, Google Meet, Moodle, Edmodo, Duolingo, Quizlet, and Memrise. These platforms offer multimedia content sharing combined with live lessons as well as breakout rooms for group discussions and real-time feedback, which are vital for language learning. The tools provide dynamic vocabulary acquisition practice to students through voice-based activities supplemented with reading and writing tasks along with motivational gaming features (Rehbein, 2021).

The integration of e-learning systems with mobile learning strategies presents innovative, flexible, and successful approaches to increasing English vocabulary among A1-level learners. Mobile technologies enable these tools to establish interactive learning spaces that promote student engagement and individualized instruction along with sustained language progression.

1.1.8.1 Mobile application

Language learning through mobile apps offers students flexible access to practice developing their skills. A1 level English learners greatly benefit from Duolingo as a mobile app because it combines elements of entertainment and game mechanics within a platform designed to encourage continued language education. Students can learn vocabulary sections using Duolingo by answering multiple choice questions as well as sentence building and vocabulary unit association tasks. Spaced repetition algorithms within Duolingo help students review vocabulary at perfect times, leading to better vocabulary retention and long-lasting recall (Rouabhia, 2024). The platform teaches vocabulary through context because it displays words in sentences along with scenarios, making learning more effective for students. Students gain sufficient vocabulary and grammar skills at the A1 level through this language learning method.

Students can use the app at any time due to its accessibility to practice vocabulary, providing continuous learning opportunities. The app works to extend classroom learning through ongoing

practice that allows students to try out new concepts outside of standard classes (Tiara, 2021). Students can interact with Duolingo's social features, which allow them to compete against friends or world leaders, increasing motivation through competitive interaction and public recognition. The achievement experience promotes better learning outcomes through consistent academic engagement and continuous growth tracking (Amin, 2021).

1.1.8.2 Educator platform

The integration of mobile learning into educational settings relies on the use of educator-developed platforms such as Google Classroom, Edmodo, and Moodle. Educator platforms establish a virtual central space that allows teachers to share educational materials and distribute activities along with tracking student development. Through their integration with mobile apps such as Duolingo, educator platforms ensure a seamless learning experience that connects school and after-school educational settings (Setiadi, 2021). Through their access to these platforms, teachers can share additional vocabulary resources while also offering personalized feedback while tracking student achievement.

Educator platforms provide an environment for students to take tests and participate in collaborative surveys and exercises that review their learning on mobile apps. A teacher can use Google Classroom to upload vocabulary lists for students to apply words into original sentences that students can present in class or through discussion forums. Joint activities on educator platforms help students maintain vocabulary knowledge while promoting their active use of the new language in meaningful contexts essential to language learning (Rinaldi, 2022).

Mobile learning benefits from educator platforms because these tools allow educators to maintain high levels of flexibility in the classroom. Through cloud-based tools, students can handle educational materials at their learning pace while using multiple devices to overcome traditional class time constraints. Educator-developed platforms come with analytical tools that help instructors track student progress so they can modify their pedagogical methods appropriately. Effective use of

these digital platforms leads to improved student achievement based on research demonstrating both structure and flexibility (Singh, 2021).

1.1.8.3 Discussion Forum Online

Implementing discussion forums as an educational tool effectively incorporates communicative activities into mobile learning programs. Moodle, Schoology, and Edmodo serve as tools that provide students with a place to engage in discussions while practicing vocabulary and asking questions. Discussion forums serve as a tool for students to engage in planned discussions with their peers, helping them successfully implement new vocabulary in conversational contexts. Educational platforms allow for dual communication, allowing students to develop their vocabulary through written input and oral production through activities such as posting comments and sharing recorded audio and video.

Online discussion forums provide advantages that extend beyond vocabulary practice. Scientific evidence shows that guided online interactions with peers increase student motivation and language development (Bailey, 2021). Students through discussion forums learn to create basic sentences while asking and answering questions, which helps their vocabulary development over time. Students can find supplemental learning through these forums as they can discover, and correct mistakes made by classmates as well as support understanding through collaborative communication. The delay in most discussion forums allows students to evaluate their input to speak better and retain vocabulary more effectively.

1.1.8.4 Online learning resources

Current online resources provide students with multiple academic materials that aid vocabulary acquisition. Students can use learning platforms such as Quizlet, Memrise, and Anki for interactive flashcards along with spaced repetition features that serve various forms of learning based on personal interests. Students can use these digital resources to practice their vocabulary through isolated or contextual exercises that provide visual, auditory, and physical activities for better learning assimilation.

These learning resources provide specific benefits during mobile learning, as they give students time-sensitive access to educational options with multiple practice assessments in a variety of formats. Quizlet provides students with digital flashcards containing audio files with images and sentences suitable for improving their vocabulary recognition and retrieval skills. Students benefit from the custom-designed memory retention intervals provided by the spaced repetition algorithms in Anki platforms through their integration with verbalization approaches (Carpenter, 2022). In addition, online resources often include multimedia elements, such as videos, podcasts, and interactive exercises, that expose students to vocabulary in a variety of contexts. Research indicates that multimodal exposure to language can significantly improve vocabulary learning, especially for beginning learners (Le-Thi, 2022). As these resources are easily accessible via smartphones or tablets, they offer students the opportunity to practice and reinforce vocabulary whenever and wherever they want, providing a truly flexible learning experience.

1.2 Independent variable

1.2.1 English Vocabulary

English vocabulary refers to all the words and phrases through which people convey messages in this case using the English language. Vocabulary includes all elements related to the meanings and usage of words along with pronunciation and spelling. Vocabulary acquisition serves as a foundation for learning English as a foreign language (EFL) because it helps students master the skills of listening, speaking, reading, and writing according to Nation (Tlili, 2021).

Vocabulary instruction for EFL learners is divided into two categories receptive vocabulary and productive vocabulary. Students' receptive vocabulary refers to the words they can identify and understand when listening or reading within educational activities. Productive vocabulary refers to the words that students can actively use during their oral communication as well as written production (Li et al., 2022). Practicing vocabulary using various methods is essential because better comprehension along with accurate language production results from the combination of receptive and productive vocabulary development.

The instructional process for teaching vocabulary in EFL contexts should use specific techniques that generate student engagement through meaningful educational exercises. According to Butler et al. (2021), contextual learning techniques coupled with multimedia resources and mobile learning applications have been shown to improve vocabulary acquisition. The gamified platform GimKit provides students with interactive activities that promote both student engagement and retention of new vocabulary (Chang, 2025).

Language learning demands a strong English vocabulary, specifically for EFL contexts. The development of language proficiency relies heavily on vocabulary expansion, so educational professionals must adopt multiple novel approaches to help students increase their vocabulary.

1.2.2 Vocabulary expansion

Vocabulary expansion represents the systematic growth of words along with verbal expressions that a person understands for the purposes of effective communication. This active process is carried out consistently because it is essential for language learning, particularly among new language speakers. Vocabulary expansion requires students to know the definitions of new words and understand their situations, as well as to apply them correctly when speaking and writing (Sha, 2025).

The degree of vocabulary growth affects language acquisition, as its development improves both receptive comprehension and expressive skills. A student with a large vocabulary can explain his or her thoughts accurately and read or listen to written and spoken content with better understanding. Language proficiency is closely related to vocabulary size, which leads to better academic outcomes (Stoeckel, 2021). Vocabulary growth allows students to feel more accomplished when using the language, leading them to engage more frequently in language practice.

Material learners possess a larger vocabulary that enables them to solve problems and think critically because their expanded lexicon improves their ability to interpret information. Through vocabulary expansion, language learners can improve their understanding of expressions typical of a given culture as well as cultural references while processing language specific to contexts.

The learning process of vocabulary development occurs steadily as students gain new words progressively over time. The acquisition of new vocabulary occurs through activity-based exposure to language content, such as reading and listening to speech, practicing verbalization, and producing written text (Sarabia, 2023). Each exposure to a word develops the understanding of both its definition and correct usage, ultimately leading to improved memory retention of the word.

Vocabulary learning requires a specific context in which to take place. Learning occurs most effectively when students encounter words in meaningful situations. Students develop better memory retention by studying vocabulary through real-life situations or dialogue elements from a story (Zarfsaz, 2021).

The process of vocabulary expansion requires the development of passive and active knowledge acquisition. Reading and listening allow students to understand passive vocabulary that they then master, but receptive vocabulary remains distinct from active vocabulary, which enables students to use words confidently in speaking and writing. Success in learning demands maintaining harmony between receptive and active knowledge of words in the language.

Equipping students with multiple learning methods yields substantial benefits for their vocabulary development. Vocabulary acquisition becomes more effective using standard memorization methods electronic tools and mnemonic techniques. These learning strategies provide meaningful instruction through multiple engaging approaches that correspond to distinct learning styles (Zarfsaz, 2021).

The number of times someone encounters new words along with repeated encounters determines their successful memorization. Students who encounter words multiple times in various situations develop a stronger memory and understanding of those words. Exposure to new words in different contexts that are meaningful will strengthen both the meaning and retention of usage in the student's memory (Calderón, 2021).

Beyond word identification, vocabulary knowledge contains all the depths of meaning pertinent to each word. Deep understanding requires knowledge of the meaning of words along with

common relationships between words and opposite terms as well as word construction rules and different word forms. Vocabulary knowledge helps students use words accurately while adapting them appropriately to various spoken situations.

1.2.2.1 Diversity of lexical categories

The different categories of words that make up a language consist of nouns, verbs, and adjectives along with adverbs and pronouns, as well as conjunctions, prepositions, and interjections. Each group of words functions differently in building sentence structure as well as communication, thereby enhancing the potential of language use (Senaldi, 2022). A complete vocabulary consists of these lexical categories in various proportions, allowing learners to construct syntactically adequate sentences with meaningful content.

Most linguists consider nouns and verbs to be the fundamental building blocks of language because they anchor all information about things as well as concepts and their activities. Adjectives along with adverbs create detailed descriptions that allow for greater clarity in explanations. Both pronouns and conjunctions with prepositions work together to link ideas, resulting in coherent speech or writing. Interjections ensure informal communication through emotionally powerful expressions and speaking with immediate reactive thoughts (Kovbasko, 2021).

Language learners need a thorough understanding of lexical categories because it enables them to accept and compose intricate sentence structures. Language proficiency is developed through educational tools that enable users to formulate personalized ideas, offer accurate descriptions, and maintain interactive discourse. Teachers should implement educational activities that address various lexical categories to help students develop their vocabulary skills.

1.2.2.2 Linguistic expression

When people can express their ideas and emotional states along with their thoughts through linguistic communication, it is known as linguistic expression. Linguistic expressions exist in two forms of communication that use vocabulary along with grammatical structure as well as syntax

rules with stylistic elements to convey important messages. Linguistic expressions thrive according to how well people understand a language and think critically while understanding the cultural context, making it critical for both learning new languages and engaging in interpersonal communication (Mustaeva, 2022).

When expressing oneself through language, the fundamental principle remains both precision and clarity. Experienced communicators make a purposeful selection of language elements that present their core message directly and prevent ambiguity from entering their messages (Geline, 2024). People who wish to express themselves need both a broad vocabulary and knowledge about how words and phrases function in particular contexts. The skill produces learners capable of conveying complex ideas with greater confidence and conviction.

The essential component requires creative word selection in language use. Language expression provides individuals with the opportunity to manipulate language elements while trying out various sentence patterns with persuasive rhetorical devices that strengthen their communication. Through creative use of language, individuals enhance their personal self-expression and develop better interaction in academic settings, along with their professional life and social environment (Ergasheva, 2024). Training students through storytelling, along with poetry assignments and debate practice allows them to develop their creative language skills.

Cultural competence is established as a critical factor that influences the way people express themselves. Language strengthens its bond with culture and students who develop cultural awareness achieve better communication outcomes through their language skills. Language learners do not easily recognize cultural meanings embedded in idioms along with humorous language and figurative speech. Learning authentic language materials from movies and literature and conversational interactions with native speakers builds cultural understanding that enhances language expression skills (Siregar, 2022). The ability to express oneself through words is closely related to emotional intelligence. Human connections depend on the fundamental ability to express emotions appropriately and show emotional sensitivity when responding to the feelings of others. The practice of emotional expression benefits language learners most when they engage in role-

playing along with dialogue and reflective writing, as these activities guide them through the exploration of emotional language (Dryden, 2021).

Full mastery of linguistic expression encompasses more elements than standard language proficiency. The ability to communicate efficiently arises from maintaining clarity being creative and demonstrating cultural understanding along with emotional intelligence and skills. Effective language learners who develop these skills will improve their ability to communicate with purpose in several situations.

1.2.3 Connotation and denotation

English vocabulary learners must understand both connotation and denotation, as these fundamental terms enable effective application of vocabulary. Denotation refers to the literal dictionary definition of a word—its explicit, objective meaning. Denotation functions as the simple description of a word's meaning, even if emotive elements and cultural tradition are excluded. According to the dictionary definition, the word "snake" describes a scaly, legless reptile belonging to the genus Serpentes.

Connotations comprise all emotional, cultural, and associative meanings that exceed standard dictionary definitions of words (Maisarah, 2021). Words are given positive or negative connotations or remain neutral depending on the usage situation mentioned and how they are perceived by individuals or social groups.

Historical and literary references have shaped cultural associations about "snakes," such that the word now carries meanings of misdeeds as well as threats and disloyalty in various societies. Students who need to learn a language must understand both the denotative meaning and the connotative value to speak correctly, as the audience responds differently to words. To communicate effectively, people must choose their words carefully, as both the official definition, and denotation, and the added associations, and connotations, are important (Maisarah, 2021). Academic work and formal situations demand precise selection of the denotative meaning because any ambiguity can

lead to misunderstandings. Creative writing, along with advertising and people's way of speaking, often employs connotations strategically to evoke emotions or construct a persuasive speech.

Students learning a language must use materials in their native language, such as literature or media with native speakers, to better understand both direct and implied meanings. Students who study linguistic contexts develop better skills in detecting variations in word meanings along with the emotional values that words bring to various situations (Yasar Yuzlu, 2022). Studying synonyms along with idioms and figurative language through vocabulary exercises allows students to deal with both direct and suggested meanings within the English language.

1.2.3.1 Diversity of thematic areas

The diversity of vocabulary subject areas encompasses all the different topics that drive vocabulary development. The variety of subject areas helps students develop their language proficiency while teaching them expressions that fit different realistic situations. According to McDonald et al. (2023), students gain confidence in academic, professional, and social discussions when they receive exposure to multiple subject areas.

Combining topics from science, technology, art, politics, and environmental issues within a course helps students develop a contextualized vocabulary. The learning environments provide students with vocabulary definitions along with contextual applications of these terms. Environmental studies follow a distinct meaning of “sustainability” from how this term functions within business applications. This method encourages holistic learning as it allows students to develop flexible vocabulary skills that work in real-life scenarios (Ruggerio, 2021).

The use of subject diversity helps students think more reflectively while staying engaged. Exposing students to multiple learning domains encourages them to make conceptual links between ideas while analyzing complex information in different frameworks to develop meaningful applications of new vocabulary. The technique allows for increased retention of English along with intellectual development (Wu, 2021).

Learning from diverse subject areas develops cultural literacy so that students can achieve better communication outcomes in our globalized society. Language learners who master vocabulary about cultural traditions, historical events, and social practices develop the ability to understand different cultures. A student needs cultural competence to improve his or her skills when communicating with multicultural people (Akdere, 2021).

School educators can help students develop their vocabulary by using thematic teaching approaches, but using genuine language materials such as news reports, audio episodes, and video resources in addition to written work. By using this approach, students learn new words while continuing to interact with classroom content, as their study reflects personal interests and direct life experiences (Hestiana, 2022).

1.2.4 Uses of Vocabulary

Language learning and communication depend on a fundamental quality known as vocabulary. The primary function of vocabulary is to build blocks for expressing thoughts and emotions clearly and effectively. Having a broad vocabulary allows people to describe ideas specifically engage in advanced conversations and understand a variety of written content. Putri et al. (2022) indicate that language proficiency depends on vocabulary knowledge as it controls reading comprehension as well as listening and speaking skills and writing accuracy.

Reading comprehension relies heavily on vocabulary as one of its key functional uses. Using a broad vocabulary allows readers to decode texts easily while also achieving greater depth of understanding. Through contextual orientation, readers can understand unfamiliar words and correctly interpret words that require different meanings depending on the context. Zhang et al. (2022) demonstrates that reading success and vocabulary knowledge have a direct correlation as vocabulary knowledge expands the ability to both infer meaning and remember content.

Through writing, people can express their ideas clearly and accurately through the use of vocabulary. Writing requires a wide collection of words because authors need specific vocabulary choices combined with descriptive power to maintain fluency in their written works. The wide range

of words contributes to the enhancement of content along with strong persuasiveness (Seyoum, 2022).

When communicating through speaking and listening, people rely heavily on their vocabulary selection. Successful communication depends on people selecting appropriate words quickly while maintaining accuracy. A speaker gains clarity when expressing his or her thoughts to others through vocabulary that enables clear communication and avoids frequent misinterpretations. The central element for fluent speech is vocabulary, as Liu (2021) states, because it creates a smooth and assertive transmission of the message.

The power of vocabulary is essential for the achievement of academic and professional goals. Professional vocabulary serves as jargon in established fields because it provides precise language to handle sophisticated ideas. Mastery of this vocabulary facilitates better performance in academic assessments and professional interactions (Wulantari, 2023).

1.2.4.1 Active vocabulary

Active vocabulary indicates the group of words that people can easily remember when speaking and writing. A person's productive language abilities depend on these terms that enable effective and confident communication. Kazakova et al. (2022) explain that active vocabulary serves as a foundation for language fluency because students use it to speak frequently in daily conversations and academic writing.

Active vocabulary growth occurs primarily through continued word use and practice. Repetition of words in conversation combined with writing exercises and language tasks strengthens these words in our memory until they become highly accessible when needed. Waluyo et al. (2021) stress that meaningful repetition of vocabulary serves as a vital component in moving from passive to active use of words.

Students' active vocabulary becomes progressively advanced as they maintain exposure to new words. People build new words into their active vocabulary after encountering new experiences

combined with the acquisition of new knowledge. Through active language learning, students improve their ability to handle sophisticated messages while adapting their speech to different communication circumstances (Winaldo, 2022).

An individual's communication skills improve as their active vocabulary increases in size. A wider range of known words allows individuals to use different specific terms, resulting in greater linguistic diversity and less oral repetition. Creating effective oral and written communication requires a diverse vocabulary (2022).

Education benefits from active vocabulary development because it supports the growth of the student's language. Using vocabulary games along with discussions and written assignments helps teachers encourage students to actively use new vocabulary. Through this method, students develop stronger language skills, leading to greater confidence in English when interacting in real-life situations (Saleh, 2022).

1.2.4.2 Passive vocabulary

Passive vocabulary refers to words that a person easily understands when reading or listening to something, even if the person uses those words sparingly in speaking and writing. The measure/index reflects how well someone understands spoken and written language content, which includes both dialogue and instructional materials. Ansarin et al. (2021) state that passive vocabulary is larger than active vocabulary because passive words come from exposure rather than direct use.

Passive vocabulary learning occurs automatically during reading activities and when someone listens to speech and encounters different types of language input. Saidjonovna (2023) demonstrates that continued reading and listening practice results in substantial passive vocabulary growth because students encounter new words that help them understand and remember language.

Passive vocabulary is not actively spoken, but passive vocabulary is essential for language comprehension. Individuals with better passive vocabulary skills can understand elaborate written materials and complicated spoken instructions while also picking up secondary meanings in

everyday discussions. Academic success combined with critical thinking demands this understanding (Hursen, 2021).

Learning to change passive expressions into active ones demands deliberate practice during periods of use. Retention of new vocabulary improves when students use studied words during speaking and writing exercises to strengthen their memory of definitions and usage. According to Ansarin et al. (2021), students best activate their passive vocabulary through contextual learning approaches combined with repetition of exposure.

English learners should work to develop passive vocabulary to the same extent that they work on their active vocabulary. Teachers should help students develop passive language skills by creating opportunities with diverse linguistic resources in reading materials as well as multimedia content and authentic listening events. Vocabulary development becomes more effective as students encounter various types of content that allow them to improve their reading and speaking skills (Chen, 2021).

1.2.5 Difficulty levels

Acquiring appropriate vocabulary for learners with different proficiency levels is a crucial aspect of language learning. The level of difficulty in language learning is influenced by its impact on comprehension, retention, and fluency. Most vocabularies are categorized into basic and advanced levels, with each level requiring unique teaching techniques and resources (Hashimoto, 2021). Categorizing vocabulary difficulty allows educators to create customized lessons that meet the needs of students. A student's vocabulary is typically made up of words that are used more often in everyday speech, while advanced learners' vocabulary includes fewer common words and is often linked to more complex concepts or specializations.

1.2.5.1 Basic vocabulary

The foundation of a language is its basic vocabulary, so beginners must have a firm grasp of the words that are used in combination. Vocabulary comprises terms and expressions that learners

encounter in spoken and written communication. The 2001 report highlights that basic vocabulary is made up of words that learners are likely to use regularly in their everyday conversations and interactions. Common nouns, adjectives, and verbs are essential vocabulary that students use to handle common tasks such as greetings, shopping, and food delivery. Allen (2023) emphasizes the importance of establishing a strong foundation of basic vocabulary for students to develop confidence and fluency in a new language. Furthermore, students who possess significant grasping skills exhibit marked improvement in receptive and productive language attitudes (Munir, 2024).

Primary vocabulary instruction involves techniques that aid in word recognition and retention. The most employed methods include flashcards, word lists, and repetitive exposure. Teachers can use visual aids such as pictures or reality to provide context-based cues in the classroom, which can help students connect words to cooking (Fitria, 2023). Additionally, tasks such as organizing words, constructing sentences, and practicing basic dialogues can help students practice basic vocabulary in a context. Repetition is essential for retention, as students are often exposed to high-frequency words multiple times through various activities. High-frequency vocabulary improves students' comprehension of simple texts and their ability to participate in everyday conversations, setting the stage for more challenging language learning tasks (Robles-García, 2021).

1.2.5.2 Advanced vocabulary

As students progress in their language learning, they are exposed to more specialized and less common vocabulary. Advanced vocabulary encompasses words that are commonly used in academic, professional, or literary contexts. These words are commonly understood and require more advanced cognitive processing to be used effectively. Yudha et al. (2021) state that advanced vocabulary is not only more specialized but also tends to have multiple meanings depending on the context, making it more difficult for students to control. Words such as “theory,” “analysis,” and “hypothesis” are frequently used in academic settings, but may not be as prevalent in casual discussions (Fradkin, 2021). Students can understand intricate texts, and present sophisticated ideas, and discourse in professional or academic contexts using their advanced vocabulary.

Developing advanced vocabulary often requires explicit training due to the reduced likelihood that these words will be used in everyday language. To improve vocabulary acquisition, students should employ techniques such as directly teaching word meanings, using context-based reading, and encouraging the use of new words in speaking and writing. In addition, advanced vocabulary typically involves a deep understanding of word families, their origins, and associations (Sutrisna, 2022). This allows students to deduce the meanings of unfamiliar words within context, making it an essential skill for language learners. Students can deduce the meanings of words such as "bicycle" or "biannual" using the root word "bi-" which is two. As a result, growing sophisticated vocabulary involves not only improving word comprehension but also fostering critical thinking and vocabulary inference techniques.

Advanced vocabulary acquisition also highlights the need for both passive and active knowledge. Vocabulary that students can understand in texts, but not in their actions while writing or speaking, is referred to as passive vocabulary. Active vocabulary encompasses words that students can use correctly in the context. Active use of vocabulary is a key factor in fostering fluency in written and spoken communication among students in their advanced years (Madaminova, 2024). Teachers can employ techniques such as writing assignments, discussions, and presentations to motivate students to incorporate more advanced vocabulary into their language production. These activities encourage students to use words intentionally and creatively to convey their message.

In addition, acquiring more advanced vocabulary requires cultural and contextual awareness. Vocabulary in this group usually corresponds to cultural allusions or specialized academic disciplines. Scholars must be prepared to understand and apply terms such as "sustainability" and "quantum" to specific situations, as they have significant esoteric meanings in academic and professional domains (Holes, 2021). Acquiring advanced vocabulary is not limited to remembering definitions, but involves understanding the subtleties of word usage, their connotations, and their specific meanings in the field.

CHAPTER 2: METHODOLOGY FOR THE DEVELOPMENT OF RESEARCH AND DIAGNOSTIC STUDY

2.1 Paradigm

This study uses a mixed methods approach to answer the research question on the effectiveness of mobile learning for vocabulary acquisition among A1-level English learners. The combination of quantitative and qualitative data through mixed methods provides insight into current conditions as well as their underlying reasons and best solutions for achieving the research objectives. The mixed-methods approach offers comprehensive assessments because quantitative information provides statistical learning about vocabulary mastery and qualitative data reveals students' learning situations and contextual learning elements (Qiao, 2023). The researchers adopted a constructivist method that shows how students construct new knowledge by using digital tools and real-life situations to remain actively engaged in the learning process (Burns, 2022).

Through qualitative research, analysts investigate mobile learning tools, including mobile language education apps and platforms for educators, along with online discussion tools and digital learning materials that enhance vocabulary acquisition for students. The research investigates students' perceptions of these tools and their motivational factors as well as their engagement with language development. The quantitative assessment method measures progress in vocabulary acquisition through score analysis along with vocabulary retention statistics and context-based vocabulary instance tracking. The combined qualitative and quantitative assessment method provides an optimal framework for understanding the effect of mobile learning approaches on advancing A1-level students' language proficiency (Schoonenboom, 2023).

The strength of the research is increased due to the mixed methods that allow triangulation of data to enhance the reliability, validity, and depth of the findings collected. The combined analysis of quantitative results and qualitative information allows the study to provide a comprehensive understanding about vocabulary acquisition through mobile learning. Mixed methods research solves the problems associated with working with qualitative or quantitative methods independently by

providing a balancing approach to educational research. Research approaches following this method have become more popular because they allow researchers to use different perspectives along with simultaneous or sequential data collection techniques (Johnson, 2024). Through this methodological integration, the study aims to contribute to the broader field of mobile-assisted language learning (MALL) by providing evidence-based insights into how mobile learning tools can effectively support vocabulary development in A1-level English learners.

2.2 Operationalization of the variables

Table 1.

Operacionalization matriz of the Independent Variable

OPERACIONALIZATION MATRIZ			
CONCEPTUAL DEFINITION	**CONCEPTUAL DEFINITION**	**CONCEPTUAL DEFINITION**	**INDICATORS**
M-learning	Mobile learning is an educational method known as M-learning, which uses mobile devices such as smartphones, tablets, and laptops to enable anytime, anywhere learning assistance. This educational technique uses features of mobile technology such as mobility, connectivity, and interactivity to create dynamic learning environments that are student-centered. The definition of M-learning according to Qashou (2021)	**Learning process**	• Autonomy in learning • Individual progress • Motivation and engagement
		Technology connection	• Internet Accessibility • Platform accessibility. • Device compatibility
		Mobile devices	• Smartphones • Tablets • E-readers • Augmented reality • Computers
		Tele training tolls	• mobile applications • educator platforms • discussion forums online • online learning resources

Table 2.

Operacionalization matriz of the Dependent Variable

DEPENDENT VARIABLES	CONCEPTUAL DEFINITION	DIMENSIONS	INDICATORS
Vocabulary	Vocabulary refers to the collection of words that a person knows and understands in a particular language. It encompasses all the words, phrases, and expressions that an individual can use and comprehend when speaking, listening, reading, or writing (Journal, 2023).	**vocabulary expansion**	• diversity than lexical categories • linguistic expressions • connotation and denotation • diversity of thematic areas
		uses of vocabulary	• active vocabulary • passive vocabulary
		difficulty levels	• basic vocabulary • advanced vocabulary

2.3 Operationalization description

The application of M-learning to enhance English vocabulary in first-grade students looks to implement the M-learning platform to improve vocabulary to students from 15 to 17 years old at "Bocana del Búa" school. The topic is divided into two variables. The first one is Mobile learning as

the independent variable and the second one is English vocabulary as a second language. These variables have several dimensions with indicators.

Mobile learning: M-learning is a methodology that mainly makes use of mobile devices. Considering that we are in the technological age, almost everyone has access to mobile devices. Mobile devices in the educational area can have negative repercussions on the learning process because students bring devices to class and cause distractions, as well as positive repercussions that must be taken advantage of by teachers in teaching English.

The student who wants to make use of mobile learning has to register and get a recommendation to use it via web service. Students can also download mobile apps which will be installed on the mobile phone through the GPRS and WIFI connectivity. The students can read documents, watch video tutorials, listen to lectures or seminars, and finally they can take up self-assessment. They will be given results and analysis so that they can evaluate their strengths & weaknesses on their own. The mobile system helps to learn while you roam and also education for all at any time anywhere globally. Professionals can also share their valid tutorials into the cloud for development of the education community" (Blackledge, 2015)

As also mentioned, by Sanchez (2018), technological tools not only transmit information but can also be a fundamental pillar in the construction and acquisition of cognitive skills. For this reason, combining technology with education is a strategic plan with positive results.

English vocabulary: Vocabulary refers to the collection of words that a person knows and understands in a particular language. It encompasses all the words, phrases, and expressions that an individual can use and comprehend when speaking, listening, reading, or writing (Journal, 2023).

Also, Ogu (2019), developing the vocabulary base is crucial if the student has to improve on their communicative competence. In his speech and writing, he has to be armed with many words and their alternatives if his work will not appear insipid and tasteless. As in eating, well-spiced passages are the readers' delight. It can be said that vocabulary is the structural basis for acquiring a

new language because before knowing grammatical structures or verb tenses, having the knowledge and management of a sufficient list of words.

Including M-learning in the teaching-learning process generates a great diversity of materials and resources to benefit students in their vocabulary-learning processes. It is essential to cite some experts to conceptualize necessary and basic terms for this investigative work.

The teaching-learning process, or the education process, has been defined as a systematic, sequential, planned course of action on the part of both the teacher and learner to achieve the outcomes of teaching and learning (University of Maryland, 2023).

2.4 Research question

How does the implementation of M-learning impact the increase in English vocabulary in A1 level students who are in the first year of high school at "Bocana del Búa"?

2.5 Delimitation of population, sample, and sampling

In the "Bocana del Búa" Educational Unit of San Juan del Búa-Chone, 398 students were enrolled; however, 20 students made up the sample chosen for this research. Casteel et al. (2021) explain that the example is the representative portion of a population whose components have comparable or shared characteristics. In this study, intentional sampling was used. The sampling applied to this research is intentional. This non-probabilistic sampling was selected under the following considerations or criteria: 1) This group handles an A1 level of English. 2) All students attend the same school. 3) The group shares the same work schedule. 4) They study English on a mandatory basis. 4) The ages of these students fluctuate between 15 and 17 years. 6) The students have the time to participate in this study. 7) The director agreed and allowed me to carry out this study.

Table 3.

Delimitation of Population

Sample population participants	Sample population	Percentage
Women	7	35%
Men	13	65%
Total	20	100%

2.6 Research context

The study was conducted at the school "Bocana del Búa", a public institution located in Chone, San Juan del Búa, a province neighboring Santo Domingo. It is in the rural area of the Municipality of Chone. The students of this institution, although they come from various types of families and socioeconomic strata, tend to be from low socioeconomic levels. The participants are first-year high school students, aged between fifteen and seventeen. The teacher was in charge of the different tools and resources which were not provided by the university. Since the students were enrolled in compulsory instruction classes, contact with them was made in a face-to-face classroom.

2.7 Research stages

The research was divided into six phases: problem definition, theoretical review, instrument development, instrument application, data analysis, and writing of findings and suggestions. In the first stage, it was necessary to apply an observation list to learn more about the problem within the organization. In other words, this was the diagnostic phase to determine the purpose of the study and select the appropriate methodology. In the second phase, the researcher collected data on previous studies and on researchers who had examined and created other initiatives related to the topic in question. In the third stage, the instruments that would be given to the students who participated in the project were developed. An observation sheet, a pre-test, and a post-test were the tools used. The director of the present project evaluated and approved these instruments. In the fourth stage, the researcher used the tools to collect information for the analysis and findings of the study. The data was evaluated in the fifth stage to produce findings that demonstrated the progress of the students.

The sixth and final step was to present the findings along with the conclusions and suggestions in a final report of the data collected throughout the research.

Table 4.

Research Stages and Activities

Research project stage	Description	Activities	Performers
Delimitation of the problem	Identifying the issue of limited vocabulary acquisition among A1 English learners and exploring the potential of M-learning for improvement.	Observation, diagnostic phase, defining objectives.	Researcher, students, educational institution.
Literature review	Reviewing previous research on M-learning and vocabulary acquisition to build a theoretical foundation.	Collecting and analyzing academic sources, identifying key theories, and summarizing findings.	Researcher.
Elaboration of instruments	Developing tools for data collection, such as pre-tests, post-tests, surveys, and observation checklists.	Designing assessment tools and validating instruments with expert input.	Researcher, tutor, educational institution.
Application of instruments	Implementing the developed tools to collect data from students regarding vocabulary acquisition through M-learning.	Conducting pre-tests, introducing M-learning methods, monitoring student engagement, and administering surveys.	Researcher, students, tutor.
Data analysis	Evaluating the effectiveness of M-learning in vocabulary acquisition by comparing pre-	Statistical analysis, qualitative data	Researcher.

	and post-test results and analyzing survey responses.	interpretation, identifying trends and correlations.	
Final report of data and conclusions	Summarizing findings, concluding, and making recommendations for future studies and educational practices.	Writing the research report, presenting findings, and discussing implications and limitations.	Researcher, tutor, and educational stakeholders.

2.8 Justification data collection

The mixed methods methodology of this research is used by students at the A1 level to determine the impact of mobile learning on English vocabulary acquisition. The data collection process is based on pre-and post-test assessments combined with classroom observation data and surveys to study the progress of vocabulary learning in students.

Students will begin and end their vocabulary measurements through pre- and post-tests during the periods of implementation of the mobile learning tool. A baseline measurement using the pre-test sets the initial conditions that the post-test will assess regarding the outcomes of the mobile learning intervention. Multiple-choice questions combined with matching exercises and sentence completion tasks will make up the assessments at the A1 vocabulary level.

A survey method will obtain students' opinions on mobile learning along with its consequences for their vocabulary growth. The research survey contains Likert-scale and multiple-choice questions that assess mobile learning applications through student engagement and motivation and frequency of application use.

Observations of instructional sessions will analyze students' engagement and interactions when using mobile learning tools for the study. Observations will gather useful information about students' behavior as they use digital resources and their effectiveness in adding new vocabulary to their conversations.

The study employs validated research instruments that have been specifically tailored to meet its research objectives of collecting reliable data. The analysis framework benefits from both quantitative performance metrics and qualitative assessments to create a triangulated assessment method that reveals increased awareness of the benefits of mobile learning for A1-level English vocabulary development.

2.9 The scope of the research

The research aims to study the implementation of mobile learning to improve English vocabulary at the "Bocana del Búa" Educational Unit among A1 level students from a rural canton of Chone in the province of Manabí, Ecuador. The research assesses first-year high school students belonging to the age group of 15 to 17 years who changed their English proficiency from pre-A1 to A1 after their recent enrollment.

2.10 Research purpose

The research aims to study the application of mobile learning to achieve better English vocabulary development for A1 level students attending the "Bocana del Búa" Educational Unit. This research investigates methods for teaching vocabulary to young digital learners because standard teaching methods do not provide adequate flexibility and interaction with students. The main problem that this study examines is to develop effective vocabulary learning methods compatible with the learning of A1 level students in rural environments. The primary objective of the research investigates the effects of mobile learning practices on the success of English vocabulary learning for students at the "Bocana del Búa" Educational Unit, as it analyzes how mobile devices enhance personalized education methods and expand vocabulary expansion capabilities in non-traditional classroom settings.

2.11 Research justification

The need to improve English vocabulary acquisition among A1 level students at the "Bocana del Búa" Educational Unit was observed. Informal teacher assessments with researcher observations

show that students face difficulties in learning vocabulary, which impairs their English language development. The proposed educational project includes twelve classes of eighty minutes each to be taught during the one-month intervention schedule. Mobile learning tools receive intensive instruction within a focused four-week period to close the vocabulary gap while teaching better language learning systems. The February plan span consists of 640 minutes in eight 80-minute lessons. This structure allows for a manageable yet high-impact intervention within the existing academic calendar, maximizing student engagement with mobile learning resources to improve their English vocabulary**.**

2.12 Instruments derived from the selected methodology

Three research instruments were chosen to support the study: pre-test, post-test, and observation sheet. The designed instruments assess the acquisition of English vocabulary by A1-level students through mobile learning.

2.13 Pre-tests and post-tests

Students will be given the pre-test at the beginning of the intervention period during the first week of February and the post-test at the end of the intervention period, which will be given in the last week of February. Students will participate in the tests, which span a normal class length of 80 minutes. The assessment tests will assess vocabulary understanding of the topics from the eight learning sessions. The mobile learning activities will serve as the basis for the format and content structure of the A1 level English proficiency tests.

2.14 Observation Sheet

Throughout the intervention, the observation sheet serves to document students' participation during vocabulary activities. The observation sheet contains criteria designated to assess how students use vocabulary knowledge along with their ability to handle materials as well as their full participation in activities. Qualitative data will be collected on the effectiveness of the mobile learning intervention through the administration of the observation sheet.

2.15 Data processing and statistical analysis

The observation sheet and present and post- test data will be entered through a spreadsheet program before being imported into statistical software (SPSS or equivalent) to facilitate analysis. Statistical analysis will begin with descriptive measures combining mean scores along with standard deviations and minimum and maximum test results for both pre-test and post-test assessments. A paired samples t-test will assess the statistical significance of altered pre-test to post-test scores for vocabulary acquisition.

The paired samples t-test

Statistical analysis of pre-test and post-test score means will utilize the paired samples t-test. The test proves suitable due to its measurement of the same students' multiple times. Statistical significance will be determined by the t-test to verify if the measured score differences truly exceed random chance variation. The main evidence of statistical significance will come from the t-test p-value. The experimental results will be deemed statistically meaningful when a p-value achieves a level lower than 0.05 thus discarding the null hypothesis about pre-test/post-test vocabulary score equality.

Qualitative Data Analysis

The researchers will perform a thematic evaluation of the information obtained from observation sheets. An evaluation of observation notes demonstrates the identification of recognized patterns that portray students' involvement with M-learning tasks and their difficulties and vocabulary progress. The identified themes will create the foundational context that both expands and substantiates the results from quantitative assessments to better illustrate vocabulary acquisition outcomes through M-learning.

2.16 Target needs

All first-year high school students at the "Bocana del Búa" Educational Unit are required to study English as a curricular subject. The research provides educational support to high school

students to learn practical English vocabulary in different practical situations. The educational content will consist of choosing words that students need in their current life along with academic engagement and future work needs.

This research will use mobile learning activities designed based on the students' A1 English level and linking vocabulary education to literature, mathematics, social studies, and natural science classes. The planned activities allow students to actively use English both in scheduled classes and in their independent study materials.

The research employs multiple engaging mobile learning tools consisting of mobile applications as well as online platforms and digital learning materials. The tools present interactive tasks along with multimedia information and personalized educational activities. Active participation, in addition to the development of motivation, represents the goal of establishing an environment that is student-centered.

The research study places high priority on both student-to-student communication and collaborative practices. The designed activities will promote interaction between students through group work and meaningful use of the English language in group tasks. Through this method, educational institutions create conditions that help students develop their language skills while becoming more proficient in written and spoken English.

The research limits the use of the Spanish language to promote students' exposure to the English language learning environment. Students will be faced with an environment that provides support and encouragement so that they can take risks and practice their English language skills comfortably.

2.17 Learning needs

Student enrollment at the "Bocana del Búa" Educational Unit includes English language instruction due to national educational programs established by the Ministry of Education. Students typically come from low-income families who cannot afford supplementary English language

education outside of their school system. These students receive their greatest exposure to the English language only through their school lessons.

The research subjects belong to adolescent age groups with an age range between 15 and 17 years. The benefits of educational approaches that use interactive educational strategies with collaborative activities, as well as real-world learning applications, apply to students within this age range. These students possess experience with technological tools used for educational purposes, which drives their interest in using technology-based learning methods.

The project obtains its resources through materials along with devices that will be provided by the researcher. The students at “Bocana del Búa” show a natural interest in learning due to their positive learning environment.

The lesson's duration is eighty minutes. The predetermined schedule allows for dedicated instructional time due to its fixed constraints.

2.18 Validation of the research proposal

An expert collaborated with the researcher to carry out the development and review of the instrument, which enabled the completion of the approval requirements necessary for the implementation of the intervention. MSc. Johnny Campoverde López participated as the first expert in the instrument approval procedure. The researcher received input and approval of his instruments, including the observation sheet, pre-test, and post-test, from the tutor.

2.19 The intervention plan

The treatment stage will be performed within one month, specifically in February. During this month, eight lesson plans will be applied, with two lesson plans per week. The application of the proposal will last four weeks, starting on February 3rd and ending on February 28th

Table 5.

Intervention Plan Schedule - February

Days	Activities
February 3rd	Pre-test application
February 3rd	Lesson plan 1
February 6th	Lesson plan 2
February 10th	Lesson plan 3
February 13th	Lesson plan 4
February 17th	Lesson plan 5
February 20th	Lesson plan 6
February 24th	Lesson plan 7
February 27th	Lesson plan 8
February 28th	Post-test application

2.20 Ethical Considerations in Research Methodology

In conducting this research on the implementation of M-learning to increase English vocabulary in A1-level students, ethical considerations have been carefully addressed to ensure the protection and well-being of all participants. The study adheres to the principles of ethical research, which include informed consent, confidentiality, voluntary participation, data protection, and academic integrity.

- **Data quality and accuracy**

The research relies on the accuracy and reliability of all data collected as an essential ethical practice. The research team used validated tools consisting of pre-and post-tests along with classroom observation data to accurately measure vocabulary learning. Checks were conducted to repair inconsistencies as well as potential errors, which preserved the accuracy of the research study.

Multiple forms of data were compared to each other to strengthen the validity and reliability of the results, thus avoiding any irregular findings.

- **Data privacy and security**

The researchers made the security of participants' privacy and data protection their main research priorities. All personal information received during research activities was given anonymization procedures that protected students from identification. All procedures were fully compliant with data protection regulations to prevent unauthorized persons from accessing or misusing the collected data.

- **Ethics and values**

All research activities followed ethical principles that focused on maintaining students' educational growth and well-being. The research design protected participants by maintaining fair treatment and professional research management so as not to result in physical or psychological harm to participants. The ethical assessment included a focus on the educational advantages of mobile learning while preventing students from facing disadvantages. The research positively contributed to educational research by providing authenticated findings on improved vocabulary acquisition methods.

- **Data interpretation and bias**

The research carried out clear and unbiased data analysis and interpretation procedures. Standardized data analysis techniques were used to reduce the risk of bias in the data. The researchers avoided data manipulation while acknowledging all the limitations of their research work. The researchers worked to eliminate any influence that personal beliefs and external factors might have on interpreting the results. The method applied preserved both academic credibility and research integrity throughout the study.

CAPÍTULO 3: PRESENTACIÓN Y VALIDACIÓN DE LA PROPUESTA

3.1 Presentation of the proposal

Mobile learning (M-learning) has become an essential educational tool, leveraging innovations in the digital world to offer innovative methods that enhance current learning experiences. Mobile technology integrated into language learning allows students to explore interactive and flexible vocabulary learning experiences that spark their curiosity. Current educational methods primarily use textbooks alongside classroom instruction but sometimes fail to reflect how contemporary students learn best. A1-level English learners benefit significantly from M-learning methods, as they create an active and productive learning approach during the first phase of their language training.

Language proficiency significantly benefits from vocabulary acquisition, as it lays the essential foundation for developing listening and speaking skills, in addition to reading and writing competencies. Expanding vocabulary knowledge is the top priority for A1-level learners who need English for daily communication. Students struggle to memorize and retain information because they lack sufficient opportunities to learn English outside of their academic environment. Mobile learning solves this problem by providing students with consistent digital tools that engage them in interactive activities that support vocabulary development.

The proposed project establishes M-learning approaches to boost vocabulary development for A1-level English learners. Students benefit from mobile applications, online exercises, and interactive games that allow them to practice and strengthen their new vocabulary through self-directed educational activities. The training consists of eight 80-minute sessions that combine technology-based educational methods with face-to-face teaching. Educators will combine innovative tools with face-to-face teaching to make the most of these two learning modalities.

The main advantage of mobile learning systems lies in their customization capabilities, which create unique learning experiences for each student. Mobile applications utilize individual student progress to offer exercises that focus on their specific skills and knowledge gaps.

Furthermore, the use of multimedia elements such as images, audio, and videos improves comprehension and retention, making vocabulary learning more meaningful. These features allow students to interact with the content in a way that best suits their learning styles, promoting deeper understanding and long-term retention of new words.

Furthermore, mobile learning fosters student engagement and motivation. Students often lose interest in traditional, monotonous vocabulary exercises, which diminishes their motivation. Mobile educational activities, based on gamification and interactive methods, turn vocabulary learning into an engaging and rewarding experience. Digital tools provide rapid feedback to students, improving their engagement and allowing them to monitor their progress while strengthening their sense of achievement and motivation.

One of the main advantages of M-learning lies in its ability to allow students to access it at any time and with flexible learning options. Students now have access to vocabulary practice through mobile devices, anywhere, anytime, overcoming the limitations of traditional classrooms. Thanks to the flexible features, students can integrate language sessions into their daily activities, thus supporting vocabulary learning at any time. Students can better control their language development through independent learning, as online dictionaries include pronunciation guides and translation tools.

The experiment will use different assessment techniques to evaluate vocabulary acquisition through m-learning, such as student quizzes, interactive assignments, and end-of-semester feedback. Educational analysis of the data results, and student engagement levels allows educators to understand the effect of m-learning on vocabulary recall and overall language ability. The research results will help reveal the effects of technology on language acquisition and recommend future teaching methods.

The implementation of M-learning creates an ideal opportunity to boost vocabulary acquisition among A1-level English learners. Using digital tools combined with interactive resources, this project develops an engaging approach to achieve improved learning outcomes.

Educational institutions need to incorporate mobile learning strategies, as technology has become essential for learning, while also addressing current student needs, which differ from traditional education.

3.2 Objectives

3.2.1 General objective

- To enhance the vocabulary acquisition of A1 English-level students through the implementation of mobile learning strategies.

3.2.2 Specific Objectives

- To integrate mobile applications and digital resources into vocabulary learning activities.
- To analyze the effectiveness of M-learning in improving vocabulary retention among A1 students.
- To foster student engagement and motivation through interactive and technology-driven learning experiences.

3.3 Proposal Justification

Students need education to define their academic and professional futures, and language learning is a fundamental component. English education is aligned with the national curriculum established by the Ministry of Education for the high school Bocana del Búa. Low-income children do not receive additional English instruction due to their restricted access to additional educational opportunities. The research search to address this problem by introducing mobile learning (M-learning) methods to teach English vocabulary. The project uses technology-based educational methods to strengthen students' vocabulary skills while preserving their current educational environment.

The research findings demonstrate its importance for both theory and practice. The research contributes new insights to M-learning studies in language teaching related to vocabulary acquisition for A1-level English learners. The research reveals the capabilities of digital tools that help students

maintain vocabulary knowledge while increasing their motivation and interest in learning English. The research enables educators to develop strategies to integrate mobile learning into their educational plans. This research demonstrates that technological integration in traditional classrooms allows digital resources to improve educational outcomes without requiring families to invest additional money. Students at the high school Bocana del Búa, aged 15 to 17, who are the research subjects, will benefit most directly from this project. Students of this age demonstrate greater receptivity to educational methods based on teamwork and the practical use of classroom knowledge. The students already demonstrate familiarity with educational technology, which fosters both their motivation and interest in mobile learning devices. The institution's faculty can also benefit from this study by gaining access to innovative teaching methods that can be implemented in their classrooms, thereby improving the overall effectiveness of language teaching.

The project achieves viability thanks to the availability of sufficient resources. The materials and devices necessary for implementing the mobile learning strategy will be obtained from the researcher to avoid financial constraints for students. The school's supportive educational environment enhances the project's viability thanks to students' natural interest in learning. The project benefits from an organized 80-minute class format, allowing for dedicated teaching time to effectively integrate mobile learning.

The research implements contemporary educational approaches centered on student-led programs and educational technology applications. Common vocabulary teaching practices do not necessarily foster the engagement and success of students who minimally interact with English in their daily lives. Through mobile learning strategies, this project establishes interactive multimedia methods that enhance student learning and their ability to recall new vocabulary. Best practices in language learning emphasize that the acquisition of new words occurs best when students experience interesting, contextualized content that reiterates essential vocabulary points. The premises of this research study are derived from its ability to help low-income students overcome learning obstacles in their English language acquisition process. By implementing mobile learning in vocabulary education, the project offers a realistic approach that enhances student engagement and their acquisition of language skills. The research contributes significant value to academic understanding

by providing insights that guide education professionals and policymakers who wish to use technology to improve educational programs. The project demonstrates its practical value as a motivating solution for teaching A1-level English vocabulary by providing the necessary resources alongside motivated students.

3.4 Characteristics

The research adopts a quantitative approach to measure how mobile learning methods improve the vocabulary acquisition of A1-level English learners using numerical data. The research will collect numerical information by administering pre- and post-tests that assess students' vocabulary progress before and after the introduction of mobile learning strategies. The research will combine structured surveys with statistical assessments to determine student engagement and retention rates and performance metrics in vocabulary activities. A quantitative approach provides research findings that support data-driven conclusions about the effects of mobile learning on language teaching.

The research adopts an experimental research format that guides students through standardized educational content during each session. The research design utilizes eight 80-minute sessions that implement mobile applications combined with games and vocabulary learning activities. Throughout the research sessions, the collection of quantitative data allows the researchers to examine changes in learning performance generated by mobile learning educational activities. Analysis using statistical methods will determine the performance of mobile learning approaches in vocabulary retention by measuring their effectiveness.

These findings are valid and reliable because standardized testing procedures are used in conjunction with controlled research environments. The reliability of data collection will be maintained through standardized assessment procedures, including multiple-choice vocabulary tests and digital self-assessment systems. This study yields findings applicable to other educational situations, as statistical measurements provide standardized results. This study designs a structured

research approach to obtain meaningful findings on the effectiveness of mobile learning in A1-level English vocabulary learning.

3.4.1 Conceptions

This proposal is based on contemporary educational concepts that support student-directed learning with modern educational technology. Constructivist and connectivist theories form the basis of mobile learning, as they assert that effective learning occurs when students actively construct knowledge by exploring digital content in real-life settings. Using the constructivist approach, students learn best through practice, as it allows them to discover vocabulary through mobile applications and multimedia resources, as well as collaborative tasks. Students acquire knowledge through connectivism perspectives by leveraging digital networks, allowing them to interact with content both online and with peers and educators dynamically and flexibly.

3.4.2 Approaches and Models

The implementation combines conventional face-to-face education with mobile technology as a learning tool. Students learn vocabulary through the communicative language teaching method, which encourages them to use memorized words in natural communication contexts. Students who learn vocabulary through mobile interactive activities will practice new words in real-life situations. The proposed model includes task-based learning (TBL), which incorporates mobile tasks that allow students to put learned words into practice in real-life situations.

The proposal implements gamification concepts through mobile games, combined with quizzes and challenges, to maintain students' interest and boost their vocabulary learning. The program includes various learning resources, such as videos, images, and audio recordings, to boost students' vocabulary learning and offer multiple avenues for knowledge retention.

3.5 Structure and dynamics of its components

The educational proposal operates as a methodological initiative that uses mobile learning (M-learning) to boost vocabulary development in A1-level English learners. The system combines

planned lessons with technological educational practices that create an interactive learning path for students. The program offers eight carefully structured interactive sessions to teach vocabulary over 80-minute periods. A methodical procedure organizes the lesson design, beginning with the presentation of vocabulary, moving through practice with mobile applications to the formulation of assessment tasks and the implementation of feedback activities. Through this systematic design, students acquire vocabulary skills by progressively working with electronic learning resources.

The proposal adopts blended learning, combining classroom instruction with M-learning principles for student development. Each session will organize its activities between individual work, pair work, and group work to encourage students to learn together and communicate with each other. Educational content, including mobile apps, gamified exercises, and multimedia resources, will be implemented within lesson structures to increase student motivation and strengthen their commitment to learning. Interactive activities allow students to participate directly, fostering an understanding of contextually relevant vocabulary. Students can monitor their progress through integrated assessment tools combined with feedback systems that help strengthen their learning process. The project is presented as a blueprint for teaching methods that students can use in multiple learning environments. The defined teaching plan, along with the methodological framework, functions as an educational model for teachers who wish to adopt mobile learning approaches. The proposal's research evaluates this approach through quantitative data analysis, as the goal is to create educational strategies that enhance language learning success. The application of innovative digital devices, coupled with appropriate pedagogical techniques, creates a dynamic learning domain that facilitates vocabulary development for students with an A1 English level.

3.6 Validation of the proposal

This proposal has empirical validation because the data collected through pre-and post-tests, surveys, classroom observations, and test results provide practical evidence of the effectiveness of mobile learning (M-learning) in improving the English vocabulary of A1-level students. The analysis of these findings, based on direct observations and statistical data, demonstrates the impact of M-learning on vocabulary acquisition, student motivation, and engagement.

Furthermore, the effectiveness of mobile learning in developing the English vocabulary of A1-level students was determined through pre-and post-tests, surveys, and classroom observations. Most students demonstrated limited vocabulary knowledge, according to pre-test results, due to their difficulty identifying and using new English words. Classroom observations demonstrated how students used memorized phrases in their native language rather than developing natural vocabulary recall. Research data showed that a significant number of students displayed lower motivation and confidence in vocabulary development, demonstrating the need to consider better methods for vocabulary development.

Students made notable progress in their vocabulary in the post-assessment after completing mobile learning with structured eight-lesson sessions. Most students achieved superior results on their vocabulary tests, as they demonstrated an increased ability to correctly recall words, understand their meaning, and apply them in context. Data collected during classroom observations confirmed increased student engagement and motivation, thanks to their active participation in digital exercises, gamified collaborative tasks, and mobile app tasks. Their participation in mobile learning improved vocabulary comprehension and recall while also enhancing the use of new words, which in turn enhanced independent learning activities.

Classroom observations, combined with survey results, provided further insight into student learning activities, along with test score data. The implementation of mobile learning techniques followed faculty observations that traditional students struggled to correctly recall words in their academic contexts, leading them to memorize them by rote. Mobile learning tools generated greater enthusiasm and confidence among students when practicing their vocabulary. Students' vocabulary exploration in digital formats increased along with class participation after the implementation of mobile learning, as they experienced less anxiety and greater enjoyment during vocabulary learning. Students experienced successful learning through mobile applications that offered dynamic instruction thanks to their interactive features and rapid feedback processes.

The thesis advisor evaluated the proposal's methodological basis, instructional plan design, and research findings before approving it. Using statistical findings, observational data, and student

feedback, the advisor evaluated the effects of mobile learning and found that it significantly improved vocabulary acquisition. The validation procedure demonstrated that M-learning is a successful substitute for conventional teaching techniques, promoting not only vocabulary growth but also motivation, autonomy, and engagement.

3.7 Resources

Several resources will facilitate the successful implementation of mobile learning in the proposed project. The primary resource for implementation consists of mobile devices, including smartphones or tablets, which students will obtain if they do not already have them. The mobile devices will allow students to access educational apps and online platforms that help them develop their vocabulary. The project requires a reliable internet connection, which both teachers and students need to use digital educational resources through language learning apps and websites. Educators need templates to design lessons and digital access to A1-level learning materials, which consist of videos with audio and interactive educational activities. Efficient vocabulary learning depends on educational apps such as Duolingo, Quizlet, and Memrise, as these platforms offer an engaging game format to enrich educational experiences. Teachers must be provided with effective training in mobile learning strategies, along with guidance on implementing these tools for vocabulary-focused lessons, to ensure successful content delivery.

3.8 Beneficiaries

The project's primary beneficiaries will be students aged 15 to 17 at the Bocana del Búa Educational Unit. This group of students is more willing to use teaching strategies that prioritize collaboration and the practical application of classroom skills. Their prior knowledge of educational technology fuels their enthusiasm and interest in mobile learning devices. This study can also assist the institution's faculty by providing them with new teaching strategies to implement in their classrooms, thereby increasing the overall effectiveness of language teaching.

3.9 Collection and interpretation of diagnostic data

3.9.1 Validation

Table 6.

Validation

		Pertinence	Relevance	Accuracy
Learning process	**Yes**	2	2	2
	No	0	0	0
Technology connection	**Yes**	1	2	2
	No	1	0	0
Mobile devices	**Yes**	2	2	2
	No	0	0	0
Tele training tolls	**Yes**	2	1	2
	No	0	1	0

Table 1 presents the validation results for four key aspects: the learning process, technological connection, mobile devices, and e-learning tools. For each of these aspects, three criteria were assessed: relevance, relevance, and accuracy. The results are shown as the number of "Yes" and "No" responses for each criterion.

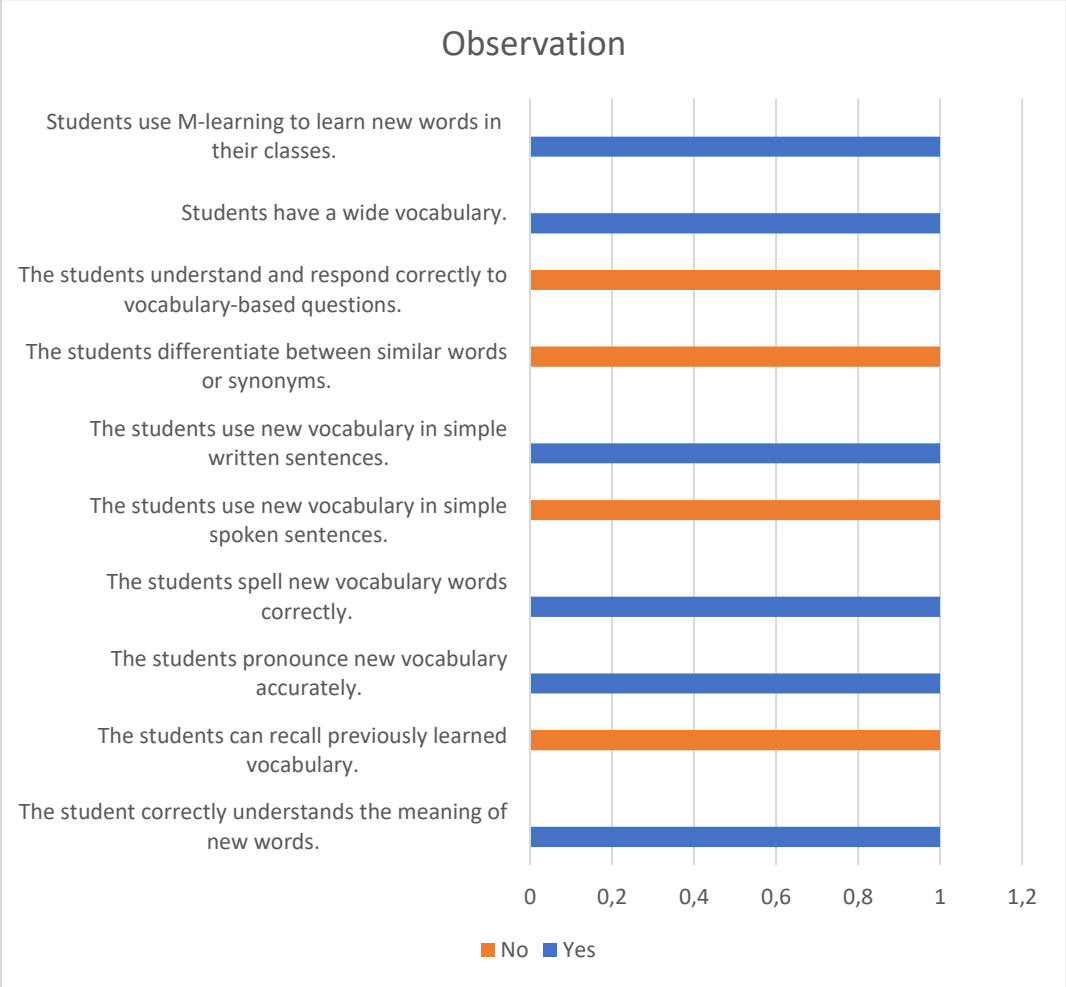
Regarding interpretation, the learning process received perfect validation, with two "Yes" responses for each criterion, indicating that it was considered relevant, pertinent, and accurate by all evaluators. Mobile devices also received perfect validation, showing two "Yes" responses for each criterion, meaning they were perceived as relevant, pertinent, and accurate. On the other hand, the technological connection received mixed validation. Although it was considered relevant and accurate, with two "Yes" responses for these criteria, it only received one "Yes" response and one "No" response for relevance, suggesting that it was not considered as relevant. Finally, the e-learning tools also received mixed validation. Although they were evaluated as relevant and accurate (2 "Yes"

responses), they only received 1 "Yes" response and 1 "No" response for relevance, indicating that they were not perceived as relevant compared to other aspects.

3.9.2 Observation sheet

Figure 1.

Observation



The bar chart presents the results of an observation of student performance in various skills related to vocabulary learning and M-learning use. Each bar in the chart represents a specific statement or skill, with the length of the bar indicating the degree to which students demonstrate that

skill. The bars are color-coded, with blue representing affirmative responses ("Yes") and orange representing negative responses ("No").

The analysis suggests that students perform well in various areas related to vocabulary learning and M-learning use. Most students use M-learning to learn new vocabulary, have a broad vocabulary, and can understand, answer questions about vocabulary, and differentiate between similar words. Furthermore, most students can use new vocabulary in simple sentences, spell and pronounce new words, recall previously learned vocabulary, and correctly understand the meaning of words. These trends indicate a high level of skill in the assessed areas, reflecting an effective integration of M-learning tools into the vocabulary learning process.

Table 7.

Delimitation of population

Participants	Population	Percentage
Woman	8	40,0%
Men	12	60,0%
Total	20	100,0%

Figure 2.

Delimitation of population

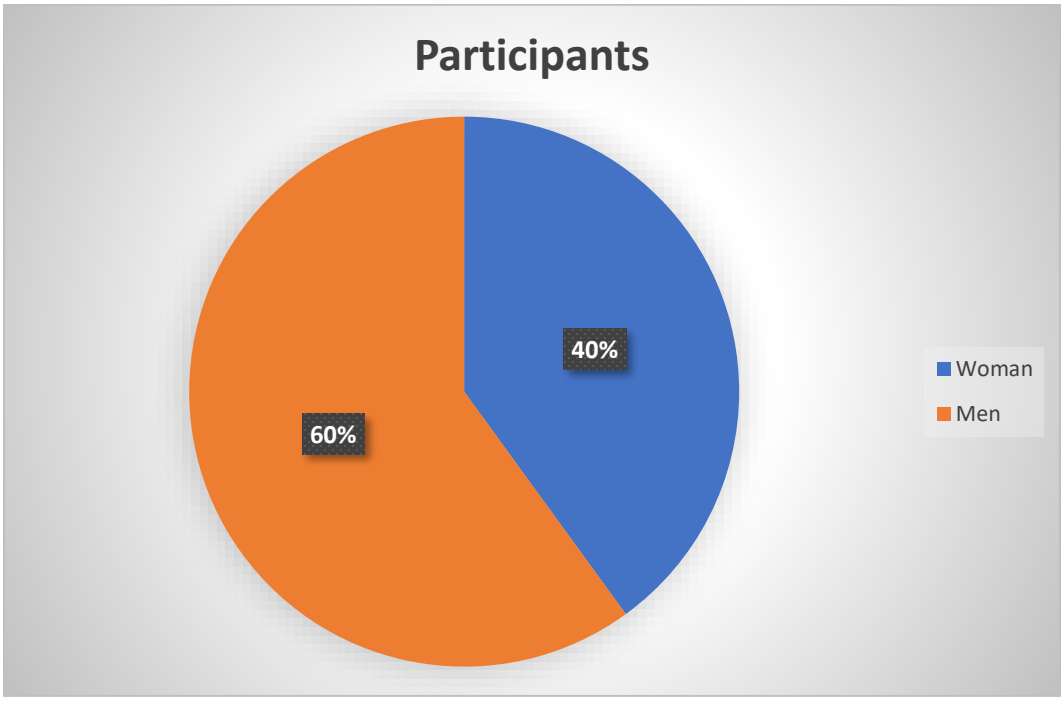


Table 2 shows that the study sample is composed of 20 individuals, of whom 8 are women (40%) and 12 are men (60%), revealing a significant gender imbalance, with more male participants. This imbalance is relevant for the interpretation of the results, as gender differences could influence the variables analyzed. Depending on the study's objectives, this imbalance could affect the comparison of responses or behaviors between men and women, reducing the statistical power of the comparisons.

The imbalance in gender representation could limit the generalization of the results to other populations with a different gender distribution. Furthermore, the interpretation of this imbalance depends on the context of the study, including the research topic, the target population, and the sampling methods used. It is important to consider these factors when analyzing the findings and drawing conclusions, as unequal group sizes can affect the validity of the results obtained.

3.9.3 APTIS PRE-TEST

Table 8.

APTIS PRE-TEST

APTIS PRE-TEST	Grade
Average	6,39

Figure 3.

APTIS PRE-TEST

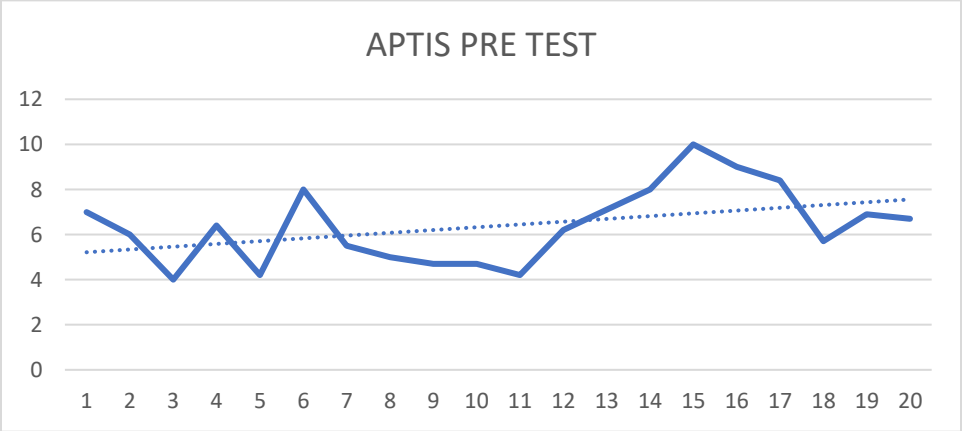


Table 3 shows the average score of the APTIS PRETEST, with a score of 6.39. This average reflects the overall performance of the group of individuals who participated in the test, but for a complete interpretation, it is necessary to know the scoring scale used in the test, as without this information, it is difficult to determine whether the result is high, low, or simply average.

The average of 6.39 could have various implications depending on the reference standards and the scoring scale of the APTIS Pre-test, as it could indicate a specific level of linguistic proficiency in the language being tested. This result may be relevant to the study in question, as it could serve as a benchmark for assessing the progress or impact of an intervention on language learning. For a more precise interpretation, it would also be useful to know the standard deviation of the results, which would provide a more detailed view of the variability in performance within the group.

3.9.4 APTIS POST-TEST

Table 9.

APTIS POST-TEST

APTIS POST-TEST	Grade
Average	8,01

Figure 4.

APTIS POST-TEST

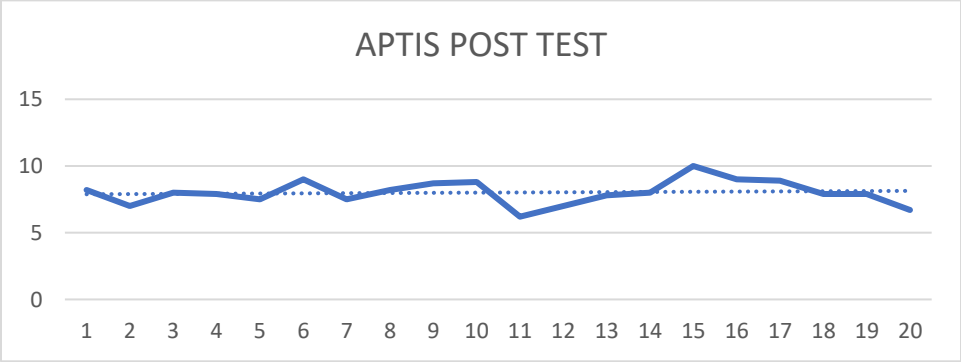


Table 4 presents the average APTIS POST-TEST score, with a score of 8.01, which reflects the average performance of the group participating in this assessment. As with Table 2 (APTIS PRE-TEST), it is crucial to know the scoring scale used in the test to determine whether this result is high, low, or average within the context of the assessment. Without this information, it is difficult to properly interpret the score obtained.

The average score of 8.01 could have significant implications depending on the scoring standards established for the APTIS Post-test as it could indicate a specific level of linguistic proficiency in the language being assessed. This result is relevant to the study, as it could serve as a benchmark for evaluating the progress or impact of any intervention or program related to language learning, especially when compared to the result obtained in the APTIS PRE-TEST (Table 2). For a more accurate interpretation, it would also be useful to know the standard deviation of the results, which would provide additional information on the variability of the group's performance.

CONCLUSIONS

- Thanks to Duolingo's mobile learning programs, A1-level students substantially improved their vocabulary. The interactive features of this learning platform helped them learn independently and strengthen their vocabulary recall.
- This research sheds new light on mobile learning techniques that help students master languages. Research shows that technology provides an efficient way to improve vocabulary, especially in resource-limited educational settings.
- Mobile learning has enabled both students and teachers to acquire modern teaching methods for language learning. The Duolingo app offered students a flexible learning environment that adapted to their individual needs.
- Students' motivation and engagement increased when Duolingo became part of their language studies, enabling better learning experiences with dynamic and exciting elements. Duolingo's gamification features helped students practice regularly, making it important for A1 language learners to maintain consistent practice.

RECOMMENDATIONS

- Educational institutions must adopt mobile learning as a lifelong learning approach to improve vocabulary instruction. In addition to mobile learning, teachers should conduct classroom discussions and activities to reinforce knowledge acquisition.
- The analysis of different mobile apps as language learning tools requires further research to establish their effectiveness. Research on vocabulary retention levels over long periods following mobile learning activities will provide further insight into the effects of memory retention.
- Teacher training programs should instruct educators on the effective implementation of mobile learning for lesson planning. Teachers must monitor student progress, develop supplementary teaching materials, and troubleshoot technical issues.
- A solution must be developed to ensure that under-resourced schools have equitable access to mobile learning devices. Schools should provide mobile devices paired with offline educational content, as well as dedicated app interaction programs to help students optimize their learning.

REFERENCES

Aguaiza Iza, M. F. (2021). Mobile-Assisted Language Learning (MALL) for vocabulary improvement in A1 Level English students at Universidad Técnica de Cotopaxi-Language Department (Master's thesis, Ecuador: Latacunga: Universidad Técnica de Cotopaxi (UTC)).

Akbarighatar, P. P. (2023). A sociotechnical perspective for responsible AI maturity models: Findings from a mixed-method literature review. International Journal of Information Management Data Insights. *3*(2).

Akdere, M. A. (2021). RETRACTED: An examination of the effectiveness of virtual reality technology for intercultural competence development. https://doi.org/https://doi.org/10.1016/j.ijintrel.2021.03.009

Akour, I. A. (2021). Using machine learning algorithms to predict people's intention to use mobile learning platforms during the COVID-19 pandemic: Machine learning approach. *7*(1). https://doi.org/10.2196/24032

Al-Emran, M. M. (2021). Is M-learning acceptance influenced by knowledge acquisition and knowledge sharing in developing countries?. Education and Information Technologies. *26*, 2585-2606.

Allen, J. (2023). Words, words, words: Teaching vocabulary in grades 4-12. Routledge.

Al-Rahmi, A. M.-R.-A. (2022). Acceptance of mobile technologies and M-learning by university students: An empirical investigation in higher education. Education and Information Technologies. *27*(6), 7805-7826. https://doi.org/https://link.springer.com/article/10.1007/s10639-022-10934-8

Alshurideh, M. A.-E. (2023). Predicting the actual use of m-learning systems: a comparative approach using PLS-SEM and machine learning algorithms. Interactive Learning Environments. *31*(3), 1214-1228.

Amin, S. N. (2021). Gamification of Duolingo in Rising Student'S English Language Learning Motivation. Jurnal Bahasa Lingua Scientia. *13*(2), 191-213. https://doi.org/https://doi.org/10.21274/ls.2021.13.2.191-213

Ansarin, A. A. (2021). Task-induced involvement load and working memory: Effects on active and passive vocabulary knowledge of EFL learners in a multimedia learning environment. *7*(1),

277-302.

Asio, J. M. (2021). Internet connection and learning device availability of college students: Basis for institutionalizing flexible learning in the new normal. Studies in Humanities and Education. *2*(1), 56-69. https://doi.org/https://doi.org/10.48185/she.v2i1.224

Bailey, D. A. (2021). Finding satisfaction: Intrinsic motivation for synchronous and asynchronous communication in the online language learning context. Education and Information Technologies. *26*(3), 2563-2583.

Bjørgen, A. M. (2022). Tablets in two Norwegian primary schools: is it time to consider young pupils' framings of using tablets in education?. Education. *50*(7), 954-965. https://doi.org/https://doi.org/10.1080/03004279.2021.1929376

Blackledge, D. J. (2015). Journal on Communication Engineering and Systems. *EDITORIAL COMMITTEE*, 33.

Burns, M. B. (2022). Constructivist grounded theory or interpretive phenomenology? Methodological choices within specific study contexts. International Journal of Qualitative Methods. *21*.

Butler, A. C. (2021). The use of mobile learning technologies for corporate training and development: A contextual framework. In Strategic corporate communication in the digital age . 115-130. https://doi.org/https://doi.org/10.1108/978-1-80071-264-520211007

Calderón, A. S. (2021). An integrated blended learning approach for physical education teacher education programmes: teacher educators' and pre-service teachers' experiences. Physical Education and Sport Pedagogy. *26*(6), 562-577. https://doi.org/https://doi.org/10.1080/17408989.2020.1823961

Cambridge. (2020, july 15). *Cambridge*. Cambridge: https://www.cambridgeenglish.org/exams-and-tests/cefr/

Carpenter, S. K. (2022). The science of effective learning with spacing and retrieval practice. Nature Reviews Psychology. *1*(9), 496-511. https://doi.org/https://www.nature.com/articles/s44159-022-00089-1

Casteel, A. &. (2021). DESCRIBING POPULATIONS AND SAMPLES IN DOCTORAL STUDENT RESEARCH. International Journal of Doctoral Studies. *16*(1).

Chang, X. &. (2025). *14*(1). https://doi.org/ Game-Based Learning in ESL Classrooms: A Focus on

Gimkit and Other Apps. International Journal of Higher Education

Chen, C. H. (2021). Virtual reality in problem-based learning contexts: Effects on the problem-solving performance, vocabulary acquisition and motivation of English language learners. Journal of Computer Assisted Learning,. *37*(3), 851-860. https://doi.org/ https://doi.org/10.1111/jcal.12528

Criollo-C, S. G.-A.-A.-M. (2021). Mobile learning technologies for education: Benefits and pending issues. Applied Sciences. *1*(9), 4111.

Criollo-C, S. G.-A.-A.-M. (2021). Mobile learning technologies for education: Benefits and pending issues. Applied Sciences. *1*(9).

David, C. (2010). *A little book of the languages.*

Departament of education, Philipinas. (2019). *learning resources.* www.lrmds.deped.gov.ph

Dryden, S. T. (2021). Foreign language anxiety and translanguaging as an emotional safe space: Migrant English as a foreign language learners in Australia. System. *101*\.

Elearning., E. (2028 de enero de 2022). *Editorial Elearning.* https://editorialelearning.com/blog/que-es-el-mobile-learning/

Ergasheva, M. M. (2024). INNOVATIVE APPROACHES TO LANGUAGE TEACHING: CULTIVATING CREATIVITY IN EDUCATION. Academic research in educational sciences. *5*(1), 367-370.

Fitria, T. N. (2023). Augmented reality (AR) and virtual reality (VR) technology in education: Media of teaching and learning: A review. International Journal of Computer and Information System (IJCIS). *4*(1), 14-25. https://doi.org/http://ijcis.net/index.php/ijcis/article/view/102

Fradkin, I. N. (2021). Theory-driven analysis of natural language processing measures of thought disorder using generative language modeling. Biological Psychiatry: Cognitive Neuroscience and Neuroimaging. *8*(10), 1013-1023. https://doi.org/https://doi.org/10.1016/j.bpsc.2023.05.005

Garzón, J. (2021). An overview of twenty-five years of augmented reality in education. Multimodal Technologies and Interaction. *5*(7), 37. https://doi.org/https://doi.org/10.3390/mti5070037

Geline, E. E. (2024). Linguistic precision in large language models with adaptive disambiguation and efficient monte carlo tree search for contextual clarity.

Hashimoto, B. J. (2021). . Is frequency enough?: The frequency model in vocabulary size testing. Language Assessment Quarterly. *18*(2), 171-187. https://doi.org/https://doi.org/10.1080/15434303.2020.1860058

Hestiana, M. &. (2022). THE ROLE OF MOVIE SUBTITLES TO IMPROVE STUDENTS'VOCABULARY. Journal of English Language Teaching and Learning. *3*(1), 46-53.

Hestiana, M. &. (2022). THE ROLE OF MOVIE SUBTITLES TO IMPROVE STUDENTS'VOCABULARY. Journal of English Language Teaching and Learning. *3*(1), 46-53.

Holes, C. (2021). Dialect, Culture, and Society in Eastern Arabia, Volume 1 Glossary . *51*.

Hursen, C. (2021). The effect of problem-based learning method supported by web 2.0 tools on academic achievement and critical thinking skills in teacher education. Technology, Knowledge and Learning. *26*(3), 515-533. https://doi.org/https://link.springer.com/article/10.1007/s10758-020-09458-2

Johnson, R. B. (2024). Educational research: Quantitative, qualitative, and mixed approaches. Sage publications.

Jomaa, N. A. (2025). The Use of Artificial Intelligence (AI) in Teaching English Vocabulary in Oman: Perspectives, Teaching Practices, and Challenges. World. *15*(3).

Journal Imse. (25 de July de 2023). *Journal Imse*. https://journal.imse.com/what-is-vocabulary/

Kamble, A. G. (2021). Learners' perception of the transition to instructor-led online learning environments: Facilitators and barriers during the COVID-19 pandemic. International Review of Research in Open and Distributed Learning. *22*(1), 199-215.

Karakoç Öztürk, B. (2021). Digital reading and the concept of ebook: Metaphorical analysis of preservice teachers' perceptions regarding the concept of ebook. *11*(2). https://doi.org/https://doi.org/10.1177/215824402110168

Kazakova, L. N. (2022). Developing the motivation to enrich active vocabulary in the process of teaching English to students majoring in Economics. Samara Journal of Science. *11*(4), 272-278. https://doi.org/https://doi.org/10.55355/snv2022114307

Kessler, M. L. (2023). Mobile-assisted language learning with Babbel and Duolingo: comparing L2 learning gains and user experience. Computer Assisted Language Learning. 1-25.

https://doi.org/https://doi.org/10.1080/09588221.2023.2215294

Kotiash, I. S. (2022). Possibilities of Using Multimedia Technologies in Education. International Journal of Computer Science and Network Security. *22*(6), 727-732.

Kovbasko, Y. (2021). Grammatical Approaches to Prepositions, Adverbs, Conjunctions, and Particles in Late Modern English. Kalbų Studijos. (38), 99-114. https://doi.org/https://www.ceeol.com/search/article-detail?id=1002993

Lei, X. F. (2022). The impact of mobile-assisted language learning on English as a foreign language learners' vocabulary learning attitudes and self-regulatory capacity. Frontiers in psychology. *13*.

Lessard-Clouston, M. (2018). Second Language Acquisition Applied to English Language Teaching. In M. Lessard-Clouston, *Second Language Acquisition Applied to English Language Teaching* (p. 5). Virginia: TESOL International Association.

Le-Thi, D. D.-S. (2022). Increasing the effectiveness of teaching L2 formulaic sequences through motivational strategies and mental imagery: A classroom experiment. Language Teaching Research. *26*(6), 1202-1230. https://doi.org/https://doi.org/10.1177/1362168820913125

Li et al. (2022). Mobile-assisted vocabulary learning: Investigating receptive and productive vocabulary knowledge of Chinese EFL learners. ReCALL. *34*(1), 66-80. https://doi.org/https://doi.org/10.1017/S0958344021000161

Li, F. F. (2022). Mobile-assisted language learning in Chinese higher education context: A systematic review from the perspective of the situated learning theory. Education and Information Technologies. *27*(7), 9665-9688. https://doi.org/https://link.springer.com/article/10.1007/s10639-022-11025-4

Little, D. (2022). Language learner autonomy: Rethinking language teaching. Language Teaching. *55*(1), 64-73. https://doi.org/https://doi.org/10.1017/S0261444820000488

Liu, Y. (2021). The role of vocabulary knowledge in second language speaking fluency: A mixed-methods study. The Acquisition of Chinese as a Second Language Pronunciation: Segments and Prosody. 305-328.

Madaminova, M. S. (2024). Building Fluency And Comprehension: Effective Techniques For Reading Instruction. Academic research in educational sciences. *5*(1), 748-752.

Maharjan, P. A.-K. (2022). An enhanced algorithm for improving real-time video transmission for

tele-training education. Multimedia Tools and Applications. *81*(6). https://doi.org/https://link.springer.com/article/10.1007/s11042-022-12045-5

Maisarah, S. (2021). The Meaning Of Denotation And Connotation In The Jakarta Post Newspaper (Doctoral dissertation.

Marougkas, A. T. (2023). Virtual reality in education: a review of learning theories, approaches and methodologies for the last decade. *12*(12), 2832. https://doi.org/ https://doi.org/10.3390/electronics12132832

McDonald, J. A. (2023). Learning semantic and thematic vocabulary clusters through embedded instruction: effects on very young English learners' vocabulary acquisition and retention. Applied Linguistics Review,. *14*(5), 1129-1156. https://doi.org/https://doi.org/10.1515/applirev-2020-0102

Monje Gualpa, M. C. (2022). M-learning (duolingo app) and the listening skills (Bachelor's thesis, Universidad Técnica de Ambato-Facultad de Ciencias Humanas y de la Educación-Carrera Pedagogía de los Idiomas Nacionales y Extranjeros).

Muallim, M. M. (2024). Exploring Trends of Web-Based Vocabulary Learning Apps in Indonesian Research: A Systematic Literature Review. IDEAS: Journal on English Language Teaching and Learning, Linguistics and Literature. *12*(1), 2124-2140.

Munir, E. &. (2024). Study of pragmatic analysis of literature on the development of ELT students' receptive and productive skills: A case of North Cyprus. Heliyon. *10*(21).

Mustaeva, G. S. (2022). Features of professional vocabulary and its difference from terms. In AIP Conference Proceedings. *2432*(1).

Naseem, A. N. (2022). The outcomes of a mobile just-in-time-learning intervention for teaching bioethics in Pakistan. BMC Medical Education. *22*(1), 674. https://doi.org/https://link.springer.com/article/10.1186/s12909-022-03698-9

Nikolayev, M. R. (2021). Review of feedback in edutainment games for preschoolers in the USA. Journal of Children and Media. *15*(3), 358-375. https://doi.org/https://doi.org/10.1080/17482798.2020.1815227

Nivethitha, V. R. (2024). Cross-Device Control and Interaction for Workstations using Mobile Devices. In 2024 International Conference on Electronic Systems and Intelligent Computing. 180-184.

Ogu, D. C. (2019). *the Use of English and Communication Skills for Tertiary Education.*

Ozdemir, E. K. (2022). Game-based learning in undergraduate nursing education: A systematic review of mixed-method studies. Nurse education in practice. *62*.

Portela, F. (2022). Towards an engaging and gamified online learning environment—A real CaseStudy. Information. *13*(2), 80. https://doi.org/https://www.mdpi.com/2078-2489/13/2/80

Putri, E. &. (2022). An impact of the use Instagram application towards students vocabulary. Pustakailmu. *2*(2), 1-10. https://doi.org/http://pustakailmu.id/index.php/pustakailmu/article/view/88

Qashou, A. (2021). Influencing factors in M-learning adoption in higher education. Education and information technologies. *26*(2), 1755-1785. https://doi.org/https://link.springer.com/article/10.1007/s10639-020-10323-z

Qiao, G. X. (2023). The impact of volunteer interaction on the tourism experience of people with visual impairment based on a mixed approach. Current Issues in Tourism. *26*(7), 2794-2811. https://doi.org/https://doi.org/10.1080/13683500.2022.2098093

Rahmani, A. A. (2022). Using Mobile devices for vocabulary learning outside the classroom: improving the English as foreign language learners' knowledge of high-frequency words. Frontiers in Psychology. *13*. https://doi.org/https://www.frontiersin.org/journals/psychology/articles/10.3389/fpsyg.2022.899885/full

Raimjonova, R. (2024). TEACHING TECHNOLOGIES FOR ENGLISH VOCABULARY TO SCHOOL STUDENTS. In INTERNATIONAL CONFERENCE ON MEDICINE, SCIENCE, AND EDUCATION . *1*(12), 50-54. https://doi.org/https://universalconference.us/universalconference/index.php/icmse/article/view/3512

Rehbein, F. K. (2021). Contribution of game genre and structural game characteristics to the risk of problem gaming and gaming disorder: A systematic review. Current Addiction Reports. *8*(2), 263-281. https://doi.org/https://link.springer.com/article/10.1007/s40429-021-00367-7

Rinaldi, R. W. (2022). Google form as an online assessment tool to improve the students' vocabulary mastery. *3*(1), 56-71. https://doi.org/https://doi.org/10.35961/salee.v3i1.307

Robles-García, P. (2021). Receptive vocabulary knowledge in L2 learners of Spanish: The role of

high-frequency words. Foreign Language Annals. *55*(4), 963-984.

Rodríguez-Arce, J. V.-C.-P.-G. (2023). Comparison of Learning Content Representations to Improve L2 Vocabulary Acquisition Using m-learning. SAGE Open. *13*(4).

Rouabhia, R. &. (2024). Using Duolingo in teaching and learning vocabulary: A systematic review. Indonesian Journal of English Language Studies (IJELS). *10*(2), 91-107.

Ruggerio, C. A. (2021). Sustainability and sustainable development: A review of principles and definitions. Science of the Total Environment. 786.

Saidjonovna, V. T. (2023). Development of Reading Skill In B1 Level Students. Qo ‘Qon Universiteti Xabarnomasi.

Saleh, A. M. (2022). The effect of using educational games as a tool in teaching English vocabulary to arab young children: A quasi-experimental study in a kindergarten school in Saudi Arabi. *12*(1).

Sanchez, E. (2018). *la mediacion Tecnologica en la enseñanza.*

Sarabia, T. V. (2023). Activity–Based Learning Approach to develop the Oral Communicative Competence in Primary School Students (Master's thesis, Ecuador. Latacunga. Universidad Técnica de Cotopaxi (UTC)).

Sasan, J. M. (2022). Enhancing English proficiency for Filipinos through a multimedia approach based on constructivist learning theory: a review. Science and Education. *3*(8), 45-58.

Schoonenboom, J. (2023). The fundamental difference between qualitative and quantitative data in mixed methods research. In Forum Qualitative Sozialforschung/Forum: Qualitative Social Research. *24*(1).

Senaldi, M. S. (2022). Determining the importance of frequency and contextual diversity in the lexical organization of multiword expressions. Canadian Journal of Experimental Psychology/Revue canadienne de psychologie expérimentale. *76*(2), 87. https://doi.org/https://psycnet.apa.org/buy/2022-29741-001

Setiadi, P. M. (2021). Synchronous or asynchronous? Various online learning platforms studied in Indonesia 2015-2020. In Journal of Physics: Conference Series . *1987*(1). https://doi.org/10.1088/1742-6596/1987/1/012016

Seyoum, W. M. (2022). STUDENTS’ATTITUDES AND PROBLEMS ON QUESTION-BASED ARGUMENTATIVE ESSAY WRITING INSTRUCTION. Journal of English Language

Teaching and Learning. *58-63., 3*(2).

Sha, J. Z. (2025). VEEF-Multi-LLM: Effective Vocabulary Expansion and Parameter Efficient Finetuning Towards Multilingual Large Language Models. In Proceedings of the 31st International Conference on Computational Linguistics . 7963-7981. https://doi.org/https://aclanthology.org/2025.coling-main.533/

Singh, A. S. (2021). Adoption intention and effectiveness of digital collaboration platforms for online learning: the Indian students' perspective. Interactive Technology and Smart Education. *18*(4), 493-514. https://doi.org/1741-5659

Siregar, I. (2022). Language response as a cultural element to globalization. Lakhomi Journal Scientific Journal of Culture. *3*(1).

Stoeckel, T. M. (2021). Limitations of size and levels tests of written receptive vocabulary knowledge. Studies in Second Language Acquisition. *43*(1), 181-203. https://doi.org/ https://doi.org/10.1017/S027226312000025X

Sutrisna, G. (2022). Vocabulary Acquisition in EFL: A Literature Review of Innovative Vocabulary Teaching Strategies. Yavana Bhasha: Journal of English Language Education. *4*(1), 8-17.

Tenecota Cando, E. A. (2022). M-Learning (Kahoot App) and vocabulary (Bachelor's thesis, Universidad Técnica de Ambato-Facultad de Ciencias Humanas y de la Educación-Maestría en Pedagogía de los Idiomas Nacionales y Extranjeros Mención Inglés).

Tiara, A. D. (2021). The studentsperception about use of duolingo application for improving english vocabulary. International Journal of Education, Information Technology, and Others. *4*(4), 690-701.

Tlili, A. H. (2021). A smart collaborative educational game with learning analytics to support English vocabulary teaching. *6*(6), 215-224. https://doi.org/https://dialnet.unirioja.es/servlet/articulo?codigo=9033446

University of Maryland. (s.f.). *Introduction to Teaching and Learning*. https://cf.son.umaryland.edu/nurs787/module1/subtopic4.htm#:~:text=The%20teaching%20learning%20process%2C%20or,outcomes%20of%20teaching%20and%20learning.

Vocabulary. (2019). *Vocabulary*. https://www.vocabulary.com/dictionary/vocabulary

Waluyo, B. &. (2021). The impact of gamified vocabulary learning using Quizlet on low-proficiency students. Computer-Assisted Language Learning. *22*(1), 158-179.

Winaldo, M. D. (2022). Influence of Video Games on the Acquisition of the English Language. Journal of English Language Teaching and Learning. *3*(2), 21-26.

Wu, J. (2021). The enhanced permeability and retention (EPR) effect: the significance of the concept and methods to enhance its application. Journal of personalized medicine. *11*(8), 771. https://doi.org/https://doi.org/10.3390/jpm11080771'

Wulantari, N. P. (2023). The role of gamification in English language teaching: A literature review. Journal on Education. *6*(1), 2847-2856. https://doi.org/https://jonedu.org/index.php/joe/article/view/3328

Yasar Yuzlu, M. &. (2022). Translanguaging in the development of EFL learners' foreign language skills in Turkish context. Innovation in Language Learning and Teaching. *16*(2), 176-190. https://doi.org/https://doi.org/10.1080/17501229.2021.1892698

Yudha, H. T. (2021). The analysis of game usage for senior high school students to improve their vocabulary mastery. Journal of English Language Teaching and Learning. *2*(2), 74-79. https://doi.org/ https://doi.org/10.33365/jeltl.v2i2.1329

Zarfsaz, E. &. (2021). The Impact of Different Context Levels on Vocabulary Learning and Retention. Shanlax International Journal of Education. *9*(4), 24-34. https://doi.org/https://eric.ed.gov/?id=EJ1309657

Zhang, S. &. (2022). The relationship between vocabulary knowledge and L2 reading/listening comprehension: A meta-analysis. Language Teaching Research. *26*(4), 696-725. https://doi.org/https://doi.org/10.1177/136216882091399

ANNEX

Annex 1 OBSERVATION SHEET

Reacher's name: Leidy Loor **Class:** First year of high school **Date:**_____

Objective: To observe and assess the development of vocabulary skills in A1-level English learners in their English classes, focusing on their ability to recognize, understand, remember, pronounce, spell, and use new vocabulary in spoken and written contexts.

#	Observation Criteria	Yes (✓)	No (✗)	Comments
1	The student correctly understands the meaning of new words.	☐	☐	
2	The students can recall previously learned vocabulary.	☐	☐	
3	The students pronounce new vocabulary accurately.	☐	☐	
4	The students spell new vocabulary words correctly.	☐	☐	
5	The students use new vocabulary in simple spoken sentences.	☐	☐	
6	The students use new vocabulary in simple written sentences.	☐	☐	
7	The students differentiate between similar words or synonyms.	☐	☐	
8	The students understand and respond correctly to vocabulary-based questions.	☐	☐	
9	Students have a wide vocabulary.	☐	☐	
10	Students use M-learning to learn new words in their classes.	☐	☐	

Annex 2 PRE AND POST-TEST

Objective: To assess the development of vocabulary skills using M-learning by comparing students' vocabulary proficiency before and after its implementation.

Time: 25 minutes

Questions: 25 items

Instructions: You need to write all answers on your answer paper. Do not write on this question paper.

1. **Write the letter (A-K) of the word that is most similar in meaning to a word on the left (1-5). Use each word once only. Write your answers (A-K) on your answer paper. You will not need five of the words (A-K). The answer to question 0 is given on your answer paper as an example (L).**

0. create	A train
1. choose	B look after
2. close	C make
3. improve	D decide
4. care	E take
5. practise	F shut
	G propose
	H believe
	J develop
	K worry
	L make

2. **Finish each sentence (6-10) using a word from the list (A-K). Use each word once only. Write your answers (A-K) on your answer paper. You will not need five of the words (A-K).**

6. To oppose someone is to...
7. To teach someone is to...
8. To accept something is to...
9. To get something is to...
10. To pay someone is to...

A. concern
B. challenge
C. instruct
D. appear
E. worry
F. obtain
G. wish
H. compensate
J. assume
K. approve

3. **Write the letter of the word on the right (A-K) that matches the definition on the left (11-15). Use each word once only. Write your answers (A-K) on your answer paper. You will not need five of the words (A-K).**

11. Wanting to know or learn something.
12. Not natural or real.
13. Not clear and difficult to understand or see.
14. Having a flat, even surface.
15. Having a lot of strong emotion

A artificial
B brave
C crucial
D curious
E fierce
F lazy
G obscure
H peculiar
J smooth
K emotional

4. Finish each sentence (16-20) using a word from the list (A-K). Use each word once only. Write your answers (A-K) on your answer paper. You will not need five of the words (A-K).

A. atmosphere
B. canteen
C. ceiling
D. corridor
E. discipline
F. envelope
G. fringe
H. hedge
J. museum
K. wardrobe

16. He had to walk down a long dark _____ to get to his room.

17. The teacher should maintain _____ in the classroom to make the lesson effective.

18. She opened the _____ and took a coat out of it.

19. You should cut your _____ regularly otherwise your hair will get in your eyes.

20. The local _____ has an exhibit about the history of this area.

5. Write the letter of the word on the right (A-K) that is most often used with a word on the left (21-25). Use each word once only. Write your answers (A-K) on your answer paper. You will not need five of the words (A-K).

21. abstract
22. athletics
23. congested
24. frantic
25. housework

A. clean
B. club
C. efforts
D. food
E. friends
F. painting
G. roads
H. speed
J. status
K. tasks

Annex 3 Answer sheet

Vocabulary section

Student's name: _____

Level: _____

Date: _____

Instruction: Write in this section your answers. Pay attention to the numbers for writing your answers.

Vocabulary – Answer Sheet					
Statement's number	**Answer**	**Statement's number**	**Answer**	**Statement's number**	**Answer**
0	L	**9**		**18**	
1		**10**		**19**	
2		**11**		**20**	
3		**12**		**21**	
4		**13**		**22**	
5		**14**		**23**	
6		**15**		**24**	
7		**16**		**25**	
8		**17**		**Total**	