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DIGITAL FLASHCARDS AND VOCABULARY LEARNING

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CERTIFY:

I, Mg. Alba Paulina Hernandez Freire holder of the I.D No 1803691029, in my capacity as supervisor of the research work on the topic: “DIGITAL FLASHCARDS AND VOCABULARY LEARNING” investigated by Miss Evelyn Gissela Unaicho Guala with I.D No. 180513852-4, confirm that this research report meets the technical, scientific and regulatory requirements, so the presentation of it is authorized to the corresponding organism in order to be submitted for evaluation by the Qualifying Commission appointed by the Directors Board.

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I declare this undergraduate research work entitled “Digital flashcards and vocabulary learning” is the result of the author’s investigation and has reached the conclusions and recommendations described in the present study.

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DEDICATION

TO:

To God, who has been my guide and strength, and whose hand of faithfulness and love has been with me until today.

My parents, Juan, and María, who with their love, patience, and effort have helped and supported me to fulfill this great dream, thank you for teaching me the example of effort and courage and told me that not to fear adversity because God is with me always.

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Finally, I would like to dedicate this thesis to my partner, for supporting me when I needed it most, for extending his hand in difficult moments, and for the love he gave me every day. Thank you very much.

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RESUMEN

En la actualidad, el proceso de enseñanza y aprendizaje de una lengua extranjera es un reto diario. El avance de la tecnología permite a los profesores utilizar recursos digitales innovadores en el aula, lo cual facilita el proceso de aprendizaje de los estudiantes. Por lo tanto, este trabajo de investigación analizó el uso de flashcards digitales en el aprendizaje de vocabulario, para lograr esta investigación, la población fue un grupo de 24 estudiantes del séptimo grado paralelo "A" de la Unidad Educativa "Oxford" ubicado en Salcedo en la provincia de Cotopaxi. Así como también, se utilizó un tipo de investigación no experimental con un nivel de investigación correlacional y transversal con un enfoque cuantitativo. Para tal efecto, se utilizó una encuesta verificada, de acuerdo con la validación del Alfa de Cronbach que arrojó una confiabilidad de 0.805 con una muestra de 10 estudiantes que fueron seleccionados aleatoriamente, luego se aplicó la encuesta validada a la población total de 24 estudiantes, entre ellos 10 hombres y 14 mujeres. Para analizar la percepción de los estudiantes en relación con el uso de flashcards digitales en el proceso de aprendizaje. Por otro lado, para examinar el nivel de uso del vocabulario se aplicó la prueba de vocabulario A1 de la Universidad de Cambridge, los resultados mostraron que los estudiantes tenían un nivel bajo de vocabulario de acuerdo con la prueba aplicada. Adicionalmente, la investigación sirvió para demostrar que el uso de flashcards digitales en el aprendizaje contribuye al desarrollo del vocabulario en lengua inglesa, además las flashcards digitales son una herramienta tecnológica eficaz.

Palabras clave: competencias, flashcards, lengua extranjera, proceso de enseñanza y aprendizaje, vocabulario.

ABSTRACT

Currently, the teaching and learning process of a foreign language is a challenge every day. The advancement of technology allows teachers to use innovative digital resources in the classroom, which facilitates the learning process for students. Therefore, this research work analyzed the use of digital flashcards in vocabulary learning, in order to accomplish this research, the population was a group of 24 students from the seventh grade "A" at "Oxford" high school located in Salcedo in Cotopaxi province. As well as, using a correlational and cross-sectional research type, also non-experimental research. As a matter of fact, a verified survey was used, according to the validation of Cronbach's Alpha which gave a reliability of 0.805 with a sample of 10 students who were randomly selected, then the validated survey was applied to the total population of 24 students, including 10 males and 14 females. to analyze the perception of students related to the use of digital flashcards in the learning process. On the other hand, to examine the level of use of vocabulary was applied the A1 vocabulary test from Cambridge University which shows that students have a low level of vocabulary according to the vocabulary test. Additionally, the research served to demonstrate that the use of digital flashcards in the learning contributes to the development of English language vocabulary, also digital flashcards are an effective technological tool.

Keywords: flashcards, foreign language, skills, teaching and learning process, vocabulary.

CHAPTER I

THEORETICAL FRAMEWORK

1.1 Research Background

This research work includes reviews from previous research paper such as academic papers, theses, and academic journals. All these documents were taken from the internet, and journals were obtained specifically from academic google. Besides, the information was taken from different repositories.

The academic paper elaborated by Sage et al., (2020), analyzed the growing literature examining the use of digital flashcards and their improvements over traditional paper flashcards by offering multimedia, special tempo features, and more. Digital flashcards can also be embedded in apps with related functionality such as quizzes. In fact, this research utilized the qualitative and quantitative approach in order to explore the learners' perceptions by laptops and smartphones in the learning process, also the authors conducted their research at exploratory level to analyze the survey data through themes across responses. Finally, the authors found that students with lower English proficiency benefited the most from digital vocabulary learning compared to paper flashcards.

Xodabande (2022) examined the impact of using digital flashcards (DFs) and mobile devices on teaching academic vocabulary learning, in the study there was at least 361 basic academic terms commonly used in psychology was taught to students using various teaching materials, and the learning outcomes were compared in three different groups. However, the participants in this research work were 86 undergraduate students majoring in psychology in two experimental group and one control group. Therefore, the participants in experimental group were 31, who used the digital flashcards (DF) application for example, NAWL builder then, in the experimental group were 30 participants used commonly materials such as paper, cards and worksheets and control group used a list of key words and their definitions. In addition, the results of the study found that using the digital flashcards increased students' motivation to learn subject-specific academic vocabulary.

Oxford and Crookall (2018) investigated that aimed to make a critical analysis of techniques that can be used for vocabulary acquisition. This study was developed through

the participation of 60 students from Alabama University. After the development of three classes using three different vocabulary teaching techniques which were, the use of flashcards, the use of a dictionary and the grouping of words, the researchers used a mixed approach to develop their research. Qualitative because they conducted an interview to determine with which vocabulary teaching technique the students felt greater affinity and quantitative because the results obtained were represented on statistical tables. Consequently, having collected and analyzed the data, researchers obtained as a result that the use of flashcards offers better results in learning vocabulary because students see this technique as an innovative, creative, and accessible way to learn a new language. The authors concluded that the use of flashcards has become a very popular tool among today's students.

Ashcroft et al., (2018) examined the effect of using digital flashcards on L2 vocabulary learning versus using paper flashcards at different levels of English proficiency. Moreover, flashcards are widely known as one of the most efficient vocabulary-learning tools. In this study, the authors used a mixed methods experimental design, also English proficiency consist about three groups: beginner, intermediate and advanced. The participants were 139 native Japanese students, participants received both materials as digital flashcards and paper flashcards. Finally, the results of this study showed that Japanese university students with low English proficiency had a significantly higher increase in vocabulary learning using digital flashcards rather than using paper flashcards, and students with high proficiency performance equally well in both learning methods.

The paper elaborated by Yılmaz (2020), explained the impact and examine student perceptions through digital flashcards and how digital flashcards facilitate the learning of technical vocabulary. This study carried out with a total of 57 pharmacy students. Although, data were collected using a pre-test survey, two vocabulary tests, and a post-test survey. Furthermore, the results indicated that the student learned more technical vocabulary using digital flashcards, also they increase their perception of using digital flashcards to learn technical vocabulary was positive. In conclusion, the authors concluded that teacher should create digital flashcards lead to better learning of subject vocabulary.

Phelps (2018) aimed to understand the enhancing exam prep with customized digital flashcards college by courses specifically that contains basic information, it must be

mastered before the course, because it could be more difficult concepts and applications can be learned. Even though, many students have difficulty learning facts, terms, or basic concepts, so flashcards are good educational tool for learning terms and concepts. There are many tools to learn vocabulary for instance, software programs and electronic cards, meanwhile the flashcards paper evaluates the benefits of online flashcards in detail. However, for this research the participants were undergraduate engineering classes used digital flashcards developed with commercial software. Consequently, the research showed that students expressed big interest by using flashcards in their classes and expressed a willingness to create new flashcards for future classes and flashcards would be helpful the use in the learning process.

The study researched by Tang (2018), had the main aim evaluate the receptivity between students using paper flashcards (PF) in combination with the three types of flashcards such as VLS (Drop, Associative, Oral Rehearsal) students using digital flashcards (DF) was to examine whether there was a significant difference in improvement of both targeted productive L2 vocabulary. In addition, researchers examined learners' opinions to determine if they preferred one specific teaching tools. However, the participants for this research were in total of 52 of English as a Foreign Language (EFL) students from universities in Japan participated, the experiment took 12 weeks to complete. Likewise, the participants were divided into two equal groups: the PF group, which used PFs (n =26), and the DF group, which used DFs (n = 26), also the author used a quantitative method to analyze data. Therefore, the results showed that both groups achieved significant improvement in receptive and production vocabulary meanwhile, the difference in gain was not significant in the experimental group.

The paper done by Agung (2021), aimed to describe the use of flashcard in English vocabulary learning. The method used in this study is a literature study. Therefore, the Computer-based Flashcard Program (CFP) is a program designed to give the experience of implementing flashcards to communicate with the logical arrangement of cards. This study was applied in a library where the author gave a pre-test to learners in the first meeting in which the author used CFP (Computer-based Flashcard Program) to improve students' vocabulary. Moreover, it was developed in 5 sessions, in the last session the author applied the post-test, also pre-test and post-test scores were calculated to determine students' comprehension and vocabulary skills using the CFP. In addition, test was about in 6 units of the first 504 words. The test was about 50 questions and participants had

around 35 minutes to answer. Consequently, the results showed a tendency to use flashcard strategies in elementary and high school level English vocabulary learning, and an interest in using different pictures and different colored flashcards.

Freng (2020) stated that acquiring English vocabulary can be a daunting task for non-native English speakers and most linguistics believe that the key to mastering a second language is large amounts of comprehensible input. However, the teenagers and adults learners often cite a lack of vocabulary as a major obstacle to improving their English proficiency, this study show the effectiveness of extensive reading improving English proficiency, specifically in vocabulary, also it has been documented in theoretical and empirical evidence. In summary, this thesis examined the evidence using extensive reading, vocabulary review activities, and spatial recall exercises to improve English vocabulary learning.

The article done by Hung (2018) aimed to determine whether and how digital flashcards can be integrated into university to facilitate vocabulary learning in English learners. In contrast, targeted learning of vocabulary accelerates learners' vocabulary development processes through targeted repetition or memorization strategies that can be completed individually in a short period of time. Hence, this research was conducted at a public university in Taiwan, where students learn English as a foreign language. Also, the participants in this study were 75 students were drawn from three intact classes of first-year English majors. In fact, students range in age from 18 to 20 years old. However, this study included three classroom settings defined by different task designs for using flashcards during self-study sessions in a given classroom. These include: voluntary practice format, pair exchange format and a group format, also the duration of the study was 9 weeks. Finally, vocabulary learning by using flashcards is seen more as an individual task in this study, this intentional learning technique is more collaborative, using sound lesson design that allows for better peer support. It was shown to be reusable for tasks.

Independent Variable

Information And Communication Technologies (ICT)

Since the early 1990s, schools have been on the frontlines of the ICT revolution. The new technologies of the digital age have presented school systems and educators with a variety of resources and tools that could contribute to the education system. UNESCO

(2002), mentions that ICT has also become integral to the teaching-learning interaction, through such approaches as replacing boards with interactive digital whiteboards, using students' own smartphones or other devices for learning during class time. However, learning and teaching no longer depend exclusively on printed materials, there are abundant digital resources on the Internet, and knowledge can be acquired through video clips, audio sounds, visual presentation and so on.

Furthermore, the computer technologies and other aspects of digital culture have changed the ways people live, work, play, and learn, impacting the construction and distribution of knowledge and power around the world, also ICT helps in expanding access to education through faster information distribution and availability anytime and anywhere

Some examples of these technologies are digital boards, blogs, web pages, internet, among others. These new communication channels have significant characteristics such as:

- Great capacity to store huge amounts of information. It will change the traditional role of the teacher as a source of information to a supervisor in the teaching learning processes with his/her students.
- The new forms of communication between individuals. Communication and telematic networks enable the exchange of information between computers in an efficient and transparent way, breaking the spatial and temporal obstacles that, were unthinkable in other times.
- The ability to present not only textual information, but also other systems of symbols. Today deeply rooted in everyday life, such as audiovisual languages, multimedia, hypertext, etc. (Hilbert, 2019)

Teaching Tools and Recourses

Currently, education system continues to navigate deep challenges. Persistent stress, anxiety, trauma, and other mental health concerns, escalating behavior issues, teacher recruitment and retention, learning gaps, and ever-present safety concerns drive the need for real change. For that reason, it is important to use of didactic tools and resources to support the teacher's work and it generates pedagogical situations that allow students to learn in a meaningful way and an adequate development of learning.

Vygotsky (1934) points out that acknowledged the roles that curiosity and active involvement play in learning but placed greater emphasis on society and culture. Hence, in 1850, the first teaching tool was created, it is the flannelgraph as a visual teaching tool that has images and letters, which can be used in various ways, such as telling stories, timeline or explaining the procedure of an experiment. Moreover, Skinner 1962 was the pioneer in working on different principles and techniques to improve the educational quality, the tools and resources can collaborate with the acquisition, elaboration, and transmission of knowledge, because these are diverse and adapt to different types of classes. Pulverness and Williams (2011) states that teaching resources are made up of:

- Textbook: teachers' book, students' workbook
- Boards: it is used to draw pictures, present vocabulary, and grammar build up ideas, write answers, etc.
- Technological equipment: projector, computer, web material, CD- Rooms, CD-Player, language laboratory
- Realia: flashcards, puppets, charts, etc.

However, the teaching resources are materials that facilitate the teacher's work, which helps them to explain better so the knowledge reaches the student in a clearer way, for example; videos, books, graphics, images, activities, movies, and any element or resource that is used in the teaching process, the teaching resources are a guide for learning and are a key element for motivation and interest, the proper use of these resources will help to innovate education in the teaching of the English language.

Digital Flashcards

Sebastian Leitner in 1805 created flashcards as a review method in the study based on repetitions through images and words or concepts. Then, in 1923, the use of flashcards was so important that the term first appeared in the Oxford English Dictionary. As a matter of fact, flashcards traditionally have been defined as a 'card with words, shown briefly to a child by a teacher as an aid to learning Hermida (2020). Moreover, flashcards are commonly created and shared amongst people seeking to test their knowledge and memory, the process of construction of the flashcards promotes learning by doing, critical thinking and synthesis of information.

Meanwhile, digital flashcards provide a further opportunity to revisit old learning activities from a new, and potentially exciting perspective (Ramsden, 2019). Likewise, many web 2.0 technologies, digital flashcards allow students individually or collaboratively build a range of artifacts, or simply use those developed by others in different learning contexts. In addition, students use digital flashcards called computer flashcards, electronic flashcards, or virtual flashcards, digital flashcards duplicate the functions of paper flashcards (Glotzbach, 2019).

In addition, digital flashcards are a very effective method of self-assessment, and at the same time the digital flashcards help to make learning easier also digital flashcards help to reinforce learning and easily recall previous information. Digital flashcards are didactic resources that provide a great contribution to education, especially learning a foreign language, since, with its variety of pedagogical activities, it has become an ideal resource for teachers.

Types of Digital Flashcards

Flashcards are very useful for learners of all age groups even from 6 months old baby. There are four types of digital flashcards (Jha, 2022).

- **Classic or traditional digital flashcards:** This is the digital version of the conventional flashcard that we know its operation consists of a question that becomes an answer as soon as you press it.
- **Image and text:** It is about on one side the image, on the other side the content, meaning or explanation, this is a good tool for students who have visual learning style.
- **Text and Video:** Digital flashcards can also be combined with a text and video; this serves to reinforce the teaching and avoid teaching in a monotonous way.
- **Interactive:** It contains two sides, one side has an explanation about topic, on the other side a small activity or game that was taught previously, this type of digital flashcards helps students to be active during the learning process (Jha, 2022).

Importance of using the digital flashcards in the learning process

It is indispensable to mention that using technological tools has advantages, which favors learning. Dutta (2021), mentions that by enhancing their memory, flashcards let

students quickly comprehend the study material, using these cards as a teaching tool it improves recall and information retention capabilities. Moreover, the digital flashcards are essential in the educational context due to synthesize the most important concepts and information that you have to study, and students will acquire knowledge by memorizing its content through the spaced review of the set of digital flashcards. However, by combining the text with other visual elements, it facilitates the retention of information and that makes students more productive in learning. Young (2021), says that the flashcards, especially in their digital incarnations, are some of the most powerful learning tools.

Meanwhile, the flashcards seek to facilitate the acquisition of knowledge and better long-term training because retention increases through the student's spaced study, with an efficient use of time then, digital flashcards favor the autonomous learning process of the student, who can advance at their time of their learning and organize themselves efficiently, such reasons it is important to use digital flashcards in the vocabulary learning.

Dependent Variable

English Language

The English language is one of the most varied languages with the longest history in its existence due to it evolved from a set of West Germanic Dialects. Coombe, Anderson, and Stephens (2020) mention that English was composed of Angles, Saxons, and Jutes Germanic dialects. This means that all its legacy has been evolving since its origins to be able to use this useful language. Thus, English as the international language around the globe, it is the mother tongue by around 320 million of native- speakers, whilst 200 million people speak English as second language.

By the way, a quality education system is one that provides equity, equal opportunities and access to all educational services, but in our country this concept is far away from reality. Barre at al., (2021) agree that Ecuador implemented some educational policies that are supposed to improve the quality of teaching. The teaching-learning of English has taken a big turn in the Ecuadorian educational system in the last two decades and several measures have been implemented. In this sense, international and standardized exams have become the means to accredit the proficiency of this foreign language of students and teachers of different educational levels

Furthermore, speaking English is an important tool for the personal development of people, which favors greater brain development, improving memory, concentration and multitasking skills. According to Oxford English Dictionary (2022), English language plays an essential role in our lives as it helps in communication. It is the main language for studying any subject all over the world. Moreover, English is important for students as it broadens their minds, develops emotional skills, improve the quality of life by providing job opportunities. English is used widely in the literature and media section to publish books, most of the writers write in the English language due to most readers know only the English language and they can describe their ideas best in the English language (Kustang, 2022).

In addition, English is not our native language, so that is the reason why many students feel hard to learn English skills effectively, but with regular practice and adopting the various techniques given above will help to learn English skills easily. Obviously, not only this, but one will also feel more confident when one can understand the English language and communicate with others without feeling hesitant.

Vocabulary Learning

Vocabulary learning is a crucial aspect of learning a second language. Jafarin and Shoari (2017), defines vocabulary as an element of language that links the four macro skills including listening, speaking, reading, and writing. This statement makes sense because the more words learners know, the more they will be able to use their productive and receptive skills. However, vocabulary plays an important role in oral language development and early literacy, and it is central to English language teaching because without sufficient vocabulary students cannot understand others or express their own ideas.

Wilkins (1972), who argued: “. . . While without grammar one can express very little, without vocabulary nothing can be transmitted”. In different 11 languages, even without the grammar, with some useful words and expressions, one can communicate. As students develop greater fluency and expression in English, the acquisition of productive vocabulary is important to further develop their communication skills. Likewise, vocabulary is a key factor in successful language acquisition and as the textbook is central in the teaching of English.

In the English language having a high level of vocabulary helps us to improve our linguistic competence, which is a major key in oral and written communication, and better understanding of reality. Restrepo (2014) mentions that “Vocabulary learning is the process acquiring building blocks in second language acquisition”. The impact that vocabulary learning has on the acquisition of a second language has been covered in an aspect that has gained recognition among researchers and people studied in the field. Nowadays, it is essential to see vocabulary learning as an indispensable factor for the correct development and acquisition of a language, since without prior knowledge of vocabulary, the speaker cannot make proper use of it.

Importance of vocabulary

Learn a new language is good but sometimes it is a problem when people do not understand some words. For that reason, learn vocabulary is important because without vocabulary nothing can be conveyed. Meanwhile, people need to use words to express themselves in the English language, most learners acknowledge the importance of vocabulary acquisition. Vocabulary is the body of words that make up a language (West, 2023). On the other hand, teachers should be concerned that teaching vocabulary is something new and different from student’s native language. They also must consider that teaching English for young learners is different from adults (Alqahtani, 2019).

The process of teaching vocabulary

Learning vocabulary is essential for successful second language use and plays an important role in the formation of complete spoken and written texts, additionally, English as a second language (ESL) and English as a foreign language (EFL) learning vocabulary items plays a vital role in all language skills (i.e., listening, speaking, reading, and writing) (Gutlohn, 2021). Brown (2007), established that “Strategies are specific methods of approaching a problem or task, modes of operation for achieving a particular end, planned designs for controlling and manipulating certain information” (p. 119).

In order to teach new vocabulary for students it necessary to follow these steps:

- **Sharing visuals.** Bring unfamiliar objects and animals into the classroom. Pictures provide a great visual connection, but nothing beats the real thing.
- **Describing things:** Teacher has to go beyond basic descriptions to introduce new adverbs and adjectives.

- **Speaking with synonyms:** Instead of calling an object by its common name or using basic adjectives, think of synonyms and bring them into the conversation.
- **Reading a variety of texts:** Reading an older text versus a newer text might help students discover words that are not used as frequently today but can still benefit their vocabulary (Lyon, 2021).

Meanwhile, there are a variety of methods that help to teacher to accomplish the objectives in the classroom, one of them is the visual strategies or visual cues that can be used to help students comprehend information, also it presents or illustrates the meaning and form of words in an attractive, significant, and motivating way, facilitating the teaching-learning of vocabulary. Additionally, this type of strategy contributes to the retention of the new lexicon by relating it to the oral or written form. Visual strategies often lend themselves to hands-on activities that it involves student interaction (Gairns & Redman, 1986). Some of these strategies such as images, flashcards, demonstration, provoke ideas (elicitation), use of real objects (realia) and videos.

1.2 Objectives

General Objective

To analyze the use of digital flashcards on vocabulary learning at “Oxford” High School.

Specific Objectives

To establish the importance using the digital flashcards in the vocabulary learning at “Oxford” High School.

To identify the level of use of digital flashcards in the learning process.

To determine the relationship between the use of digital flashcards and the level of vocabulary learning.

Description of the achievements of the objectives

First of all, to fulfill the primary objective it was necessary to research some authors who talked about digital flashcards to see their use and the importance that this fulfills in the process of vocabulary learning, on the other hand, there are several authors who emphasize the process of learning a new language and how important vocabulary is for the development of communicative competences.

Secondly, the following objective was achieved thanks to the validated survey applied to seventh grade "A" students at "Oxford "High School. The survey consisted of 11 questions about the level of use the digital flashcards that students used to learn vocabulary and develop other English language skills.

Finally, the last objective was fulfilled through the validated test from Cambridge University referring to vocabulary, and how students use it in the learning process, this instrument was applied to the students form seventh grade "A" students at "Oxford "High School.

CHAPTER II

METHODOLOGY

2.1 Materials

For the development of this research, it was necessary to use three types of resources such as human, economic, technological, and physical resources. First, the human resource involved 24 students from seventh grade "A" students at "Oxford "High School in the Salcedo city, also the researcher, the researcher's tutor help to accomplish the research work. In the same way, the principal and students from the school were significant help in fulfilling of this project.

However, in order to develop this research, the economic resource was fundamental in this work research, which involved the cost of the worksheets that was contains the validated survey and the vocabulary test, there were printed, also the cost of transportation to go to school to apply the instruments. In addition, the technological resources were helpful to accomplish with this research such as laptop, television, internet, and projector. Finally, the school supplies were necessary during the research work for example board, markets, and chairs.

2.2 Methods

Research approach

This study employed a quantitative approach because it was important to use a validated survey that they had to answer the questions according to their opinion or experience, also students had to complete the vocabulary test. Additionally, to analyze the data gathered, was essential to create tables with the total number of students.

Furthermore, to establish the relationship between digital flashcards and vocabulary learning the quantitative approach was helpful in the development of analysis, description, and interpretation of the information as the same way, it was the numerical part of the research with was represented through tables.

Field based research

Field research is defined as a process designed to collect new data from primary sources for a specific purpose. Likewise, the data obtained can be investigated by research is conducted in a natural setting (Enago, 2022) The following research was considered

field research because it was based mainly on collecting data directly from the place where the events happened, which were carried out without any type of manipulation or control the variables. That is why the investigation was carried out in a face-to-face modality.

Bibliographic research

Additionally, the investigative work had a bibliographic modality because the information presented was obtained from bibliographic sources such as books, academic papers, and theses, which were found on the internet. Asesio (2018) explains the bibliographic research as a series of activities aimed at locating and retrieving documents relating to a specific subject, also research funding is based on the reliability of the data collected, information collected in other ways, and subsequent analysis of what is found in the documents.

Bibliographic research conducts to gather and compile all the available information/data on the specific topic. Nishkala (2021) consider that the bibliographic research as an essential step before initiating any research study as it is an important procedure to obtain the necessary foundation for the planning and development.

Level of type of research

Analytical research

The analytical research was relevant in the investigation because the information needs to be analyzed variable by variable. The researcher must obtain the information or data in order to analyze the hypothesis according to the data collected (Alok, 2017). Analytical research was used to give significance to the material collected by the researcher during the investigation.

Correlational research

Hassan (2022) points out that correlational research is a type of research that examines the statistical relationship between two or more variables without manipulating them, which was taken as the basis for this research since its purpose was to analyze the use digital flashcards on vocabulary learning. Likewise, this type of research can be used to describe characteristics of the population that was involved in the research work, but not to determine cause-and-effect relationships between different variables (Cherry, 2022). In addition, this type of research was necessary to analyze the relationship between the use of digital flashcards and the vocabulary learning using the data collected.

Cross-sectional research

Thomas (2022) says that cross-sectional research is a type of research design in which you collect data from many different individuals at a single point in time. In cross-sectional research, the researcher observes variables without influencing them. However, cross-sectional study is a cheap and easy way to gather initial data and identify correlations of the variable.

Dermatol (2016) argued, the cross-sectional study design is a type of observational study design. In a cross-sectional study, the researcher measures the outcome and exposures in the study participants at the same time, which means that the studies observe a population at a single point in time, variables are recorded for each participant, so this determines that it is not an experimental study.

Instruments

In addition, to develop this research work was necessary to validate the survey using the Cronbach's alpha. To accomplish each objective was necessary to evaluate each one variable. First, to analyze the use of digital flashcards in the English context 11 questions were created and it had 5 answer options which were: always, often, sometimes, rarely, and never, it was created in order to give to the students the diversity to answer each question. Additionally, each question was based on the use of digital flashcards.

To validate the survey, it was necessary to introduce the instrument in the Cronbach's alpha program. The instrument was applied to a random part of the total population, which means 10 students were selected. All of this data were collected in order to make Cronbach's alpha validation. This validation shows 0.805 of the analysis which means that the survey could be applied to the population.

Moreover, for the development of the research, the population was important. In fact, the sample consisted of 24 students, which were 10 male students and 14 female students with ages ranging from 11 to 13 years old from the 7th grade "A" at "Oxford" high school.

Data collection procedure

In order to collect data, it was necessary to create a questionnaire to collect data according to students' opinions. Then, the researcher explains and introduces the topic and some information about the survey. Next, students answered the survey, and if there were any questions, they could ask the researcher. After that, the vocabulary level was analyzed through a vocabulary test. Finally, it was necessary to create tables to illustrate the information in a better way.

Population and sample

For the development of the research, the use of human resources was necessary. For that reason, 24 students from the “Oxford” High School of seventh “A” grade that were selected. Consequently, there was 10 men and 14 women, also the age of the students was from 11 to 13 years old. This school was selected because of the content of the research and these students learn about the topic during the research.

Table 1
Population sample

Genre		N	Minimum	Maximum	Percent
Male	Age	10	11	13	41,7%
Female	Age	14	11	13	58,3 %
Total		24			100 %

Note: Genre and age of the population sample.

Hypothesis

Null hypothesis

Students don't use the digital flashcards vocabulary learning in their learning process.

Alternative hypothesis

Students use the digital flashcards and vocabulary learning in their learning process.

Variable identification

Digital Flashcards (Independent variable)

Vocabulary Learning (Dependent variable)

CHAPTER III

RESULTS AND DISCUSSION

3.1 Analysis and discussion of the results

This chapter indicates the results to the validated survey of 11 questions obtained and the vocabulary test that was administered in students from to seventh "A" grade at "Oxford" High School, these instruments were necessary in order to analyze the use of digital flashcards in vocabulary learning. Additionally, to provide a deep understanding of the results obtained through data collected the results are showed in tables.

First, the survey was validated through Cronbach's alpha, the value obtained was greater than 0.8 which determined the reliability of the instrument. In addition, the vocabulary test was necessary to apply in order to know what students' level is in the vocabulary learning, the A1 test was taken from Cambridge University. Thus, 24 students completed the survey and the test, the data was unified in an excel document to produce graphics as it is showed. Therefore, each table's analysis and interpretation demonstrate the importance of the students' responses to each question and the rationale behind of this research work.

Second, this chapter has the acceptance of the hypothesis were all of the data collected was introduced into SPSS program through the Kendall's tau-b test it reflects which of the hypothesis is accepted. The alternative hypothesis which said, "Students use the digital flashcards and vocabulary learning in their learning process", and the null hypothesis is "Students don't use the digital flashcards vocabulary learning in their learning process". Finally, to verify this information the P value needs to be under 0,05. If this value is less 0,05 the null hypothesis is accepted.

Evaluation scales

The scales to evaluate this variable were constructed according to the Likert scale, in which the values were established in relation to the number of questions of each instrument, which were the survey and vocabulary test. After that, it considers the minimum and maximum value for each instrument proposes.

Digital Flashcards

The scales for evaluating the "Digital flashcards" variable were constructed based on the distribution of the minimum 11 and maximum 55 numerical values proposed by

the instrument, taking as a reference the sample, establishing 5 levels of categorization such as very low, low, regular, high, and very high.

Table 2

Levels of categorization of the use of digital flashcards

Level	Minimum	Maximum
Very Low	11	20
Low	21	29
Regular	30	37
High	38	46
Very High	47	55

Note: Five levels of the categorization the use of digital flashcards.

Vocabulary Learning

The scales for evaluation the level of Vocabulary learning as the independent variable, it was constructed based on the item of the vocabulary test the distribution of the minimum 0 and maximum 25 values proposed by the instrument, establishing 5 levels of categorization.

Table 3

Levels of categorization the level of use vocabulary learning

Level	Minimum	Maximum
Very Low	0	5
Low	6	10
Regular	11	15
High	16	20
Very High	21	25

Note: Five levels of the categorization the use of vocabulary learning.

In order to identify the level of use of digital flashcards in the learning process, a validated survey was applied to the total population to collect statistical data., which showed the following results for each question individually.

Digital Flashcards

Question 1: Do you like to use apps in your classes?

Table 4

The use of apps in the classes

Options	Frequency	Percent
Always	13	54,2%
Often	7	29,2%

Sometimes	4	16,7%
Rarely	0	0,0%
Never	0	0,0%
Total	24	100%

Note. The table represents the percentage of students from seventh grade at “Oxford” High School that uses apps in their classes. Taken from a *validated survey* done by G. Unaicho, 2023

As table 4 shows the statistical data obtained from question 1 of the instrument, which was applied to 24 students in seventh grade "A" at "Oxford" High School. This shows different frequencies in the answers, which were more than half of the population, which corresponds to 54.2%, saying that they always like to use the apps in their classes, while 45.9% like to use the apps in their classes often and sometimes, giving a total of 100% in the answers.

The statistical data showed that students always like to use apps in their classes, and this is positive way in their learning process, which could be useful to develop the vocabulary of the students which helps the interaction between teacher-students and students-students.

Question 2: How often do you find the meanings of words in online dictionaries?

Table 5
Use of online dictionaries

Options	Frequency	Percent
Always	12	50,0%
Often	8	33,3%
Sometimes	3	12,5%
Rarely	1	4,2%
Never	0	0,0%
Total	24	100%

Note. The table represents the percentage of students from seventh grade at “Oxford” High School that they find the meaning of words in the online dictionaries. Taken from a *validated survey* done by G. Unaicho, 2023

Table 5 showed the statistical data obtained from question 2 of the instrument, which was applied to the total of population from seventh grade "A" at "Oxford" High School. This shows different frequencies in the answers, that is half of the population, which corresponds to 83,3%, saying that they always and often find the meanings of words in online dictionaries, while 16,7% saying that they sometimes and rarely find the meanings of words in online dictionaries, giving a total of 100% in the answers.

Students always and often find the meanings of words in online dictionaries; this is a great advantage because students develop independent learning and learn the meaning of words as well as expand their vocabulary. In addition, the use of the online dictionary is a tool that facilitates the learning process, and it helps to know the real meaning of the words.

Question 3: Do you consider that is funny to look pictures in your classes?

Table 6

Look pictures in the classes

Options	Frequency	Percent
Always	0	0,0%
Often	2	8,3%
Sometimes	7	29,2%
Rarely	8	33,3%
Never	7	29,2%
Total	24	100%

Note. The table represents the percentage of students from seventh grade at “Oxford” High School that it is funny to look pictures. Taken from a *validated survey* done by G. Unaicho, 2023

As table 6 showed the statistical data obtained from question 3 of the instrument, which was applied to the total of population from seventh grade "A" at "Oxford" High School. This shows different frequencies in the answers, that more than a half of the population, which corresponds to 62,5%, saying that they rarely and never consider that it is funny to look at pictures in their classes, meanwhile 37,5% saying that they often and sometimes consider that it is funny to look at pictures in their classes.

Pictures can also be very well used for the development of communicative skills since pictures encourage creativity, participation, interaction, and class dynamics, which produce a spontaneous and natural reaction. In relation to the results, students do not find it funny to look at pictures in their classes.

Question 4: Do you like to watch interesting English videos?

Table 7

Interesting videos

Options	Frequency	Percent
Always	0	0,0%
Often	0	0,0%

Sometimes	6	25,0%
Rarely	8	33,3%
Never	10	41,7%
Total	24	100%

Note. The table represents the percentage of students from seventh grade at “Oxford” High School that they like to watch videos. Taken from a *validated survey* done by G. Unaicho, 2023

The table 7 showed the statistical data obtained from question 4 of the instrument, which was applied to the total of population from seventh grade "A" at "Oxford" High School. This shows different frequencies in the answers, that is more than a half of the population, which corresponds to 75,0%, saying that they never and rarely like to watch interesting English videos, while 25,0% saying that they sometimes like to watch interesting English videos, giving a total of 100% in the answers.

Students consider that they rarely and never like to watch English videos because it is difficult to understand the context of the videos, thus causing them to be bored when watching the videos. This may be caused by the students' low level of vocabulary.

Question 5: How often do you need online support on the web for your English homework?

Table 8
Online support

Options	Frequency	Percent
Always	12	50,0%
Often	7	29,2%
Sometimes	5	20,8%
Rarely	0	0,0%
Never	0	0,0%
Total	24	100%

Note. The table represents the percentage of students from seventh grade at “Oxford” High School that they need online support. Taken from a *validated survey* done by G. Unaicho, 2023

As table 8 showed the statistical data obtained from question 5 of the instrument, which was applied to the total of population from seventh grade "A" at "Oxford" High School. Also, shows different frequencies in the answers, that is half of the population, which corresponds to 79,2%, saying that they always and often need online support on the web for your English homework. The rest of the population that is 20,8% saying that they sometimes need online support on the web for your English homework.

Online support for the English homework is needed and useful resource that has a wealth of information and a variety of educational tools, it is the reason is why students always use online support for the English homework. Nevertheless, online support resources encourage interaction because they provide challenges that allow students to gradually improve their vocabulary level.

Question 6: Do you like to use English apps?

Table 9
English apps

Options	Frequency	Percent
Always	11	45,8%
Often	9	37,5%
Sometimes	4	16,7%
Rarely	0	0,0%
Never	0	0,0%
Total	24	100%

Note. The table represents the percentage of students from seventh grade at “Oxford” High School that used English apps. Taken from a *validated survey* done by G. Unaucho, 2023

As table 9 showed the statistical data obtained from question 6 of the instrument, which was applied to the total of population from seventh grade "A" at "Oxford" High School. This indicate different frequencies in the answers, that is more than half of the population, which corresponds to 83,3%, saying that they always and often like to use English apps, while 16,7% saying that they sometimes they always and often like to use English apps, giving a total of 100% in the answers.

English apps give us a great opportunity to practice the English language wherever and whenever you want, as well as allowing you to practice a wide variety of skills such as listening, reading, writing and even grammar and pronunciation for that reason students like to use English apps. Therefore, the frequent use of English applications is a good method to learn vocabulary and they make it easier to learn new words almost without realizing it, it is based on gamification.

Question 7: When do you have free time, how often do you watch English movies?

Table 10
English movies

Options	Frequency	Percent
Always	13	54,2%
Often	8	33,3%
Sometimes	3	12,5%
Rarely	0	0,0%
Never	0	0,0%
Total	24	100%

Note. The table represents the percentage of students from seventh grade at “Oxford” High School that watch English movies. Taken from a *validated survey* done by G. Unaicho, 2023

As table 10 showed the statistical data obtained from question 7 of the instrument, which was applied to the total of population from seventh grade "A" at "Oxford" High School. This presents different frequencies in the answers, that is half of the population, which corresponds to 87,5%, saying that they always and often watch English movies, while 12,5% saying that they sometimes watch English movies.

Students look for new ways to learn English and acquire vocabulary in an easy and fun way. Likewise, watching movies in English helps to have vocabulary because in the movies use a language that is not very technical or specialized, and each time it allows to learn new words, also the pronunciation improves at the same time. For this reason, students like to watch movies in English, and one of the advantages of this resource is that they can activate subtitles, which makes it easier to understand.

Question 8: Do you like to use platforms in your free time?

Table 11
The use of platforms

Options	Frequency	Percent
Always	0	0,0%
Often	0	0,0%
Sometimes	6	25,0%
Rarely	8	33,3%
Never	10	41,7%
Total	24	100%

Note. The table represents the percentage of students from seventh grade at “Oxford” High School that used platforms. Taken from a *validated survey* done by G. Unaicho, 2023

As seen in table 11, it indicated the statistical data obtained from question 8 of the instrument. This shows different frequencies in the answers, the majority of the population, which corresponds to 75,0%, saying that they rarely and never like to use platforms in their free time, while 25,0 saying that they sometimes like to use platforms in their free time.

Students do not like to use platforms to learn the English language; this may be due to a lack of motivation from the teachers. While educational platforms promote adequate development of the English language, digital tools can help improve the teaching processes, so it has a multitude of benefits.

Question 9: Do you like to use didactic cards in your classes?

Table 12
Didactic cards

Options	Frequency	Percent
Always	14	58,3%
Often	8	33,3%
Sometimes	2	8,4%
Rarely	0	0,0%
Never	0	0,0%
Total	24	100%

Note. The table represents the percentage of students from seventh grade at "Oxford" High School that used didactic cards. Taken from a *validated survey* done by G. Unaicho, 2023

In the table 12 showed the statistical data obtained from question 9 of the instrument, which was applied to the total of population from seventh grade "A" at "Oxford" High School. This shows different frequencies in the answers, more than a half of the population, which corresponds to 91,6%, saying that they always and often use didactic cards in their classes, while 8,4% saying that they sometimes use didactic cards in your classes, giving a total of 100% in the answers.

Didactic cards help the development of memory and the relationship between word and image, it summarized, and facilitated learning. Otherwise, this motivates learning in a fun and dynamic way. For that reason, students always and often like to use didactic cards that facilitates the learning process.

Question 10: How often do you use digital cards to motivate yourself to learn?

Table 13
Digital cards

Options	Frequency	Percent
Always	0	0,0%
Often	0	0,0%
Sometimes	10	41,7%
Rarely	8	33,3%
Never	6	25,0%
Total	24	100%

Note. The table represents the percentage of students from seventh grade at “Oxford” High School that used digital cards. Taken from a *validated survey* done by G. Unaicho, 2023

The table 13 showed different frequencies in the answers, the majority of the population, which corresponds to 75,0%, saying that they sometimes and rarely have used digital cards to motivate themselves to learn, while 25,0% saying that they never have used digital cards to motivate themselves to learn.

Digital cards are a great advantage in the vocabulary learning because it allows to students learn through images and pronunciation. But the students do not like to use this type of recourse. Students have to use digital cards in order to develop their memory and synthesize the essential knowledge.

Question 11: Do you like to use images or pictures with varied content?

Table 14
The use of images or pictures with varied content

Options	Frequency	Percent
Always	10	41,7%
Often	10	41,7%
Sometimes	4	16,7%
Rarely	0	0,0%
Never	0	0,0%
Total	24	100%

Note. The table represents the percentage of students from seventh grade at “Oxford” High School that used images or pictures. Taken from a *validated survey* done by G. Unaicho, 2023

As table 14 showed the answers to the question 11, it is that more than a half percent of the population, which is around of 83,4%, saying that they always and often

use images or pictures with varied content, while 16,7% saying that they sometimes use images or pictures with varied content, giving a total of 100% in the answers.

Using images and pictures with varied content is beneficial in the learning process because it avoids the monotony of visual content. However, students for the most part of population mention that they like to use images with varied content which motivate them to learn English language.

Average about the use of digital flashcards.

After analyzing each question about the use of "Digital flashcards" based on the quantitative results obtained from the instrument, a general score was calculated for this study variable.

Table 15

Average about the use of digital flashcards

Average of using digital flashcards	N	Minimum	Maximum	Mean	Standard desviation
	24	30	46	38,41	±4,88

Note: Results about the use of digital flashcards.

Taking as a reference the total score of this variable in the study sample, the use of digital flashcards was categorized into levels, referenced in the scales constructed for the instrument, which are very low, low, regular, high, and very high. Also, N represents the total number of the population, the minimum value is 30 and the maximum value is 46 with a mean of 38.41 with a standard deviation of ±4.88.

Table 16

Level of the use digital flashcards

Level	Frequency	Percent
Regular	11	45,8%
High	13	54,2%
Total	24	100%

Note: Statistically data of the level of the use digital flashcards.

According to table 16, the level of the use digital flashcards is shown where students have a regular level of 45.8%, on the other hand the data collected gives 54.2% which refers to a high level of the use digital flashcards.

Vocabulary learning

Results of the test about the level of vocabulary of students from seventh “A” at “Oxford” high school. Moreover, to measure the level of vocabulary of the students, was necessary the vocabulary test of 25 questions that was applied, which consisted of two parts: in the first part there were reading, matching, and completion questions, while in the second part there were writing questions, which allowed us to relate it to the independent variable "Digital flashcards" and obtain the results.

Table 17

Total vocabulary test scores in the study sample.

Average of vocabulary level	N	Minimun	Maximun	Media	Standart desviation
	24	1,7	3,8	5,21	±2,01

Note: Average from the vocabulary test.

Taking as a reference the total score of this variable in the study sample, it was categorized into levels of vocabulary learning, referring to the scales built for the instrument:

Table 18

Level of the use vocabulary

Level	Frequency	Percentage
Very low	1	4,2%
Low	23	95,8%
Total	24	100%

Note: Results from the vocabulary test.

As shown in table 18, the results obtained through the vocabulary test applied to the entire population give the following total results: 1 student has a very low level of vocabulary (4.2%), while 23 students have a low level of vocabulary (95.8%).

For the fulfillment of specific objective 3, the results were used to determine the relationship between the use of digital flashcards and the level of vocabulary learning. Moreover, results of the questionnaire about digital flashcards and the test measured the level of vocabulary learning of students from seventh “A” at “Oxford” high school. In order to analyze the relationship between the two study variables, a cross-tabulation table was applied, in which it was possible to observe the distribution of the levels of use of digital flashcards based on the levels of vocabulary learning.

Table 19*Cross-analysis between the levels of the two variables.*

Level using digital flashcards	Level of using vocabulary		Total
	Low	Very low	
Regular	10	1	11
High	13	0	13
Total	23	1	24

Note: Results from the cross-analysis of the variables.

The cross analysis between the study variables, determined that at a "low" level the use of vocabulary there were 10 students belonging to the study sample, who were at a "regular" level in the use of digital flashcards as well as the "high" level the use of digital flashcards were 13 students in the same level of vocabulary belonging to the study sample. Besides, at a "very low" level the use of vocabulary 1 student was found to be at a "regular" level in the use of digital flashcards. Based on the previously observed relationships, it was possible to determine that the use of digital flashcards does not affect the level of use of the vocabulary learning.

3.2 Verification of hypotheses

In the process of testing the study hypotheses, the application of Kendal's Tau-b statistical test of correlation for variables categorized in homogeneous levels constructed in 5 levels, which evidenced the following results:

Table 20*Statistical analysis to test study hypotheses*

Statistics	Value	Asymptotic Standard Error	Approximate Significance
Ordinal by ordinal Kendall's tau-b	0,266	0,177	,136
N of valid cases	24		

Note: The application of Kendal's Tau-b statistical test of correlation for variables.

The correlation test determined the value of 0.266 between the two study variables, which determines a "moderate negative correlation" supported by an approximate significance at a level of $P \leq 0.1$, thus allowing us to reject the alternative hypothesis and accept the null hypothesis. In other words, there is no correlation between these two variables, which means that the level of use of digital flashcards does not ensure that students have a good level of vocabulary.

Null hypothesis

Students don't use the digital flashcards in the vocabulary learning in their learning process.

CHAPTER IV

CONCLUSIONS AND RECOMMENDATIONS

4.1 Conclusions

At the end of this research study, the following conclusions were reached:

- Based on the information from the theoretical framework the importance of using the digital flashcards in the vocabulary learning is a great tool in the learning process because it has a lot of advantages, which facilitates to students learn in the better way.
- The results demonstrate that students have a high level of using the digital flashcards in their learning process in a natural way and for them it seems like a dynamic and innovative way of learning.
- The relationship between the use of digital flashcards and the level of vocabulary was distant, which means that the high level of using digital flashcards does not influence having a high level of vocabulary since the results showed the level of vocabulary was low, as evidenced in the vocabulary test.

4.2 Recommendations

At the end of this research project, in order to contribute to possible solutions about the use of digital flashcards in vocabulary learning, the following recommendations are suggested:

- Teachers should use flashcards in their teaching practices, in order to motivate students to interact with peers and teachers to learn and stay active during the lesson.
- It is suggested that teachers should apply a diversity of multimedia resources such as digital flashcards in the class as well as in the classroom, due to the students like to use this kind of materials.
- It is necessary to keep a continuous eye on the new trends in approaches and methodologies and multimedia resources so that students keep engaged in the learning process and improve their level of the English language.

REFERENCES

- Academy, E. (2022, November 18). *How to Conduct Field Research Study?* Retrieved from <https://www.enago.com/academy/how-conduct-field-research-study-complete-guide/>
- Agung, A. (2021). The use of flashcards in English vocabulary learning. *Journal on Studies in English Language Teaching*, 5-9.
- Aims. (2021, July 4). *Organizacion de las Naciones Unidas para la Alimentacion y la Agricultura* . Retrieved from <https://aims.fao.org/es/information-and-communication-technologies-ict>
- Alok, B. a. (2017). Hand book of the research methodology. *Researchgate*, 4-5.
- Alqahtani, M. (2019). The importance of vocabulary in language. *International Journal of Teaching and Education* , 4.
- Asesio, C. (2018, December 20). *How to develop a bibliographic search strategy*. Retrieved from Elsevier: <https://www.elsevier.es/en-revista-enfermeria-intensiva-english-edition--430-articulo-how-develop-bibliographic-search-strategy-S252998401830048X>
- Cherry, K. (2022, September 04). *How Do Cross-Sectional Studies Work?* Retrieved from Verywell mind: <https://www.verywellmind.com/what-is-a-cross-sectional-study-2794978>
- David Rizal, S. M. (2022). Audiobooks as media to increase listening and. *eternal*, 1-2.
- Dermatol, I. J. (2016, may 3). *Indian Journal*. Retrieved from PMC Pud Med Central: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4885177/#:~:text=Cross%2Dsectional%20study%20design%20is,participants%20at%20the%20same%20time.>
- Dutta, A. (2021, August 16). *Flashcards as a teaching tool*. Retrieved from Evelyn Learning: <https://www.evelynlearning.com/flashcards-as-a-teaching-tool/#:~:text=Benefits%20Of%20Using%20Flashcards%20In%20Online%20Learning&text=By%20enhancing%20their%20memory%2C%20flashcards,recall%20and%20information%20retention%20capabilities.>

- Ebenezer Appah Bonney, D.F. (2015). The Relationship between the Quality of Teachers and Pupils Academic Performance in the STMA Junior High Schools of the Western Region of Ghana. *Education and practice*, 5-7.
- Freng, Z. (2020). Using Extensive Reading and Digital Flashcards for Vocabulary Acquisition . *The University of San Francisco*, 8-28.
- Gutlohn, L. (2021, November 21). *Reading Rockets*. Retrieved from <https://www.understood.org/en/articles/how-to-teach-vocabulary-words>
- Hassan, M. (2022, October 18). *Research method*. Retrieved from <https://researchmethod.net/correlational-research/>
- Hilbert, M. (2019). The World's Technological Capacity to Store, Communicate, and Compute Information. *ResearchGate*, 13.
- Hung, H.-T. (2018). Intentional Vocabulary Learning Using Digital Flashcards. *Canadian Center of Science and Education*, 1-3.
- Ismail Xodabande, Y. I. (2022). Teaching academic words with digital flashcards. *Frontiers*, 11.
- Jha, A. (2022, September 22). *Disprz*. Retrieved from <https://disprz.com/blog/digital-flashcards-mobile-learning-tool/>
- Kara Sage, M. P. (2020). Flip It or Click It Equivalent Learning of Vocabulary From Paper, Laptop, and Smartphone Flashcards. *Journal of Educational Technology*, 25.
- Kustang, R. (2022, June 12). *SPREAD language lab*. Retrieved from <https://www.languagelabsystem.com/why-is-english-important-for-students.html>
- Lyon, C. (2021, April 3). *Bright Classroom Ideas*. Retrieved from <https://brightclassroomideas.com/4-steps-to-teach-new-vocabulary-words/>
- Mariana, B. (2022). English and heritage languages from a multilingual perspective: challenges and possibilities for integration. *Cambridge Scholars*, 19-20.
- Min. (2018, March 3). <https://educacion.gob.ec/wp-content/uploads/downloads/2016/03/2-EFL.pdf>. Retrieved from <https://educacion.gob.ec/wp-content/uploads/downloads/2016/03/2-EFL.pdf>

- Nishkala. (2021, December 21). *Bibliographic research*. Retrieved from Homebook: homebook.com/bibliographic-research/
- Pamela Barre, J. V. (2021). English as a foreign language instruction in Ecuador: Implementation of the Content and Language Integrated Learning during 2019-2021. *English Language Teaching Educational Journal* , 1-2.
- Pathak Vibha, Jena Bijayini and Kalra Snjay. (2013, September 3). *ProQuest*. Retrieved from Perspectives in Clinical Research: <https://www.proquest.com/docview/1848147740?pq-origsite=gscholar&fromopenview=true>
- Phelps, S. M. (2018). Enhancing Exam Prep with Customized Digital Flashcards. *Missouri University of Science and Technology* , 1-5.
- Robert John Ashcroft, R. C. (2018). Digital flashcard L2 Vocabulary learning outperforms traditional flashcards at lower proficiency levels. *The Eurocall reviewer*, 15.
- Sanchez, L. (2019, November 20). *Teacher vs. Facilitator in the 21st Century*. Retrieved from The difference between teacher and facilitator: <https://www.linkedin.com/pulse/role-facilitator-21st-century-luis-g-sanchez-medl>
- Saravanakumar, A. (2018). Role of ICT on Enhancing Quality of Education. *ResearchGate*, 3-7.
- Tang, G. D. (2018). Efficacy of digital flashcards versus paper flashcards to improve receptive and productive L2 vocabulary . *EUROCALL REVIEW*, 1-13.
- Thomas, L. (2022, May 8). *Cross-Sectional Study*. Retrieved from Scribb: <https://www.scribbr.com/methodology/cross-sectional-study/>
- West, E. (2023 , January 31). <https://www.languagehumanities.org/what-is-the-importance-of-vocabulary.htm>. Retrieved from <https://www.languagehumanities.org/what-is-the-importance-of-vocabulary.htm>
- Yilmaz, H. G. (2020). Digital flashcards vs. wordlists for learning technical vocabulary. *Taylor and Francis Online* , 8-15.

Young, S. H. (2021, April 26). *Learning With Digital Flashcards: The Good and The Bad*. Retrieved from Dat driven investors:
<https://medium.datadriveninvestor.com/learning-with-digital-flashcards-the-good-and-the-bad-6a9185f6b498>

Annexes

Annexe 1

Urkund report

Document Information

Analyzed document	UNAUHCHO GUALA EVELYN GISSELA.docx (D171164209)
Submitted	6/23/2023 1:02:00 AM
Submitted by	
Submitter email	eunaucho8524@uta.edu.ec
Similarity	6%
Analysis address	albaphernandezf.uta@analysis.orkund.com



Sources included in the report

SA	UNIVERSIDAD TECNICA DE AMBATO / submission.pdf Document submission.pdf (D59530664) Submitted by: hheredia5508@uta.edu.ec Receiver: deadvpved.02.uta@analysis.orkund.com		2
SA	201305724-CCB3700-ASSIGN 2.pdf Document 201305724-CCB3700-ASSIGN 2.pdf (D142061640)		2
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W	URL: https://www.eurrec.org/ijote-article-213?download=2 Fetched: 11/1/2021 3:59:41 AM		1

Entire Document

This research work includes previous research works such as scientific articles, theses, and academic journals. All these documents were taken from the internet, the scientific articles and journals were obtained specifically from academic google. On the other hand, the information was taken from different repositories. The article elaborated by Sage et al., (2020) examined the rising body of research on the usage of digital flashcards and how they differ from conventional paper flashcards in that they include multimedia, unique tempo elements, and other aspects. Additionally, digital flashcards can be integrated into apps that offer corresponding features like quizzes. In reality, this study used both a qualitative and quantitative technique to investigate how students perceived the use of laptops and cellphones throughout the learning process. The authors also performed their study at an exploratory level to examine survey data using themes that appeared across responses. Finally, the researchers discovered that when comparing digital vocabulary acquisition to paper flashcards, students with weaker English competence benefited the most. Xodabande (2022) his study compared the learning outcomes in three different groups after students were taught at least 361 basic academic terms that are frequently used in psychology using a variety of teaching materials. It examined the impact of using digital flashcards (DFs) and mobile devices on teaching academic vocabulary learning. However, there were 86 undergraduate psychology majors that took part in this study, divided into two experimental groups and one control group. Thus, there were 31 participants in the experimental group who used the digital flashcards (DF) application NAWL builder, while the control group used a list of key words and their definitions. There were also 30 participants in the experimental group who used common materials like paper, cards, and worksheets. Additionally, the outcomes about using the digital flashcards increased students' motivation to learn subject-specific academic vocabulary. Oxford and Crookall (2018) conduct a study with the intention of critically analyzing the methods available for vocabulary learning. 60 Alabama University students took part in the development of this study. The researchers employed a mixed strategy to produce their research after developing

Annexe 2
Approval



UNIVERSIDAD TÉCNICA DE AMBATO
FACULTAD DE CIENCIAS HUMANAS Y DE LA EDUCACIÓN
UNIDAD DE TITULACIÓN

Av. Los Chasquis y Río Guayllabamba (Campus Huachi) / Teléfono (03) 2 990-261/Casilla 334
Ambato-Ecuador

Ambato 28 de marzo 2023
FCHE-UT-076-2023 Acuer.

Doctor Mg.
Victor Hernández Del Salto
PRESIDENTE
CONSEJO DIRECTIVO
FACULTAD DE CIENCIAS HUMANAS Y DE LA EDUCACIÓN
Presente

De mi consideración:

Unidad de Titulación de la Carrera Pedagogía de los Idiomas Nacionales y Extranjeros modalidad presencial de la Facultad de Ciencias Humanas y de la Educación, en sesión ordinaria realizada el 28 de marzo, visto el oficio sin número del 24 de marzo 2023 suscrito por la Señorita **UNAUCHO GUALA EVELYN GISSELA** estudiante, Acuerda:

SUGERIR A CONSEJO DIRECTIVO

APRUEBE LA MODALIDAD DE TITULACIÓN **TRABAJO DE INTEGRACIÓN CURRICULAR (PROYECTO DE INVESTIGACIÓN)** LA SEÑORITA **UNAUCHO GUALA EVELYN GISSELA**, ESTUDIANTE DE LA CARRERA DE PEDAGOGÍA DE LOS IDIOMAS NACIONALES Y EXTRANJEROS CON EL TEMA PRELIMINAR **"DIGITAL FLASHCARDS AND VOCABULARY LEARNING."** Y SE DESIGNE COMO TUTOR SUGERIDO A LA **MG. ALBA HERNÁNDEZ**, DEL PERÍODO ACADÉMICO **ABRIL – SEPTIEMBRE 2023**.

Atentamente,



MARCELO WILFRIDO
NÚÑEZ ESPINOZA



ALBA PAULINA
HERNÁNDEZ FREYRE

DR. MG. MARCELO NÚÑEZ ESPINOZA
Presidente

anexo: lo indicado (1 hoja)

Annexe 3
Institutional approval



ANEXO 3
FORMATO DE LA CARTA DE COMPROMISO

CARTA DE COMPROMISO

Salcedo, 03 de abril del 2023

Doctor
Marcelo Núñez
Presidente
Unidad de titulación
Facultad de Ciencias Humanas y de la Educación

Dr. Carlos Chinguercela en mi calidad de rector de la Unidad Educativa "Oxford" me permito poner en su conocimiento la aceptación y respaldo para el desarrollo del Trabajo de Titulación bajo el Tema: " Digital Flashcards and Vocabulary Learning" propuesto por la estudiante Unaicho Guala Evelyn Gissela, portador/a de la Cédula de Ciudadanía N° 1805138524, estudiante de la Carrera de Pedagogía de los Idiomas Nacionales y Extranjeros Facultad de Ciencias Humanas y de la Educación de la Universidad Técnica de Ambato.

A nombre de la Institución a la cual represento, me comprometo a apoyar en el desarrollo del proyecto.

Particular que comunico a usted para los fines pertinentes.

Atentamente,

Dr. Carlos Chinguercela
0501799456
(03) 272-8886
0992749556
rectorado@oxford.edu.ec



Los Gamales 42-87 y Av. Yolanda Medina
Rancharía de las Rosas, Salcedo-Creador
rectorado@oxford.edu.ec 032-726-096/032-730-411

Annexe 4

Matrix of variables operationalization

Matrix of variables operationalization

Independent variable operationalization

CONCEPTUALIZATION	DIMENSIONS	INDICATORS	ITEMS	TECHNIQUE INSTRUMENT
VARIABLE Digital Flashcards Digital flashcards are technological tools that take advantage of the visual memory in a fun and dynamic way, it is also an effective learning tool that helps to learn and understand different topics. In addition, it is a good online resource as a didactic strategy that shows images, objects and videos with different colors, words, and meanings with their pronunciation.	Technological tools	<ul style="list-style-type: none"> - Apps - Platforms - Programs - Online support 	Do you like to use English apps in your classes? How often do you practice vocabulary on interactive platforms? How often do you need online support on the web for your English tasks?	Technique: Survey Instrument: Questionnaire
	Visual Memory	<ul style="list-style-type: none"> - Videos - Movies - Images - Picture - Shapes 	Do you like to watch funny videos in English classes? Does the teacher show you pictures on the computer? Do you like to observe pictures/ images in your classes?	
	Learning tool	<ul style="list-style-type: none"> - Games - Quizzes - Digital Activities 	Do you enjoy learning new words through games? Does your teacher use digital worksheets to teach new words?	
	Online resource	<ul style="list-style-type: none"> - Digital textbooks 	Does your teacher use digital textbooks in your classes?	

		<ul style="list-style-type: none"> - Extra digital material - Online dictionaries 	Do you find the meanings of words in the online dictionaries?	
	Didactic strategy	<ul style="list-style-type: none"> - Flexible - Dynamic - Innovative 	<p>How often does your teacher use dynamic digital cards in your classes?</p> <p>Do you think that digital cards are an innovative way to learn vocabulary?</p>	

Dependent variable operationalization

CONCEPTUALIZATION	DIMENSIONS	INDICATORS	ITEMS	TECHNIQUE INSTRUMENT
<p>Vocabulary learning</p> <p>Vocabulary is an important part of education, and it is one of the most important micro-skills to develop the learning process. Moreover, it helps a better understanding in the English language, which facilitates interaction in the class. In addition, it refers to the knowledge of words, including their structure, grammatical use, meanings, and links with other words that could be acquired through incidental learning.</p>	<p>Micro-skills</p>	<ul style="list-style-type: none"> - Grammar - Vocabulary - Pronunciation 	<p>Do you use digital cards to learn grammar?</p> <p>How often do you use digital cards to learn vocabulary?</p> <p>Do you like to learn vocabulary through pictures with pronunciation?</p>	<p>Technique: Survey</p> <p>Instrument: Questionnaire</p>
	<p>Understanding</p>	<ul style="list-style-type: none"> - Words - Phrases - Sentences 	<p>Is it easy for you to remember words through pictures?</p> <p>Do you understand sentences better through images?</p> <p>Do you find it easy to identify phrases by pictures?</p>	
	<p>Interaction</p> <p>Incidental learning</p>	<ul style="list-style-type: none"> - Students - Teacher - Class - Motivation - Context - Communication 	<p>How often do you use new words to interact with your teacher?</p> <p>How often do you interact with your classmates in your classes?</p> <p>Are you motivated to learn new words with digital cards?</p> <p>Do you think that learning new words help you to communicate better?</p>	

Annexe 5
Validated survey

Universidad Técnica de Ambato
Facultad de Ciencias Humanas y de la Educación
Pedagogía de los Idiomas Nacionales y Extranjeros
Students' Survey

Name:

Course: **Age:**

Objective: The purpose of this survey is to analyze the use of digital flashcards in the vocabulary learning in students from seventh grade “A” E.G.B of “Oxford” school.

Instruction: Read carefully the following statements and circle or colored the option that is appropriate for you.

Use the following scale to choose your answer.



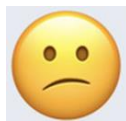
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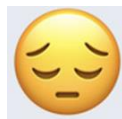
Often



Sometimes



Rarely



Never

1. Do you like to use English apps in your classes?



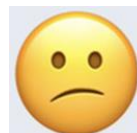
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Often



Sometimes



Rarely

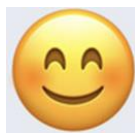


Never

2. How often do you need online support on the web for your English tasks?



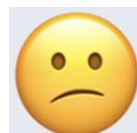
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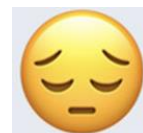
Often



Sometimes



Rarely

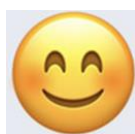


Never

3. Do you like to watch interesting English videos?



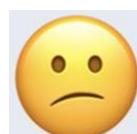
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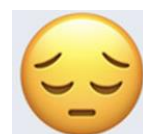
Often



Sometimes



Rarely



Never

4. When I cannot understand the words, I find the meanings of words in online dictionaries??



Always



Often



Sometimes



Rarely



Never

5. Do you like to use English apps?



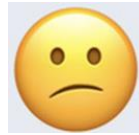
Always



Often



Sometimes



Rarely



Never

6. How often do you watch movies on weekends?



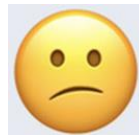
Always



Often



Sometimes



Rarely



Never

7. When I have free time, I like to use English apps.



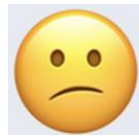
Always



Often



Sometimes



Rarely



Never

8. Do you like to use didactic apps in English classes?



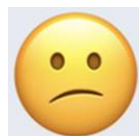
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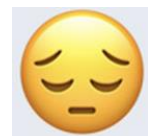
Often



Sometimes



Rarely



Never

9. Do you like to use images or pictures with varied content?



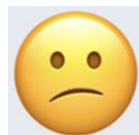
Always



Often



Sometimes



Rarely

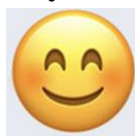


Never

10. How often do you use cards to motivate yourself?



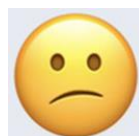
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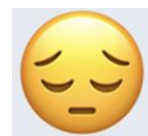
Often



Sometimes



Rarely



Never

11. Do you consider that is funny to look pictures in your classes?



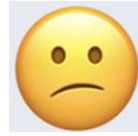
Always



Often



Sometimes



Rarely



Never

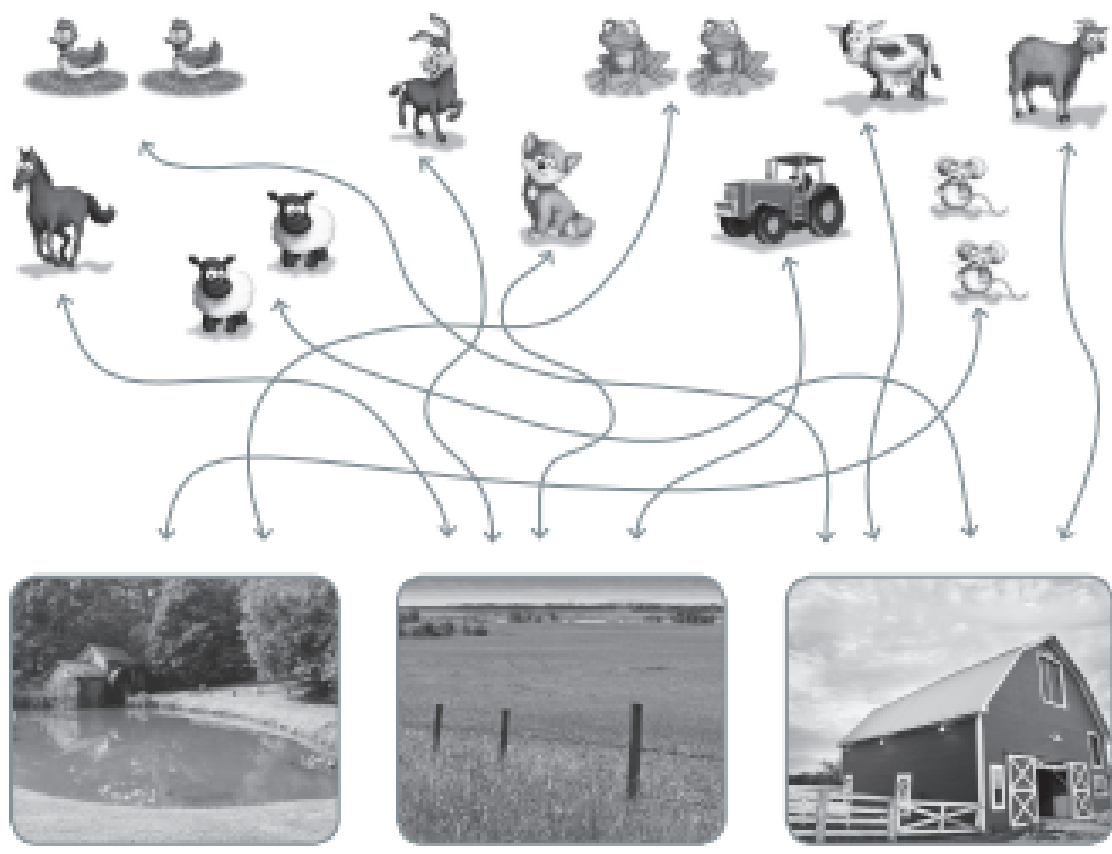
Thank you for your collaboration!!!!

Annexe 6
Vocabulary Test

8

Name: _____ Class: _____

1 Look and read. Write yes or no.



- | | | |
|-------------------------|-----------------------|-----------------|
| 1 Where's the cat? | It's in the field. | _____ yes _____ |
| 2 Where's the donkey? | It's in the barn. | _____ |
| 3 Where's the horse? | It's in the field. | _____ |
| 4 Where are the ducks? | They're in the pond. | _____ |
| 5 Where are the sheep? | They're in the barn. | _____ |
| 6 Where's the goat? | It's in the pond! | _____ |
| 7 Where's the tractor? | It's in the barn. | _____ |
| 8 Where are the mice? | They're in the field. | _____ |
| 9 Where's the cow? | It's in the barn. | _____ |
| 10 Where are the frogs? | They're in the pond. | _____ |

1 Look, read, and circle.



1 What's the cow doing?

It's sleeping / running.

3 What's the dog doing?

It's running / flying.

2 What's the horse doing?

It's eating / jumping.

4 What's the duck doing?

It's swimming / eating.

2 Find the differences in pictures A and B. Read and complete.



1 In picture A, the dog is running. In picture B, the dog is swimming.

2 In picture A, the horse is _____. In picture B, the horse is _____.

3 In picture A, the duck is _____. In picture B, the duck is _____.

4 In picture A, the cat is _____. In picture B, the cat is _____.

5 In picture A, the mouse is _____. In picture B, the mouse is _____.

6 In picture A, the frog is _____. In picture B the frog is _____.

Name: _____

Class: _____

8

1 Look, read, and match.



- 1 Is the cat jumping? a No, it isn't. It's jumping.
2 Is the frog eating? b No, it isn't. It's in the barn.
3 Is the duck swimming? c No, it isn't. It's sleeping.
4 Is the cow running? d Yes, it is.

2 Look and write.



1 Is the sheep sleeping?
Yes, it is.



2 Is the chicken flying?



3 Is the donkey running?



4 _____
jumping?



5 _____
eating?



6 _____
swimming?

Annexe 7

Cronbach Alpha validation

Reliability Statistics

Cronbach's Alpha	N of Items
,805	11

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Do you like to use apps in your classes?	34,50	26,500	-,046	,832
How often do you find the meanings of words in online dictionaries?	34,50	22,278	,583	,779
Do you consider that is funny to look pictures in your classes?	36,80	22,622	,303	,812
Do you like to watch interesting English videos?	37,10	20,322	,707	,762
How often do you need online support on the web for your English homework?	34,70	24,678	,160	,819
Do you like to use English apps?	34,80	22,844	,424	,793
How often do you watch movies on weekends?	34,50	22,278	,583	,779
Do you like to use platforms in your free time?	37,10	18,989	,906	,737
Do you like to use didactic apps in English classes?	34,50	24,278	,271	,807
How often do you use cards to motivate yourself?	34,60	23,156	,449	,791
Do you like to use images or pictures with varied content?	36,90	19,211	,871	,742

Annexe 8

Evidence applying the instruments

Applying the instrument



Applying the vocabulary test

