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Efectividad de los dibujos animados de Meta para fomentar el vocabulario del inglés como lengua extranjera en una escuela primaria ecuatoriana

Effectiveness of animated drawings by Meta for fostering efl vocabulary in an ecuadorian primary school

Eficácia dos desenhos animados Meta na promoção do vocabulário inglês como língua estrangeira em uma escola primária equatoriana

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Resumen

Las herramientas de Inteligencia Artificial (IA) se han convertido en un elemento esencial del inglés como Lengua Extranjera (EFL) hoy en día, especialmente como recursos complementarios para innovar las prácticas docentes en los centros escolares. Por lo tanto, las herramientas de IA son útiles para enseñar vocabulario con el fin de encontrar una manera alternativa de ser aplicado en estudiantes de inglés como Lengua Extranjera (EFLL). Este estudio es descriptivo e inferencial con un enfoque cuantitativo, con un diseño cuasiexperimental. El objetivo de esta investigación fue implementar la herramienta de IA "Dibujos animados" impulsada por Meta para mejorar la retención del vocabulario EFL en estudiantes de primaria. La población de 5to a 7mo grado se clasifica como EGB (Educación General Básica Media) con un total de 144 alumnos durante el tercer trimestre del año académico 2024-2025. El muestreo no probabilístico es el tipo de muestra elegido, y la muestra está formada por 44 alumnos del 6to grado, 22 alumnos de la sección A del 6to grado corresponden al grupo control (GC) que recibió el método tradicional de enseñanza, y 22 alumnos de la sección B del 6to grado que corresponden al Grupo Experimental (GE) en el cual se implementó la herramienta de IA "Dibujos Animados" para enseñar vocabulario. En conclusión, la implementación de la herramienta de IA "Dibujos animados" demostró eficacia en la enseñanza del vocabulario.

Palabras claves: Herramientas de inteligencia artificia; Inglés como idioma extranjero; retención de vocabulario; dibujos animados; escuela primaria.

Abstract

Artificial Intelligence (AI) tools have become an essential element of English as a Foreign Language (EFL) today, especially as complementary resources to innovate teaching practices in schools. Therefore, AI tools are useful for teaching vocabulary in order to find an alternative way to be applied to English as a Foreign Language (EFL) learners. This study is descriptive and inferential with a quantitative approach, with a quasi-experimental design. The objective of this research was to implement the AI tool "Cartoons" powered by Meta to improve EFL vocabulary retention in elementary school students. The population of 5th to 7th grade is classified as EGB (Educación General Básica Media) with a total of 144 students during the third quarter of the 2024-2025 academic year. Non-probability sampling was the chosen sample type, consisting of 44 6th-grade students. 22 students from Section A of 6th grade were included in the control group (CG),

which received the traditional teaching method, and 22 students from Section B of 6th grade were included in the experimental group (EG), in which the AI tool "Cartoons" was implemented to teach vocabulary. In conclusion, the implementation of the AI tool "Cartoons" proved effective in teaching vocabulary.

Keywords: Artificial intelligence tools; English as a foreign language; vocabulary retention; cartoons; elementary school.

Resumo

Ferramentas de Inteligência Artificial (IA) se tornaram um elemento essencial do Inglês como Língua Estrangeira (EFL) hoje, especialmente como recursos complementares para inovar práticas de ensino nas escolas. Portanto, ferramentas de IA são úteis para ensinar vocabulário a fim de encontrar uma maneira alternativa de aplicá-lo em alunos de inglês como língua estrangeira (EFLL). Este estudo é descritivo e inferencial com abordagem quantitativa, com delineamento quase-experimental. O objetivo desta pesquisa foi implementar a ferramenta de IA "Cartoon", alimentada pela Meta, para melhorar a retenção do vocabulário de inglês como língua estrangeira em alunos do ensino fundamental. A população do 5º ao 7º ano é classificada como EGB (Educação Básica Geral Média), com um total de 144 alunos durante o terceiro trimestre do ano letivo de 2024-2025. A amostragem não probabilística foi o tipo de amostra escolhido, sendo a amostra composta por 44 alunos do 6º ano, sendo 22 alunos da turma A do 6º ano que correspondem ao grupo controle (GC) que recebeu o método de ensino tradicional, e 22 alunos da turma B do 6º ano que correspondem ao Grupo Experimental (GE) no qual foi implementada a ferramenta de IA "Cartoons" para o ensino de vocabulário. Concluindo, a implementação da ferramenta de IA "Cartoons" mostrou-se eficaz no ensino de vocabulário.

Palavras-chave: Ferramentas de inteligência artificial; Inglês como língua estrangeira; retenção de vocabulário; desenho animado; escola primária.

Introduction

Nowadays, the Artificial Intelligence (AI) tools have enhanced learning experiences in education, considered a “digital revolution” from AI tools that have drastically changed the educational practices in this recent century (Suchanova, 2023), however, traditional methods used are still

dominant. Speaking of vocabulary teaching, new platforms powered by AI have been developed, hence, compared to traditional methods, the use of "AI-based vocabulary teaching tools are effective" (Jomaa et al ,2025).

The implementation of AI tools is centered on five threads: "Speaking, Writing, Reading, Pedagogy and Self-regulation", in terms of writing, the use of this type of technology is aimed on improving "vocabulary and grammar" as well as fosters "improvement in behavioral, emotional and cognitive engagement", and "self-efficacy" (Crompton et al, 2023). Thus, "Animated Drawings" (AD) is an AI platform powered by Meta, released in 2023 that makes drawings "come to life" offering a variety of animation options such as jumping, dancing, and so forth, becoming a type of innovative technology never explored in EFL teaching and learning.

This study is based on evaluating the effectiveness of the AD platform in teaching vocabulary in primary education through the application of pre- and post- intervention assessment. The analysis of teachers' feedback as users and evaluating the differences obtained in scores before and after this intervention will give a clear idea of how the platform influences language learning goals and what aspects can be improved. Consequently, this research is grounded in understanding how educational practices improve alongside AI tools providing awareness of how AD enhances vocabulary retention in primary school learners. Therefore, this study is centered on having insights of what is the effectiveness of AD to foster vocabulary in Ecuadorian primary schoolers.

EFL in primary education

Studying a second language in primary education faces different challenges regarding the time given per week. According to Summer & Bottger (2022), the teachers should make as much effort as they can between two or three hours by creating the most natural and motivational language-learning environment. In addition to this, offering an English Language Instruction addressed to young learners should be taken into consideration to achieve their learning outcomes in terms of English proficiency according to Celik & Karaca (2014). Kolb & Schocker (2021) stated that primary education learners should encounter a favorable learning context in the classroom including well-trained teachers as well as suitable teaching methods that make children enjoy their learning process in primary education.

EFL in Ecuadorian primary education

In Ecuador, since 2016 the EFL Curriculum has been the guide for teaching English in public and private schools which consists of five curricular threads that should be supported by the

manipulation of ICT resources to achieve the "21st Century skills developed through learning English" (EFL Curriculum, 2016). Thus, a constant aspect in Ecuadorian EFL education is how motivated the students are, since according to Soto et al (2025), the existence of supplemental resources impacts the children's engagement as well as language acquisition in EFL learning, thus, when the students are provided with a variety of resources, they are able to improve their proficiency level. Therefore, the technological resources have influenced the education in Ecuador, modifying the ways and models of instruction evidenced in the necessity of having the proper digital tools in Ecuadorian EFL education (Espinosa & Soto, 2015). Therefore, complementary digital tools are required to teach vocabulary in EFL education.

Teaching Vocabulary in EFL classrooms

Building a glossary is an intricate process that is organized and interconnects the words in the "mental lexicon", that is why when learners make mistakes we get "an insight into the way the mental lexicon is organized", so the words are not stored randomly or in as a list in our brain Thornbury (2007). Additionally, learners acquire language "subconsciously" from Input Hypothesis stated by Krashen (1989). That being so, engaging student to learn new words when teaching vocabulary is essential to understand that students can learn vocabulary indirectly through "engaging students in daily conversations, reading aloud daily conversations, and providing time and opportunities for students to read on their own" and directly through "teaching specific vocabulary words before the reading, using vocabulary taught in different contexts, repeating vocabulary exposure" according to Cruz (2010). Besides, when vocabulary are exposed to the students, the glossary becomes an "emotion booster" based on learners' experiences (Dakhi & Fitria, 2019) ,therefore, TESS (2017) stated that the use of "pictures" or "real objects" help learners to grasp the meaning of the vocabulary taught, for example, the use of digital tools in teaching vocabulary fosters engaging experiences to students, according to Pinargote and Flores (2023).

AI tools in EFL education

Artificial intelligence (AI) has improved in the last recent years in different fields, especially in education, specifically in EFL teaching and learning, as a consequence a wide variety of AI tools are available. According to De Heras (2023) AI tools are divided into the following classification: "Adaptive learning AI tools, Translation AI tools, chatbots, voice assistants, pronunciation AI tools, Lesson design and content creation AI tools, Feedback AI tools, and finally online platforms". Sotomayor et al (2023) stated that an advantage of applying AI in education is that

students can be supported in learning another language in a fast and successful way through individualized learning process, feedback given in real time and cost-effective learning. Speaking of Ecuadorian context, Alvarado and Ayala (2023) mentioned that AI in education provides the opportunity to improve the language proficiency as well as the students' engagement, in other words, AI is a useful potential tool in EFL education.

Animated Drawings as AI tool

The AI technology has been developed for multifaceted purposes, one of them is "Animated Drawings", an AI platform that allows users to make their artistic works come to life, which is an opportunity to establish a connection between people and communities with their own creativity (Smith, 2023). Speaking of imagination, this AI tool is considered a "magical tool" for children that have always dreamt of seeing their drawings moving, therefore, teachers can set this resource to offer a fun classroom-activity time, the students' engagement goes up by using their creative skills, as a result (AI Tools , 2024).

This AI technology offers a variety of options to give the sketch or doodle motion as well as the animated character can be shared on different social media platforms (Keegan, 2023). Moreover, the teacher can present the animated imaginative character made by the students as Meta (2021) stated that "the drawings become moving characters that can jump, dance, skip". Hence, "Animated Drawings" can be used to allow students to flourish their imagination working on different activities, as Edutopia (2024) mentioned "the use of these animations as a jumping-off point to have students engage in creative storytelling" and other activities to teach new words through visualizing vocabulary.

Animated Drawings as a teaching vocabulary tool

In terms of using the platform "Animated Drawings" in EFL primary education, a research gap is notoriously seen, however, there is a previous study in Africa from Olugbenga (2016) that said Computer-based Animated Drawings is the most effective instruction that influences effectiveness in students' performance in creative Arts. Additionally, another research from Vitasmoro & Chandra (2019) that investigated the application of animation cartoons in teaching vocabulary demonstrated that this resource "help students in learning English vocabulary easier and enjoyable" as well as "help teachers create an interesting technique" focused on young learners.

Having mentioned before that children learn vocabulary effectively through cartoons, another study in Saudi Arabia conducted by (Mutfah, 2023) showed that "animated videos are one of the

most effective presentation techniques for increasing students' achievement in learning vocabulary". In addition to this, types of media resources like cartoons could be used to grasp new vocabulary in the classroom helping EFL students retain words taking into consideration the animated cartoons are linked to children's interests according to Singer (2022).

Methodology

This recent study implements a quantitative approach, through a quasi-experimental design, which seeks to determine the impact of the use of Animated Drawings as the independent variable and vocabulary development as dependent variable. The population from 5 th to 7 th grade is classified as part of EGB Educación General Básica Media), with 144 students in total, as a sample for this study 44 students from 6th grade were chosen. Participants were selected systematically from two different groups based on preceding classes to avoid interfering as well as keeping educational planning. The quasi-experimental design addresses to compare two existing groups of students from 6th grade, divided into two groups, group A as control group applying traditional teaching methods, and group B, the experimental group that was exposed to the use of the AI tool "Animated Drawings" in classes during the third quarter of the 2024-2025 scholar year. Both groups took pre- and post-tests to measure vocabulary retention before and after the intervention.

This study was addressed to 44 EFL 6th-grade students from a private K-12 school in Milagro, located downtown, at the beginning of the first-quarter scholar year. The participants are from two groups, 22 students from 6th grade A (group A) and 22 students from 6th grade B (group B). The control group received traditional EFL instruction, that included teacher-centered approaches, exercises on the board without any technological support. On the other hand, the experimental group, group B was taught by using the AI tool "Animated Drawings" platform through workshop practice sessions with three hours of EFL classes per week.

The research was divided into three stages over six weeks to organize the intervention of the study at the primary school. On the stage 1, corresponding the week 1, students from 6th grade, group A and B, took the pre-test based on a vocabulary of twenty words related to a specific topic which was "animals" establishing a starting point for the guidelines to measure the vocabulary knowledge of the participants. The pre-test was designed on a 10-point format test based on the Cambridge English Vocabulary Games and Activities adapted to the topic taught during the intervention period

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to have measurable data in terms of scores to compare to the post-test results, therefore, the data from the pre-test was compiled by using Excel on an internal memory of a laptop.

On stage 2 from week two to five, group A went on having English classes about the topic "animals" with traditional teaching methods that included teacher-centered approach based on repetition, fill-in-the-blank exercises, unscramble-word, with no visual support, feedback from teacher was implemented to reinforce memorization of the vocabulary taught. The number of English classes were three hours per week during four weeks for group A and B. On the other hand, group B was taught by using "Animated Drawings" platform through workshops practice sessions in which teacher asked students to draw and paint the two animals and write their names below on a piece of A4-format paper from the images presented on a projector.

After students finished the workshop, the teacher received all the drawings of the students. Next day, for the next class, the teacher had taken pictures of the drawings and saved them on a folder on a laptop to present to students their work. The teacher uploaded each picture on the platform "Animated Drawings", once uploaded the picture, the teacher selected the action jump, and showed the drawing moving itself to the students, he asked the students to say the name of the animal presented and all the students answered. The same activities were done for four weeks to teach the twenty words from vocabulary topic "animals". Once stage 2 was over, stage 3 started, corresponding to week six; students from group A and B took the post-test about the same vocabulary-topic taught on stage 2. Data analysis tools were used; hence, the results were interpreted to evaluate the research intervention effectiveness. In this research descriptive statistics were used to analyze the data collected during this intervention study.

Results and discussion

The main aim of this study was to evaluate the effectiveness of the AI tool "Animated Drawings" (AD) contrasted to traditional teaching methods to teach English vocabulary. Both groups, the control and experimental, used the same list of vocabulary detailed in table 1.

Table 1: *Vocabulary list applied during the intervention*

VOCABULARY LIST			
Cat	hen	lion	penguin
dog	duck	tiger	shark
sheep	hamster	fish	parrot

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chicken	mouse	elephant	Turtle
horse	pig	zebra	crocodile

Table 2 presents the descriptive statistics from both the control as well as experimental group before and after the intervention study. Before the research study intervention, both groups showed some similarities in terms of scores gotten in the vocabulary pre-test. For example, the control group pre-test mean score was 6.27 (Standard deviation= 1.420), on the other hand, the mean of the experimental group was 6.64 (Standard deviation= 1.293). After the intervention, the experimental group suggested some improvement in vocabulary retention, with the mean score of 7.95 (Standard deviation= 0.998). According to this data the implementation of AI toll AD was more effective in improving vocabulary retention compared to traditional teaching methods.

The results suggested that implementing the AI tool AD provides a potential effective way to teach vocabulary. Conducting this quasi-experiment allowed to challenge traditional teaching methods that invite educators to innovate their teaching practice in light of recent development in the world of Artificial Intelligence. These findings suggest that implementing the AI tool "Animated Drawings" AD may be more effective in boosting vocabulary retention than traditional teaching methods. The findings of this recent study are consistent with previous research stated by Macías et al. (2024) it is proved that implementing AI tools is a way of reshaping the traditional methods, providing a solution in terms of innovation to engage students to participate actively in their language learning process.

Table 2: *Descriptive Statistics for Control and Experimental Group*

Measure	Group	N	Mean	Standard Deviation	Standard Error	Min	Max
Vocabulary Pre	Control	22	6.27	1.420	0.303	3	9
	Experimental	22	6.64	1.293	0.276	4	9
Vocabulary Post	Control	22	6.68	1.08	0.232	5	9
	Experimental	22	7.95	0.998	0.213	6	10

Note: *Descriptive Statistics for Control and Experimental Group before and after the intervention*

Besides, when teaching vocabulary through AI-assisted instructional strategies, it has an influence on vocabulary learning improvement mentioned by Ramos (2025) in her research study evidencing the effectiveness of applying AI tools in vocabulary teaching. It is important to stress that the application of AD to teach vocabulary has not been studied before due to this AI tool is recently, however, other studies like the research from Kataras et al. (2024) in which different AI tools were used to teach vocabulary showed a word-skill development in students motivating them in an interactive language learning experience. Another study using an AI tool to enhance vocabulary retention from Abu (2024), mentioned that the implementation of AI-enhanced vocabulary tools showed significant improvements in becoming a more engaging alternative to traditional methods to teach words. Yet, the findings of this research were obtained at a school with a small population, therefore, this research does not intend to provide a broader generalization in terms of regional impact.

Nonetheless, both groups that received classes for 6 weeks divided into 3 stages, specifically in stage 2 demonstrated working on the activities delivered. However, some aspects that may influence vocabulary retention were not taken into account in this study, for instance, the proficiency level of each student, intrinsic and extrinsic motivation, the preference of students to learn better through traditional-method activities versus using AI tools or any type of technology in classes. Besides, limitations that may take place like teachers that require some hours of training to understand the use of AI tools, especially for educators that never have applied AI tools in their lessons were not studied in this research. Moreover, the implementation of AI tools in the classroom might face some challenges regarding technological equipment at some schools due to different contexts. Hence, this recent study is centered on the effectiveness of AD in vocabulary learning in a short period without establishing some detailed information related to short-term and long-term vocabulary retention as well as the frequency of using this tool in education since AD is relatively new and unknown among educators. AD does not provide feedback as other AI tools do, so the educator is in charge of helping students to correct their mistakes.

Conclusions

This study investigated the effectiveness of implementing the platform powered by Meta "Animated Drawings" (AD), demonstrating a notorious effectiveness to foster vocabulary in Ecuadorian primary school students contrasted with the application of language teaching method taking into consideration the recent release of this platform. The quasi-experimental design illustrated promising outcomes for upcoming research aligned to technology-enhanced learning.

Despite the recent release of AD as well as the gap in the existing literature related to the implementation of this AI tool, the effectiveness of using this tool revealed that the experimental group, that was exposed to AD in classes, showed a significant retention level in comparison to the control group after collecting the data from the post-test taken on week 6 from stage 3 of this intervention. This suggests that AI-powered drawing-related animations enhance vocabulary learning.

Having demonstrated this study suggests the effectiveness of AD, the application of quasi-experimental design faces limitations like the small sample size selected in a single school which does not intend to provide a broader generalization of the findings in terms of regional impact. Besides, the short length of the intervention (6 weeks) provides some limited insights with respect to the long-term impact of carrying out AD on vocabulary retention.

Moreover, during this intervention some aspects which may affect the vocabulary retention of primary students were not studied such as the English language proficiency level, the extrinsic and intrinsic motivation of learners, the preference of students to learn better traditional-method activities versus AI-tool driven methods in classes, the AI tools literacy training addressed to educators that have never used technology in their lessons, and the access to technology that some classrooms lack owing to different contexts. Hence, future studies should address limitations aforesaid for broadening the scope of their study to provide a more comprehensive understanding of the educational potential of the AI tool "Animated Drawings" in English as Foreign Language.

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