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The application of Universal Design for Learning (UDL) as an approach to increase second-grade baccalaureate students' vocabulary in English

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Resumen

El desarrollo del vocabulario en una segunda lengua es fundamental para el éxito académico y personal de los alumnos. Sin embargo, cuando se carece de él, los alumnos necesitan ayuda para producirlo, ya que el vocabulario es vital para expresar ideas o sentimientos. Este estudio pretende determinar el efecto de la aplicación del enfoque del Diseño Universal para el Aprendizaje (DUA) en el aumento del vocabulario de los alumnos de segundo de bachillerato en una clase de inglés como lengua extranjera (EFL). El estudio siguió un enfoque cuantitativo, recogiendo datos numéricos de las pruebas previas y posteriores para su análisis estadístico. Se utilizó un diseño pre-experimental, en el que participaron 17 estudiantes de segundo-BGU de un instituto público de Azogues con un nivel B1.1 de inglés. Los resultados mostraron un aumento significativo del vocabulario de los participantes después del tratamiento, lo que se puso de manifiesto al comparar los resultados del pre-test y del post-test. Por lo tanto, concluimos que el enfoque UDL mejora la adquisición de vocabulario en el aprendizaje del inglés. Esta investigación es crucial para implementar diversas actividades que se adapten a todos los estilos de aprendizaje de los estudiantes, ofreciendo metodologías innovadoras para mejorar la adquisición de vocabulario en contextos EFL.

Palabras clave: *Diseño Universal para el Aprendizaje (DUA), vocabulario, EFL.*

Abstract

Vocabulary development in a second language is critical to learners' academic and personal success. Nonetheless, when it is lacking, learners need help producing the language, as vocabulary is vital to expressing ideas or feelings. This study aims to determine the effect of

applying the Universal Design for Learning (UDL) approach on increasing the vocabulary of second-grade baccalaureate students in an English as a Foreign Language (EFL) class. The study followed a quantitative approach, collecting numerical data from pre-tests and post-tests for statistical analysis. A pre-experimental design was used, involving 17 second-BGU students from a public high school in Azogues with a B1.1 level of English. The findings showed a significant increase in participants' vocabulary after the treatment, which was evident from comparing pre-test and post-test results. Therefore, we conclude that the UDL approach improves vocabulary acquisition in English learning. This research is crucial for implementing diverse activities that cater to all students learning styles, offering innovative methodologies for enhancing vocabulary acquisition in EFL contexts.

Keywords: *Universal Design for Learning (UDL), vocabulary, EFL.*

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1. Introduction

1.1.Context

To master a foreign language such as English, one of the most critical factors is learning vocabulary, which is the foundation for acquiring the language. For those learning a second language, vocabulary is often seen as an essential tool since inadequate vocabulary in the target language makes communication difficult (Alqahtani, 2015). A vast vocabulary range makes it easier for students in English as a second language to understand the nuances and intended meaning of what they are reading, hearing, or when they want to engage in a conversation. Therefore, as mentioned by (Rashid et al., 2022), "Students would not comprehend others' ideas or communicate their own ideas if they did not have a broad vocabulary" (p.542). In other words, the more learners learn vocabulary, the more they can converse or perform adequately in English classrooms.

Despite the importance of teaching English as a foreign language (EFL) in Ecuador, one must recognize the fact that the level of English in general in this country is low compared to other countries. The EF English Proficiency Index (2020) report demonstrates that Ecuador ranks 80th out of 113 countries in the low proficiency category, reflecting its English language proficiency level. Within Latin America, Ecuador ranks 18th out of 20 countries evaluated. Halim's study (2017, as cited in Orosz et al., 2021) mentioned that despite the curriculum's standards, most learners graduate from high school without meeting the necessary B1 level. The study also noted that English teachers need help using modern teaching techniques and methodologies. Moreover, the Ecuadorian English curriculum mentions that students must

graduate with a B1 level of English. However, it has yet to be evident, as seen in the English First report and the results of the exams taken for university entrance.

According to the English prioritized curriculum of the Bachillerato General Unificado utilized at "Unidad Educativa Javier Loyola," the institution where this study was conducted, mentions that in objective 5.6, students will be able to express ideas and opinions effectively and appropriately. Hence, this goal could be achieved through appropriate vocabulary development, as this is the basis of learning a new language. Alqahtani (2015) states that when students have to produce the language, they might need a store of words to choose from to convey the ideas or meanings they want.

Nevertheless, during the researchers' pre-professional practicum, they observed that vocabulary teaching had to be adequately reinforced. They noticed that the lessons did not allow students to fully understand and practice the vocabulary taught, which was evident when they struggled to produce the language. For example, once the words were presented, students had to translate them to promptly pass them on to another topic without having enough time to practice the previous one. Another factor was the need for more variety in the materials used to present the vocabulary since the lesson usually included just words written on the board or a list of words on a worksheet. Moreover, it was observed that students experienced feelings of being overwhelmed and stressed due to the extensive vocabulary introduced. They grappled with understanding and retaining all the words.

The participants of this study were students from "Unidad Educativa Javier Loyola," a public high school located in a rural sector of Cañar, canton Azogues, Ecuador. This institution provides education from the eighth grade to the third year of high school, with classes

comprising approximately 15 to 20 students. The physical space in some classrooms was limited, accommodating only essential items such as a blackboard and student desks. The condition of the seats, which were damaged, created a distraction for students, impairing their ability to concentrate in class as they were preoccupied with the need to repair the desks they were using. In addition, some classrooms had no light bulbs, or the switches were damaged. Technologically, the institution had one projector placed in a specific room that needed permission to be used.

The students' characteristics revealed varying levels of English proficiency and diverse learning styles. Some found it easier to complete the tasks, while others encountered more difficulties. Some requested classes outside the traditional classroom setting, while others preferred engaging with different art forms. Some students preferred using technology and visual aids, while others enjoyed incorporating games into the lessons. Furthermore, the researchers observed that students did not fully engage in their lessons. The apparent monotony in the conduct of classes led to boredom, prompting students to engage in unrelated activities or frequently use their cell phones to listen to music or play games.

1.2.Problem statement

While completing their pre-professional practicum, the researchers attended a public high school for one year. During this period, they could observe the second-grade baccalaureate students' performance in English classes. Then, the researchers noticed that students generally needed help producing written paragraphs or spoken sentences in English due to their limited range of vocabulary. This was evident when students asked teachers to translate words or sentences from their native tongue to English to complete any activity. Nation (1990, as cited in Khan et al., 2018) explained that "vocabulary is not an end itself. A rich vocabulary makes the

skills of listening, speaking, reading, and writing easier to perform". Hence, the lack of it disadvantages foreign language learners, leading them to look for other ways to help them produce the language. For example, these students used translation apps to write or say sentences in English; consequently, due to the lack of efficacy of the apps, they had unreliable translations, which affected their English comprehension and the transmission of the message. Salawazo et al. (2020) argue that "without sufficient vocabulary, people cannot express their ideas to communicate effectively in the form of spoken and written language" (p.470). Moreover, Afzal (2019) complemented that "without learning the vocabulary, it is difficult to attain any language proficiency. Vocabulary is the basis of acquiring a second language" (p.82). Then, the lack of vocabulary in second-grade students prevented them from having a richer language learning process.

Furthermore, the class teacher in charge also noticed the situation and planned activities to tackle the problem, such as word searching, matching, games, and flashcards. However, the disadvantage was the extensive vocabulary taught in one class. Even though the activities caught students' attention, remembering all the words and lacking practice was still complex. Nakata (2006) agreed that effective vocabulary learning requires consistent rehearsal, according to research on vocabulary acquisition. Then, the lack of it resulted in students forgetting words taught before, affecting their performance in new activities involving the subject.

However, to obtain more reliable data related to this problem, we applied a vocabulary test as a pre-test to assess students' vocabulary levels. Here, all students scored below the standard required to pass a test. Consequently, we concluded that students' low vocabulary level

was a real problem affecting their English class performance that deserved a solution, which was the intention of this study.

1.3.Importance of the study

Vocabulary is an essential part of the whole language-learning process. A substantial range of vocabulary allows learners to communicate and comprehend a written or spoken message. According to Susanto (2017), “vocabulary acquisition plays an important role in mastering a language. A learner with insufficient vocabulary size will not perform well in every aspect of language itself” (p. 183). Thus, teachers must know the language and how to teach it. In his description of the difficulties of teaching vocabulary, Alqahtani (2015) expressed that “the teacher should prepare and find out the appropriate techniques, which will be implemented to the students. A good teacher should prepare himself or herself with various and up-to-date techniques” (p. 24). Then, the authors proposed implementing a new approach, Universal Design for Learning (UDL), to tackle the problem of the lack of vocabulary in second-grade baccalaureate students.

UDL is an approach that could contribute to language learning since it provides educational opportunities for everyone. Nelson (2021) explains that everyone can benefit from the learning opportunities offered by this approach, including international students, students from varied backgrounds, and students with disabilities. (pp.15-32). Then, it aligns with the Ecuadorian Plan de Oportunidades 2021-2025, objective 7, which states that education should guarantee equal opportunities, innovation, and a universal, diverse, and non-centralized educational model. Hence, applying UDL helps teachers to create more inclusive classrooms and be more innovative and creative.

Although limited research has been conducted on applying this approach to teaching vocabulary in EFL, its principles and related theories, such as Multiple Intelligences, make UDL perfect for facing the mentioned problem. Moreover, the Universal Design for Learning is substantiated by three principles: different ways of engagement, representation, and action and expression, which were detailed in more depth later. Therefore, teachers can establish a more inclusive and productive learning environment that facilitates vocabulary acquisition for all students by incorporating UDL principles and acknowledging the varied intelligence of their pupils. This approach meets students' diverse demands and helps them reach their full potential by utilizing each student's distinct abilities and preferences. In addition, this study can be a great source of motivation for incorporating new teaching approaches in the Ecuadorian context.

1.4. Research question

1.4.1. Main research question:

How does implementing the Universal Design for Learning (UDL) approach affect vocabulary learning among second-grade baccalaureate students?

1.4.2. General objective:

To determine the effect of applying the Universal Design for Learning (UDL) approach on increasing the vocabulary of second-grade baccalaureate students in an English as a Foreign Language (EFL) class.

1.4.3. Specific objectives:

To identify the three most predominant multiple intelligences among students in the English class for treatment design based on the UDL approach.

To assess the students' vocabulary level prior to the research treatment to establish a baseline understanding of their vocabulary breadth.

To evaluate the students' vocabulary level after the research treatment and compare it with their baseline vocabulary level.

1.5.Hypotheses

1.5.1. Alternative hypothesis

The application of the Universal Design for Learning (UDL) approach increases students' vocabulary.

1.5.2. Null Hypothesis

The application of the Universal Design for Learning (UDL) approach does not increase students' vocabulary.

2. Literature review

In recent years, Universal Design for Learning (UDL) has been researched and analyzed as an essential method for addressing students' learning differences in the classroom. Therefore, the following section examines national and international studies that use UDL to teach English.

2.1. Previous studies

The first study was conducted by Kakamad et al. (2021). The study aimed to assist CESL (Center for English as a Second Language) in integrating autonomous, student-centered, or independent methodologies based on UDL philosophy and principles into their current

curriculum. Both quantitative and qualitative methods were employed to collect data. First, the students were asked to evaluate the ESL program using a Paulo Freire technique to determine how much flexibility they had in designing their learning settings and defining their learning objectives. According to the findings, most students gave the ESL program an abysmal rating regarding their flexibility when planning their curriculum or setting learning objectives. Furthermore, the study reveals that most students must be sufficiently prepared for university graduate-level courses after completing the ESL program.

This study is relevant to the research since it summarizes how students may feel when teachers do not give them autonomy or let them be active in the lesson. Then, it provides some ideas on how to make instructions relevant to students. Therefore, it reinforces the authors' opinion that it is essential to use approaches like UDL, where its principles, such as different ways of acting and expression, allow teachers and learners to present and have various forms to approach their learning styles.

The second study was an international study by Khatri (2021). This study explored the application of Universal Design for Learning (UDL), its principles, and guidelines in English for Academic Purposes (EAP) classrooms. The study highlighted the core UDL principles and demonstrated their relevance and practical application in EAP contexts. In addition, it further emphasized that when these fundamental UDL principles are appropriately implemented, EAP teachers can address learner variability effectively and proactively design lessons to minimize barriers in language acquisition. Also, the author mentioned that UDL principles advocate for recognizing that students come from diverse linguistic and cultural backgrounds, each with unique learning needs and preferences. The study concluded that the UDL framework also

equips educators to provide diverse resources and teaching materials, offering learners various opportunities to demonstrate their understanding.

This study is valuable for understanding the principles of Universal Design for Learning (UDL) and their proper application in second language classes. It demonstrates that using UDL principles can help all learners succeed academically and supports the integration of UDL into classroom practices and curricula to enhance educational experiences. In English classrooms, UDL offers diverse opportunities for students to engage, learn, act, and express themselves through various methods, fostering the development of resourceful, motivated, and strategic learners.

The third study was conducted by Calderón et al. (2022). The research sought to describe the impact of implementing UDL (Universal Design for Learning) to enhance the learning of English vocabulary in eighth-grade students of an institution. The participants in this study were 26 students from 8th grade who were around 12 to 15 years old. The type of investigation was qualitative action research because it reflected on what happens when learning English as a foreign language. As it turned out, an instructional design including four didactic units was constructed, utilizing various exercises to enhance language proficiency. Overall, the findings demonstrated how UDL techniques guaranteed that students were inspired to actively and independently engage in the created tasks, thereby improving vocabulary learning in English.

Therefore, this research is fundamental because it shows that applying UDL principles can provide more engaging classes by allowing students to manage in their ways. As mentioned in this study, fostering autonomous work can increase learners' vocabulary in a second language.

Moreover, the authors of this study consider how UDL principles were applied in the mentioned research as a foundation for their application.

The fourth study was an international study conducted by Alghamdy (2023). This study aimed to investigate how Universal Design for Learning enhanced the vocabulary and reading acquisition of English as a Foreign Language (EFL) students. In this study, 45 male students, ages 18 to 21, enrolled in Al-Baha University's preparatory year participated. The study's findings demonstrated statistically significant differences between EFL students' post-test average scores and those obtained through standard teaching methods and Universal Design for Learning regarding vocabulary and reading acquisition. From his research, Alghamdy (2023) concluded that UDL meets all students' needs, increases their drive to learn more English, helps them overcome obstacles in their interactions with teachers, fosters positive relationships between all of the students, offers a variety of teaching resources, and offers options for assignments.

Consequently, this study is helpful for the authors' research as it illustrates that the application of Universal Design for Learning in an EFL classroom has a significant effect on vocabulary learning. Furthermore, through this study, the researchers affirm that UDL is of utmost utility in second-language classrooms as UDL addresses the diverse needs of learners by promoting inclusion and personalized learning experiences that accommodate different learning styles and abilities. In addition to addressing the diverse needs of students, this study also highlights how it increased student motivation and engagement, which are critical factors for successful language acquisition, in this case, English. Additionally, this study is vital for the

researchers' research as it demonstrates the statistical significance of the post-test results that indicate a considerable increase in students' vocabulary learning through UDL in English classes.

The fifth study was conducted in Ecuador by Gómez and Rojas (2024). This research aimed to recognize how applying UDL principles could improve English language teaching for BGU students who experienced academic interference. The study was framed using a descriptive action research methodology with ten students and five teachers from an institute in Quito. Within the action plan, students and teachers were first observed in a class. Then, students answered a questionnaire to identify their dominant type of intelligence. A semi-structured interview of five questions was also applied to explore the scope of knowledge the five English teachers had about UDL and their classroom practices. Second, a workshop was carried out to examine strategies for using learning styles in UDL. Finally, teachers implemented teaching practices based on Universal Design for Learning's strategy to approach different learning styles in a class. The results displayed that the students under study showed significant changes in attitude due to the approach applied by the teacher, which also caused the students to pay more attention in class.

Hence, this study supports the researchers' idea that this approach can create more engaging language learning environments, which they consider clues to the learning process. Moreover, the research suggests that teachers should know students' learning styles, which we intend to consider for this study's treatment. However, it also mentions that applying lessons based on different learning styles is a challenge researchers must consider beforehand.

2.2. Theoretical framework

2.2.1. *Constructivism*

During the fifties, a new learning theory was born. Piaget (1952), a famous scientist and philosopher, proposed that the learning process should be active and student-centered, where an individual constructs new knowledge based on previous experiences. They later broadened this theory into a branch called social constructivism. Vygotsky (1962) added that learning is not an isolated process but a social one, where individuals learn from their environments and the interaction among their members.

Then constructivism is defined as a learning theory where “the acquisition of knowledge requires the active engagement on the part of the knower who uses prior knowledge to construct new understandings. This means that knowledge does not exist independently of knowers; it is a human construction” (Olssen, 1995, pp. 86-87). Furthermore, Mohammed and Kinyo (2020) explain that “for social constructivists, an understanding of the external world, its meaning, and its value, is necessarily achieved through social interaction” (p.251). Here, learners are unique and complex; their experiences help them construct their learning and peers. Then, the role of the teacher is to provide the right tools to help students develop their critical thinking and solve problems. Therefore, environmental interaction, experiences, and critical thinking are crucial points of this theory and will also be considered in this study.

One concept of social constructivism is the term *scaffolding*. Yang & Wilson (2006) explained that “in its literal sense, scaffolding is a support structure erected around a building under construction. When the building is strong enough, the scaffolding can be removed, and the

building will remain strong and stable”. (p. 365). Vygotsky (1978) interpreted this as the stakeholders or people involved in one’s learning who support the individual by building knowledge. However, when the learner is strong enough, the supporters are removed. The previous concept also relates to the Zone of Proximal Development (ZPD). Sage (2022) explains this concept:

It refers to the difference between what a child can accomplish when working on a task alone versus with a more knowledgeable person [...]. Over time, the child’s zone moves upward, allowing them to perform more tasks independently and engage with higher-level thinking. (p.1).

A robust learning theory was necessary to substantiate this investigation into the Universal Design for Learning (UDL) application to enhance second-grade baccalaureate students' English vocabulary. UDL, rooted in Gardner's theory of multiple intelligences and Vygotsky's constructivism, emphasizes explicitly concepts such as the Zone of Proximal Development (ZPD) and scaffolding (Rose & Meyer, 2002, as cited in Pastor et al., 2018). Given this framework, constructivism was chosen as a guiding principle throughout the research process.

In a constantly changing world, people have tried to adapt and innovate to their new realities. It is not different in education; during the last centuries, teachers have been instructed in different learning theories, strategies, methods, and approaches that look forward to improving the global educational system. Then, it is essential to highlight that all these concepts must work with others because something will always be missing. This is the case with behaviorism; when

this learning theory could not cover the demands of a new generation mindset, it had to step aside to welcome a fresh concept, constructivism. According to Jones and Brader-Araje (2002):

After years of implementation, behaviorism fell short of producing positive effects within the complex context of the classroom and left teachers feeling short-changed and cheated by a system that placed the guilt for students' failure to learn in their hands. [...].

Following the legacy of behaviorism, constructivism has been welcomed as a theory of knowing that more fully explains the complexity of the teaching-learning process. (pp.1-2).

Then, educators around the world designed the vast constructivism-based curriculum. Jones and Brader-Araje (2002) say, "The influence of constructivism in education today can be seen in a variety of published curricula as well as instructional practices" (p.7). Our Ecuadorian curriculum, based on the constructivist learning theory, aims to help students pursue meaningful learning and construct new concepts from their previous knowledge and experiences (Ministerio de Educación, 2016).

Therefore, constructivism is highly involved in the language learning process. The approach promotes language learning by offering students choices, engaging them in meaningful practice, and allowing them to experiment freely with the language (Schcolnik et al., 2006, p.14). Furthermore, constructivism is surrounded by several language principles that help educators guide their paths while constructing their practices grounded in it. The most important ones are action-oriented, learner-centered, and language awareness.

The first principle is that the language process is action-oriented. It means that the learner is not only sitting at his desk listening and copying what the teachers say or being passive but the main character of it.

Cooperative learning (such as pair work, group work, or any other social forms of learning), creative and active participation in classroom activities, learning by preparing various projects, and learning by teaching (when the student is asked to take over the teacher's role) have been treated as the major tasks referring to the action-oriented method. (Aljohani, 2017, p.104)

The second principle is learner-centered. Aljohani (2017) explains that the learner's autonomy is fostered by their decision-making process during lessons, considering their preferred learning style and type. Therefore, constructivism lets students decide on their process and find what works best. However, it is essential to highlight that to achieve this, Aljohani (2017) advises that "beforehand the learner should be instructed on how to become aware and take responsibility for his/her learning" (p.104).

The third principle is language awareness. It means enhancing what language is and how it works—understanding how linguistic systems function benefits students. Language awareness includes discussing language analytically with peers, researching, discovering, building language for more profound knowledge, and fostering learning skills (Svalberg, 2007).

Hence, constructivist principles and universal design can create a more prosperous language learning environment where students are active and at the center of the language process. This considers students' diverse types of language learning and the importance of peers

and community. After scrutinizing some constructivist backgrounds, the authors believed this learning theory goes hand in hand with the Universal Design for Learning.

2.2.2. Multiple Intelligences theory in English language teaching

The theory of multiple intelligences was created by Professor Howard Gardner in 1983. This theory is based on the definition of intelligence as "the ability to solve problems and to create a product in several ways" (Gardner, 1983, as cited in Yavich & Rotnitsky, 2020). The theory says that each person has different types of intelligence, which are best developed better according to their tastes, preferences, and strengths to perform specific tasks. MI has attracted the attention of researchers and scholars, particularly those teaching a second language. Over time, MI has been used to teach English, as there is a supposed positive relationship between MI and English language learning (Derakhshan & Faribi, 2015). The multiple intelligences allow English educators to modify their lesson plans to better suit their pupils' varied learning styles. This eventually improves academic performance motivation and fosters a deeper comprehension of the subject matter.

Heming (2008) mentioned that "teachers constantly observe that pupils learn in various ways" since students develop their learning styles according to their tastes and apply them in the classroom. Teachers should consider these students' aptitudes and how they learn best so that they not only meet the objectives of the class but that it is meaningful to them as well since "teaching based on a student's learning style might boost their abilities and capabilities" (Calik & Birgil, 2013, as cited in Yavich & Rotnitsky, 2020, p.107). To gain a deeper understanding of intelligence and how to apply it in an English class, Gardner proposed eight types of intelligence, which include the following: Verbal-Linguistic, Musical, Logical-Mathematical, Visual-Spatial,

Bodily Kinaesthetic, Interpersonal, Intrapersonal, and Naturalist. Each of these intelligences has a specific definition and function that determines how people with these intelligences process information and solve particular problems in different contexts, as well as strategies and activities best suited to each intelligence.

The first intelligence is verbal-linguistic, with a strong command of language and awareness of word meanings, rhythms, and sounds (Khan et al., 2024). This intelligence is used in English classes through different activities, such as reading aloud, promoting discussion, and saying and seeing words (Ahmad, 2022, p.351). The following intelligence is called Logical-Mathematical, the capacity to work with patterns, recognize relationships and resolve obstacles (Yavich & Rotnitsky, 2020, p.108). Learners with this aptitude enjoy experimenting, solving problems, and posing questions about the universe. By placing a strong emphasis on tasks requiring critical thinking, logical puzzles, and presenting information logically and sequentially, teachers can help kids develop this intelligence (Ahmad, 2022).

According to Khan et al. (2024), spatial-visual intelligence is “the capacity to think in images and pictures, to visualize accurately and abstractly.” (p.853). In an EFL class, teachers can adapt activities such as drawing, jigsaw puzzles, and reading maps, which are some of the students’ favorite activities. Teachers should encourage their pupils to sketch and imagine using their bodies. The fifth intelligence is called Bodily-kinesthetic intelligence, and Nicholson-Nelson (1999) refers to using the body to create things, solve challenges, and express feelings (p.11). Therefore, EFL teachers can implement these activities into their lesson plans, such as role-playing, acting, and physical exercises. Students with this intellect love to move, create, and touch things (Ahmad, 2022).

The subsequent intelligence is related to music, and it is Musical intelligence, which is the sensitivity to pitch, melody, speed, and sound intensity, as well as the capacity to identify and detect sounds in the surrounding environment (Yavich & Rotnitsky, 2020). Teachers can tailor strategies or activities by including background music in their classes because students perform better if they listen to music. English foreign language teachers could practice rhythmically speaking, tapping time, and putting lessons into songs for an ideal understanding of the material (Ahmad, 2022). Interpersonal intelligence is recognizing other people's emotions, motives, and desires, reacting suitably, and showing empathy (Khan et al., 2024). Thus, in the lesson plans, Ahmad (2022) mentioned that this intelligence can be adapted to group activities, workshops, and classroom conversations.

Intrapersonal intelligence is the capacity to comprehend oneself, develop a functional model that incorporates one's desires, anxieties, and abilities, and use this knowledge to make wise decisions regarding one's life (Gardner, 1999, as cited in Ahmad, 2022). Consequently, one teaching strategy is to provide students with periods for reflection. "These periods give students time to assimilate the information presented or to relate it to their own lives, also involve a change of pace that helps them stay tuned for the next activity" (Palenzuela & Reina, 2014, p.144). Ahmad (2022) stated that English teachers could give students tasks like writing in a journal or studying independently to help them develop their intrapersonal intelligence. On the other hand, Khan et al. (2024) describe naturalist intelligence as the capacity to identify and classify natural items, including plants, animals, and other objects. One of the best ways to support children's development of this intelligence is to teach them the difference between living

things (plants and animals) and the natural world (rock formations and cloud formations) (Ahmad, 2022).

These intelligences, activities, and strategies aim to provide all students with equal learning opportunities while considering their strengths and abilities. Then, the teacher can implement all these intelligences in the classroom to meet the needs and learning styles of the students (Ahmad, 2022). This theory of multiple intelligences relates to Universal Design for Learning since they recognize and value diversity in students' learning styles. By integrating multiple intelligences theory into the UDL approach, educators can create more inclusive, effective, and personalized learning environments that are responsive to the unique needs of each student. In conclusion, student learning improves when instruction includes meaningful and appropriate methods, activities, and assessments. This theory can also be applied to English language teaching when designing lesson plans to implement activities and strategies that address how students learn and process information.

2.2.3. Teaching Vocabulary in EFL

Learning English vocabulary plays a fundamental role when learning a second language since it is the basis for producing and understanding the message, whether in writing, speaking, listening, or reading. Lessard-Clouston (2013) defines vocabulary as “the words of a language, including single items and phrases or chunks of several words which convey a particular meaning, the way individual words do” (p. 2). Hence, the importance of the study of proposing an approach that could help students to increase it. Learners cannot communicate their ideas or understand those of others if they lack sufficient vocabulary (Rasouli, 2016, as cited in Sutrisna, 2021). For this reason, it is paramount that students know vocabulary because not having it can

hinder their language learning or their performance in the classroom. The more vocabulary students learn, the more active in their learning they can be (Akramy et al., 2022). Nevertheless, teachers must also be careful about how many vocabulary words they teach each lesson. McCarten (2007) mentions that students should be able to handle the amount of words, as there are limits to how much vocabulary someone can absorb for productive use in a lesson.

Learning English vocabulary plays a fundamental role. Many EFL students view vocabulary acquisition as nothing more than memorizing a list of new terms with definitions in their mother tongue without any practice using the words in context. Many students believe learning vocabulary requires searching for terms in a bilingual dictionary to find their definitions (Alhajaji et al., 2020, p.291). Nevertheless, another study states that words are not helpful if learned in isolation or memorized without understanding their meaning (Celce-Murcia, 2001, p. 285). It is crucial to teach vocabulary words in a context where each student can understand and internalize them, store them in their long-term memory, and find them relevant. Vocabulary knowledge is best increased by learning through context, so teachers should encourage students to infer word meanings from contextual clues (Useini, 2023, p.108).

The idea of teaching vocabulary in the traditional way, which only requires the memorization of words, has been changing over time. New strategies are now being employed to develop the students' curiosity, motivation, creativity, and enjoyment. The Frayer model is one strategy that can be used to teach vocabulary and is closely related to UDL. This instructional strategy uses a graphic organizer to teach language. This strategy allows students to visually depict each vocabulary word via synonyms (examples) and antonyms (non-examples), illustrations, and sentence creation (Dazzeo & Rao, 2020). Then, it provides vocabulary

instruction that ensures greater accessibility and engagement and can improve word knowledge. Finally, providing practical strategies to engage students in their learning and support them in acquiring new words is the role every teacher should perform in English classrooms.

2.2.4. Universal Design for Learning (UDL) in EFL

In our globalized world, mastering English is one of the primary skills that should be part of any Ecuadorian professional's repertoire. However, according to the English Proficiency Index, Ecuador is considered one of the countries with the lowest level of English in Latin America. Hence, searching for new approaches to upgrade our current reality is essential.

Architects first used Universal Design (UD), but educators later adapted it as Universal Design for Learning. The authors of UDL were two researchers from Harvard University, David Rose and Anne Meyer (1984), who established the Center for Applied Specialized Technology (CAST). This center was the setting where the UDL framework started to build the idea of breaking the "one-size-fits-all" mold and, therefore, expanding the opportunities for learning for all students with learning differences (Edyburn, 2005, pp. 17-18).

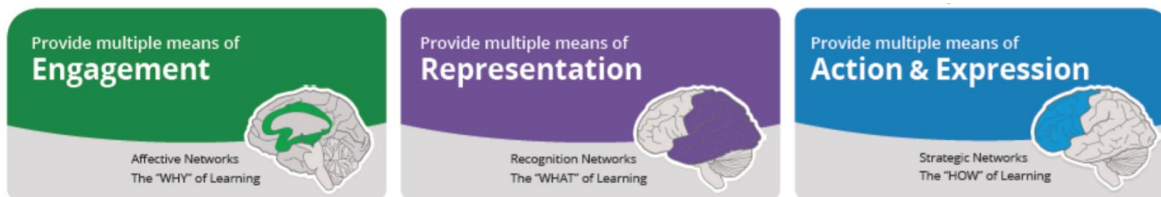
Afterward, this approach started to gain popularity worldwide, with various people adding or expanding new definitions for UDL. For example, Nelson (2021) describes the UDL as a framework that can assist educators in designing free learning activities for all students. The approach provides learning opportunities for everyone, including students with disabilities, diverse backgrounds, and international students. (pp.15-32). Beamish et al. (2014) explain that “universally designed lessons benefit all students in the classroom, not just those struggling or

working below grade level” (p.24). Therefore, the term goes beyond learners with disabilities or special needs; UDL also considers different learning styles.

Furthermore, UDL recognizes the importance of brain activity and neuronal networks in learning. These factors substantiate the three main principles of UDL: representation, action and expression, and engagement.

Figure 1

Universal Design for Learning and the Learning Brain



Engagement is related to affective networks and is the "why" of learning. Jiménez et al. (2022) explain that these networks are responsible for receiving information and giving it an emotional evaluation, helping to establish the person's involvement in their activities (p.37). Therefore, this principle is mainly related to motivation, which allows students to participate actively in what they want to learn. Rose et al. (2005) reflect that "not all students are engaged by the same extrinsic rewards or conditions, nor do they develop intrinsic motivation along the same path. Therefore, alternative means of engagement are critical" (p.137). For example, teachers can base their classes on students' hobbies, interests, or real-life situations.

Representation is related mainly to the recognition networks, the "what" of learning. These networks specialize in perceiving and recognizing information and assigning meanings, allowing us to grasp, identify, and integrate information (Jiménez et al., 2022, p.35). The

principle is about how the information is presented to students. Almumen (2020) describes, "To help learners be more resourceful and knowledgeable, information and learning contents will be presented in multiple ways/methods" (p.1). Therefore, teachers can use diverse resources, such as textbooks, videos, audio, games, and dramas.

The last principle, action, and expression, states that students have different options for interacting with the class material and being assessed. This principle is related to strategic networks and the "how" of learning. According to Jiménez et al. (2022), their primary function is to generate and control mental patterns and actions and the performance of the activities (p.36). Hence, according to Almumen (2020), "students should have multiple opportunities to express their learned knowledge. Students should be able to select from multiple options, such as reports, projects, hands-on activities, and technological tools, to express what they have learned" (p.1). Then, they have the freedom to choose what is best for them.

Due to its principles, UDL is a great approach to implement in English as a foreign language (EFL), in the researchers' opinion. Based on the previous studies considered for this research, implementing UDL has some favorable results. Gómez and Rojas (2024) found that "the application of UDL principles can enhance English language teaching for BGU students by offering flexible instructional methods, diverse materials, and varied assessments accommodating their learning needs" (p. 537). Moreover, Alghamdy (2023) explained that "the use of UDL has a statistically significant impact on students' competency and proficiency in acquiring English reading and vocabulary skills" (p.146).

Therefore, it is vital to consider some strategies related to UDL in teaching English. The first one is visual aids, which help teachers provide different ways of representing the content

beyond written texts and audio and engage students during the lessons. Pateşan et al. (2018) explain, “The benefits of using visuals in teaching are huge, ranging from grabbing and maintaining attention to motivating students to engage with the lecture’s particular topic and helping them to retain information (p. 356). Additionally, charts such as the KWL are another strategy, especially for representation. “Many teachers use the “Know, Want to know, Learn” strategy (KWL), in which students generate lists of things they already know about a topic, things they want to know, and finally, things they have learned” (Ogle, 2007, as cited in Sally, 2010, p. 15). The last strategy to mention is graffiti, which is a kinesthetic strategy. It consists of “asking students to move around the room while writing down, drawing, or dictating everything they know about a particular topic on large sheets of paper” (Bennett & Rohlheiser, 2001, as cited in Sally, 2010, p.15). In conclusion, these are some strategies teachers can employ while designing a lesson based on the UDL that can benefit language learning.

2.2.5. Lesson plans based on the Universal Design Approach to teaching English

“Efficient lesson planning with universal learning design (UDL) enables teachers to more effectively meet students’ individual needs” (Courey et al., 2012, p.7). In a teacher’s career, they will inevitably encounter diverse classrooms with students who have learning disabilities, varying learning styles, and different social or economic backgrounds. They cannot ignore or dismiss this reality; they must address it. Educators are responsible for creating inclusive environments where all students can benefit from the learning opportunities.

Universal Design for Learning (UDL) enhances English lesson planning by incorporating principles that cater to diverse student needs. Unlike traditional plans, UDL-based lessons include various instructional strategies, adaptations, and considerations for students’

backgrounds. These plans provide multiple ways to represent content, engage students, and assess understanding, which benefits learners with varying English proficiency, cultural backgrounds, and abilities. Teachers may reduce or eliminate obstacles that impede students' learning or their capacity to demonstrate what they have learned by incorporating these three principles into their lesson plans. By offering diverse methods of presentation and expression, UDL stimulates interest and accommodates different learning styles (Courey et al., 2012).

In the case of UDL, the lesson plans follow four steps: developing goals, deciding assessments, determining methods, and deciding materials (Rao & Meo, 2016). The first step in planning a lesson based on UDL is developing goals. Here, teachers should be clear about their standards since they will be the foundation of the lessons' objectives. Stating a clear goal statement is essential because the goal drives the other lesson components (assessments, methods, and materials) (Rao & Meo, 2016). Practical goals are SMART, which means specific, measurable, attainable, results-oriented, and time-bound. The second step is deciding the type of assessment. To assess if students are reaching the set goals, UDL has two types: formative and summative. The former monitors students' learning processes, while the latter evaluates the results of those processes.

The third step involves determining the methods that educators will use to carry out a lesson, impart knowledge, and engage students in building mastery of skills and subjects (Rao & Meo, 2016). The last step is to decide on the materials for the lesson. Teachers should provide an extensive range of resources, such as technology, realia, visual presentations, audio, and field trips, to engage every student in the class. Finally, every school and class context is different; therefore, the teacher must adapt every step to their reality.

3. Methodology

3.1.Type of Research

The present study employed a quantitative approach, which, as Creswell (2018) explains, involves "the processes of collecting, analyzing, interpreting, and writing up the results of a study" (p. 17). The research aimed to determine the effect of the UDL approach on students' vocabulary by collecting numerical data and conducting statistical analyses. This approach enabled the researchers to measure students' vocabulary range before and after implementing the UDL approach, thereby assessing any improvements.

Quantitative hypotheses are predictions about the relationships among variables, expressed as numeric estimates of population values derived from sample data (Creswell, 2018, p.127). Researchers test these hypotheses using statistical procedures to draw inferences about the population based on the sample. Therefore, the researchers confirmed or refuted the hypothesis that the UDL approach helps students increase their English vocabulary by measuring relevant variables involved in the study.

3.2.Research method

The present study applied a pre-experimental design. Ramos (2021) mentioned that a pre-experimental design carries out an intervention only in an experimental group. Therefore, the researchers did not randomly assign the participants; they chose one group and applied the pre and post-test to that group. In this study, vocabulary, the dependent variable, was measured with an instrument at two points: before and after the treatment with a pre-test and post-test. In studies when it is impossible to have a group that does not receive the intervention, this kind of research

can shed light on the impact of an independent variable on a particular phenomenon (Ramos, 2021). As this is a pre-experimental design focused on a single study group, it needed to add trials because there was no other group to compare.

3.3. Techniques and instruments

Based on the nature of the research, a quantitative pre-experimental design, the data collections used by the researchers were a pre-test and a post-test (Appendix 1). However, a multiple intelligences test was also applied to gather data necessary to implement Universal Design for Learning (Appendix 2). Moreover, two research experts validated these instruments and provided feedback to improve them (Appendix 3). “The primary purpose of the expert review process is to maximize the measure’s content validity by obtaining feedback from a panel of experts regarding “how relevant they think each item is to what you intend to measure” (DeVellis, 2016, p. 135 as cited in Kalkbrenner, 2021).

Once the experts validated the instruments, the authors updated and implemented them based on the feedback. Each instrument is further described below.

3.3.1. Pre-test and Post-test

The authors administered a pre-test and post-test to measure students’ vocabulary breadth before and after the treatment. According to Dimitrov and Rumrill (2003), “pretest-posttest designs are widely used [...] primarily to compare groups and measure change resulting from experimental treatments” (p.159). Therefore, we adapted the test used for both cases from the book *Test Your English Vocabulary in Use (pre-intermediate and intermediate)*, published by Cambridge University Press and written by Stuart Redman and Ruth Gairns (2001).

Given the broad scope of vocabulary, the researchers consulted with the class teacher to obtain the unit topics planned for the last quarter of the school year. They then created the test based on vocabulary related to cinema and movies, biographies and movie reviews, movie history, and genres. The total number of words taught was 42. Therefore, each question contained six items except the second question, which had 12. We graded the test out of 42 but transformed the results to a scale of 10 for standardization.

3.3.2. Multiple Intelligences Test

The multiple intelligences test was the first instrument applied to gather insights about the three most predominant intelligences in the class. The test was a Spanish-adapted test by Walter McKenzie (1999). Marulanda Londoño et al. (2022) describe the tool mentioned: "It is concluded that the instrument to assess multiple intelligences evidences from the sample a high degree of reliability and statistical internal consistency. The above conclusion presents the appropriate instrument for studying multiple intelligences in students". (p.85). Furthermore, the test consisted of eight intelligence categories: intrapersonal, naturalistic, visual, musical, verbal, interpersonal, kinesthetic, and logical. Each category included ten descriptions, and students had to respond with one (1) if they identified them, zero point five (0.5) if they partially identified them, and zero (0) if they did not identify them at all. The researchers used the test results to identify the participants' predominant intelligence, which they then used as a foundation for creating lesson plans during the treatment.

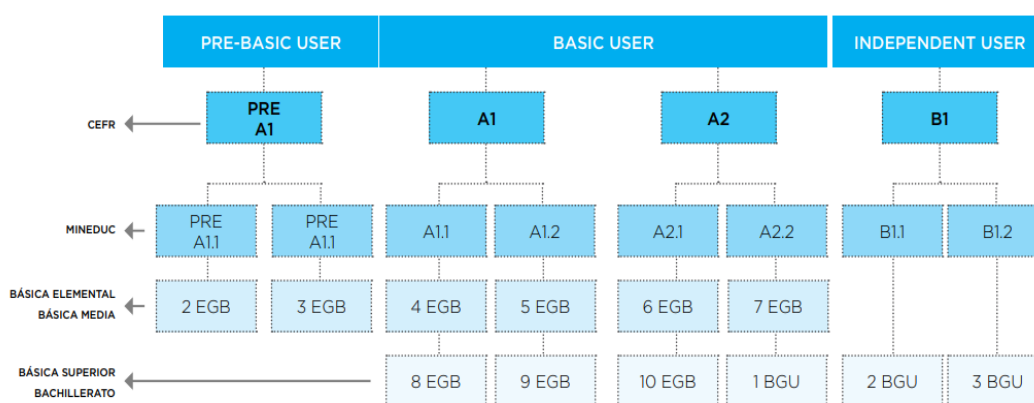
3.4. Participants

The participants selected for this study were 17 students from the 2nd-grade class, parallel "A" from a public high school in Azogues, whose average ages were around 16. The

participants were not randomly selected. The authors selected them to work with because, as shown in Figure 2 in the Ecuadorian English Curriculum, they are supposed to have the highest level of English proficiency, with a B1.1 (Ministerio de Educación del Ecuador, 2016).

Figure 2

Levels of Proficiency: Branching Approach.



Source: Ministerio de Educación del Ecuador. (2016). [English as a foreign language]. [EFL1.pdf \(educacion.gob.ec\)](https://www.educacion.gob.ec/EFL1.pdf).

3.5. Research stages

3.5.1. Identifying the Research Problem

To determine the topic of this research, the researchers observed how English classes occurred in general during one year. MacDonald (2016) mentioned that classroom observation is a primary method for studying and evaluating teaching, aiming to measure and assess its quality and effectiveness. Therefore, this evaluation method offered the most direct insight into the instructor's teaching practices. Moreover, for more reliable data, the authors applied a pre-test where the participants scored minus the standard grade to pass an exam. Once the situation was identified and analyzed, it was considered the most significant in the EFL class during practicum

time. The researcher reviewed the literature to understand and adequately describe the problem and the context.

3.5.2. Formulating Research Objectives or Hypotheses

The next step in this study was to develop the research objectives, which we used depending on the type of research. Since this study employed a quantitative approach, researchers focused on measuring and assessing improvements. The study's overall objective measured whether applying the UDL approach improves students' ability to acquire and use new vocabulary. The hypothesis formulation was consistent with the pre-experimental method used to explore the hypothesis. Therefore, it was possible to test whether the hypotheses were valid.

3.5.3. Designing the Study

The researchers used a pre-experimental design while designing this study, which allowed us to manipulate the independent variable during the research process to achieve a specific goal. Also, in the pre-experimental design, the authors did not randomly assign the participants; they chose one group and applied the treatment to that group.

3.5.4. Data Collection

To collect the data for this study, the researchers administered a pre-test to gauge the extent of the student's vocabulary before the intervention. Then, they implemented the UDL approach intervention to expand the student's vocabulary. After administering the post-test to the students, they compared the results and answered the research question to determine if they met the objective and confirmed the hypothesis.

3.5.5. Data Analysis.

The researchers used a quantitative method called descriptive statistical analysis to analyze the data collected. Therefore, they compared the pre-test and post-test scores to determine whether the students had increased vocabulary. For the mentioned procedures, the authors used Jeffreys's Amazing Statistics Program (JASP), which provides a wide range of data analysis, statistical modeling, and visualization tools.

3.5.6. Interpreting Result.

This step entails compiling and structuring all the obtained data for the optimal analytics strategy. At the end of the study, the researchers compared the research question and objectives to the data received to interpret the findings.

Chart 1

Operationalization of variables

Variables	Concept	Dimensions	Indicators	Instrument/Items
Universal Design for Learning (UDL)	UDL is a framework that can assist educators in designing free learning activities for all students. The approach provides learning	Learning activities	Task grades in class	Lesson plans based on Universal Design for Learning
		Provide learning opportunities for everyone.	Assignment options Product options	Lesson plans based on Universal Design for Learning

	opportunities for everyone, including students with disabilities, diverse backgrounds, international students, and others (Nelson,2021).			
			<i>PRE-TEST</i>	
Vocabulary	Vocabulary is “the words of a language, including single items and phrases or chunks of several words which convey a particular meaning, the way individual words do”(Lessard-Clouston, 2013, p.2).	Use and meaning	Using vocabulary in a variety of contexts.	Vocabulary test Items: 1-6 Choosing the correct words for each blank space related to the context.
			<i>POST-TEST</i>	
			Using vocabulary in a variety of contexts.	Vocabulary test Items: 1-6 Choosing the correct words for each blank space related to the context.

3.6.Treatment

Increasing vocabulary range through the application of Universal Design for Learning in lesson plans.

3.6.1. Objective

To teach vocabulary about cinema and theater, biographies, movie reviews, and movie history and genres through UDL.

3.6.2. Introduction

The researchers proposed creating lesson plans (Appendix 4) based on the Universal Design for Learning approach, as creating activities based on the principles of the mentioned approach can provide learning opportunities for everyone. The principle of representation means that students are presented with the material differently through audio, visual aids, or written or physical resources. Action and expression allow students to have the opportunity to choose how to present a product or assignment. At the same time, engagement ensures students' engagement during the lessons by optimizing autonomy, the relevance of the content, and collaborative work.

Each lesson was held on Tuesdays and Wednesdays and lasted 45 and 90 minutes, depending on the student's school schedule. Each stage of the lesson had its activities to follow, and the number of activities depended on the time of the lesson. Finally, the lesson plans presented below focus on the principles of UDL and strategies for the three intelligences: naturalistic, intrapersonal, and bodily-kinesthetic.

Chart 2

Treatment plan

<p>Goal of treatment: To teach vocabulary about cinema and theater, biographies and movie reviews, and movie history and genres through UDL.</p>		
<p>No. of sessions: 7</p>		<p>Estimated time to complete: 4 weeks.</p>
<p>(Week 1) Sessions #1: Naturalist Intelligence - Theater</p>		
Learning Outcome	Action Steps	Duration of session
<p>At the end of the lesson, students will be able to:</p> <ul style="list-style-type: none"> - Use vocabulary related to theaters. - Differentiate the different parts of a theater. - Remember vocabulary 	<p>Start the lesson by playing a game called “Put it in order.”</p>	<p>90 minutes</p>
	<p>Engage students in the lesson by providing a space for Q&A regarding theaters.</p>	
	<p>Introduce vocabulary by providing pictures and small sticky notes with the parts of the theaters' names. Students must listen to the teacher's descriptions and match the names in the picture.</p>	

related to theaters.	Allow space for student interaction to activate students' thinking. Students create their definitions for the words explained before. They have two options: students can write their definitions or draw them.	
	Students practice the theater's parts by coloring a worksheet of a theater.	
	Individually, students create stories related to theaters using the vocabulary learned. Students have options to complete the task: they can draw, write, or tell their story.	
	Assess students by giving a crossword activity about the vocabulary learned.	
(Week 1) Sessions #2: Intrapersonal Intelligence - Cinema		
Learning Outcome	Action Steps	Duration of session

<p>At the end of the lesson, students will be able to:</p> <ul style="list-style-type: none"> - Understand the meaning of words related to cinema. - Use vocabulary about cinema to make short presentations 	<p>Start the lesson by developing a speed dating activity where students have to talk about their likes.</p>	<p>45 minutes</p>
	<p>Start the lesson by developing a speed dating activity where students have to talk about their likes.</p>	
	<p>Introduce vocabulary through independent reading, where students must choose uncommon words to learn.</p> <p>Explain the vocabulary words, and allow some free time for students to reflect on the new vocabulary silently.</p>	

	Practice and produce vocabulary by creating a Frayer model chart where students draw and write sentences with the learned words.	
	Assess students through a brief presentation of their product. Provide two options for completing the task: option one is to complete it with drawings, and option two is to complete it by writing.	
(Week 2) Session #3: Bodily-kinesthetic Intelligence - Cinema		
Learning Outcome	Action Steps	Duration of session
At the end of the lesson, students will be able to:	Remember the previous vocabulary by watching pictures.	90 minutes
- Understand the meaning of	Engage students in the lesson by playing a short game called The Gangster.	

<p>words related to cinema.</p> <p>- Represent vocabulary about cinema through drawings and written tasks.</p>	<p>Introduce the vocabulary through riddles.</p> <p>In groups, students try to decode riddles to learn words and their meanings.</p>
	<p>Activate students' thinking by allowing them to extract the main ideas from the riddles and discuss their answers. They can then share with other groups.</p>
	<p>Students practice by working on an activity called Describe and Draw. In pairs, students reproduce a picture by listening carefully to their partners' descriptions.</p>
	<p>Students describe their favorite movies. They have options to complete the task. They can draw, write, or tell their descriptions</p> <p>They present their work in front of the class.</p>
<p>(Week 2) Sessions #4: Naturalistic Intelligence- Biographies</p>	

Learning Outcome	Action Steps	Duration of session
<p>At the end of the lesson, students will be able to:</p> <ul style="list-style-type: none"> - Comprehend the meaning of vocabulary related to biographies. - Describe the meanings of the words learned. 	Start the lesson by playing a memory game.	45 minutes
	Present the vocabulary through a biography where students individually read and underline words.	
	In pairs, students categorize information from the biography in a chart.	
	Students work in pairs to answer questions related to the biography. Tell students they have different options for presenting their answers: either writing on their sheet or telling teachers the answers orally.	

	In groups, assess students by playing the “Rope game” outside the classroom, where they have to answer questions about the vocabulary learned.	
(Week 3) Sessions #5: Intrapersonal Intelligence- Movie review		
Learning Outcome	Action Steps	Duration of session
<p>At the end of the lesson, students will be able to:</p> <ul style="list-style-type: none"> - Demonstrate understanding of the meaning of the vocabulary words related to movie reviews. - Use the vocabulary learned to give 	Play hangman for students to remember vocabulary taught in the previous class.	90 minutes
	To prepare for the lesson, have students complete an activity called the KWL chart. They have options to complete the task: they can draw, write, or sketch.	
	Introduce vocabulary by doing a picture description activity in which students describe pictures and videos while looking at the screen.	

reviews about their favorite movies.	Students to discuss with their close partners what they saw and how they felt about the previous activity.	
	Practice vocabulary through a matching activity where students look for the meanings of the words.	
	The teacher creates stories with magazines to practice and produce the vocabulary points for the lesson. Students have options to complete the task: they can cut and paste letters to write sentences or describe their ideas using pictures only.	
	Students complete the last section of the KWL chart with what they learned in the lesson.	
(Week 3) Sessions #6: Bodily-kinesthetic Intelligence - Movie History		
Learning Outcome	Action Steps	Duration of session

<p>At the end of the lesson, students will be able to:</p> <ul style="list-style-type: none"> - Demonstrate understanding of the meanings of the words related to movie history. - Use the new vocabulary to create sentences and drawings. 	<p>Start the lesson with movements where students touch their feet and head and stretch.</p>	<p>45 minutes</p>
<p>Introduce the vocabulary by presenting videos, pictures, and sounds of the words. Give definitions and examples.</p>		
<p>Show short silent film clips, explain its characteristics, and demonstrate how to act.</p>		
<p>Practice the vocabulary in groups to create a short silent film scene.</p>		
<p>Reinforce the vocabulary learned by playing charades, where students have to do mimics to guess the words.</p>		

	In groups, assess students' work by creating collages using magazines in which they make sentences, drawings, or pictures using the vocabulary learned on a flipchart. Tell students they have different options for presenting their collages: either by writing their sentences on the collage or by telling teachers their sentences orally.	
(Week 4) Sessions #7: Naturalistic Intelligence - Movie genres		
Learning Outcome	Action Steps	Duration of session
At the end of the lesson, students will be able to: - Understand the meaning of the vocabulary and give examples.	Play scramble words for students to remember the vocabulary taught in the previous class.	90 minutes
	Make students guess movies based on their soundtracks.	

<p>- Express vocabulary through creative representations of the words.</p>	<p>Present the vocabulary through a game called “The Ship Comes Loaded,” in which students give an example of the category being played.</p>	
	<p>Students to give characteristics of the different genres mentioned during the previous game.</p>	
	<p>Practice vocabulary by organizing small posters of movies according to their genre.</p>	
	<p>Assess students by producing small representations of characters from different movies using Play-Doh. Students give brief explanations of their creations. They have options to complete the task: they can make an oral presentation or write the characteristics of their representations.</p>	
	<p>Students divide each figure according to the movie’ genre to which they belong.</p>	

4. Results and data analysis

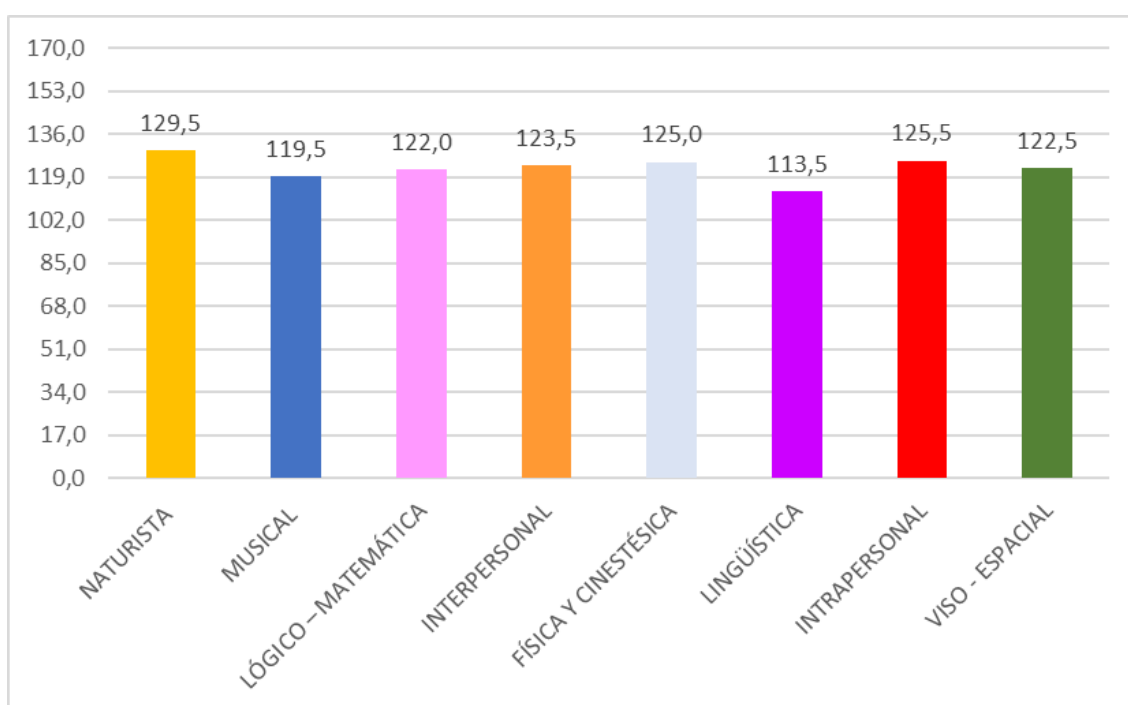
In this section, we presented and analyzed the results obtained in our study using descriptive statistical analysis, which organizes data, summarizes it, and describes the relationship between variables in a sample or population (Kaur et al., 2018). Descriptive statistics are significant and fundamental to the study as they can be a foundation for subsequent analyses. Based on this, we used the measure of central tendency, which is a number that shows the middle or average of all the data. According to Salkind (2010), the three main measures of central tendency researchers most frequently employ are the mean, median, and mode. Lastly, this facilitates comparing the pre-and post-test data to determine whether there was an improvement after the treatment. The measurements of the central tendency helped us to meet our study objective: To determine the effect of applying the Universal Design for Learning (UDL) approach on increasing the vocabulary of second-grade baccalaureate students in an English as a Foreign Language (EFL) class. Moreover, it set the basis for responding to our research question: How does implementing the Universal Design for Learning (UDL) approach affect vocabulary learning among second-grade baccalaureate students?

Since the researchers only executed an intervention in one group, this project adhered to a pre-experimental quantitative design. Consequently, they did not assign the participants at random. The initial step in conducting the study involved obtaining informed consent from the school principal to secure permission to execute the research within the school premises (Appendix 5). The researchers distributed informed consent forms to the parents of the students (Appendix 6). Once they obtained the necessary permissions, they administered a test of multiple intelligences to gain insights into the three most predominant intelligences in the class. The test

was a Spanish-adapted test by Walter McKenzie (1999). Then, the authors analyzed the test results and applied them to the lesson plans. Next, the study group took the vocabulary pretest, which lasted one hour. In the final phase, the study group underwent a one-hour post-test, which assessed the participants' post-treatment vocabulary increase.

Graphic 1

The three most predominant multiple intelligences of the participants



The first graphic displays the results for the class's three most predominant multiple intelligences. The bars represent the eight intelligences tested and their respective values among all students. The most predominant intelligence, indicated by the yellow bar, is naturalist at 129,5. The second is intrapersonal, shown by the red bar at 125,5. In third place, the grey bar represents bodily-kinesthetic intelligence at 125,0. The orange bar indicates interpersonal

intelligence at 129,5, while the green bar shows spatial-visual intelligence at 122,5. Logical-mathematical intelligence, represented by the pink bar, is at 122,0. The blue bar signifies musical intelligence at 119,5. Finally, the purple bar shows linguistic intelligence at 113,5.

The above results showed that the three most predominant intelligences in the class were naturalistic, intrapersonal, and bodily-kinesthetic. These results respond to our first specific objective: to identify the three most predominant multiple intelligences among students in the English class for treatment design based on the UDL approach. Based on the results, the most predominant intelligence among the class was naturalistic. Khan et al. (2024) describe naturalist intelligence as the capacity to identify and classify natural items, including plants, animals, and other objects. Hence, we implemented activities based on ordering and classifying, such as scramble words and people classification. For example, during the scramble activity, we provided some pieces of paper with letters, and students had to arrange them to create words from the vocabulary taught.

The second predominant intelligence was intrapersonal. Intrapersonal intelligence is the capacity to comprehend oneself, develop a functional model that incorporates one's desires, anxieties, and abilities, and use this knowledge to make wise decisions regarding one's life (Gardner, 1999, as cited in Ahmad, 2022). Furthermore, Palenzuela and Reina (2014) explained that providing students with periods to reflect during the lesson is essential for this kind of student. Therefore, we incorporated these periods into our classes, where students had time to reflect on themselves and the lesson. Furthermore, the last intelligence was bodily-kinesthetic, and Nicholson-Nelson (1999) refers to using the body to create things, solve challenges, and express feelings (p.11). Students with this intellect love to move, make, and touch things

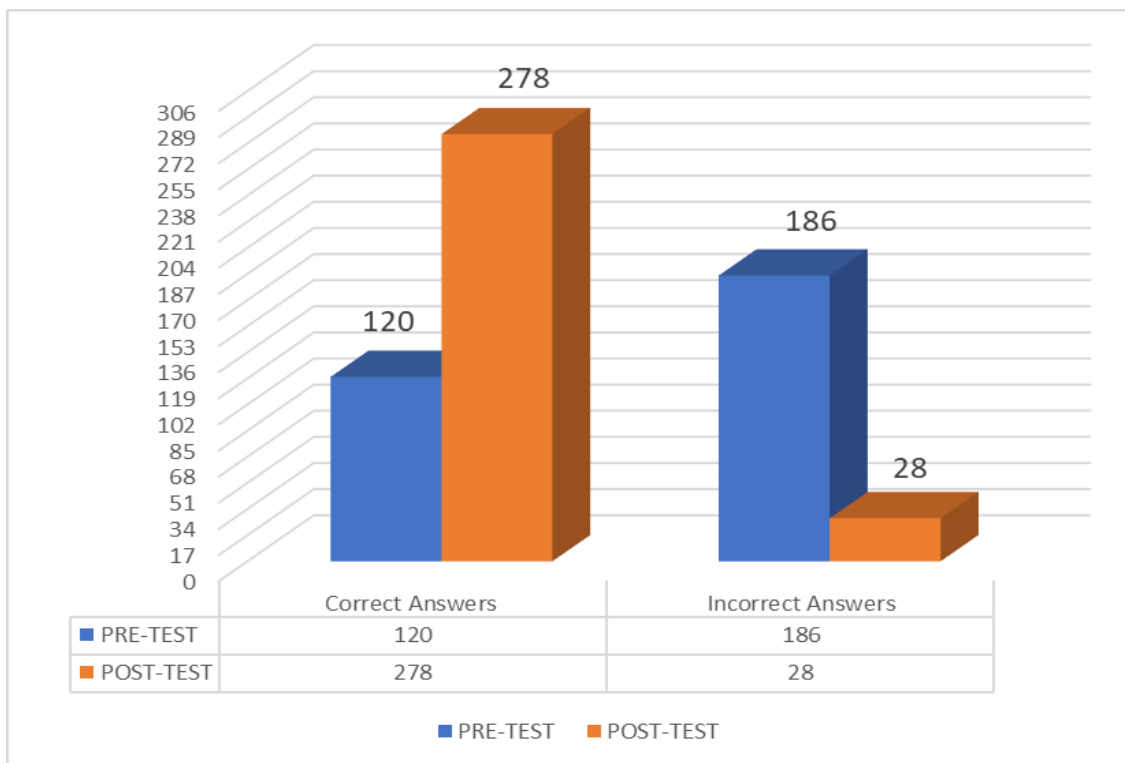
(Ahmad, 2022). Therefore, we implemented activities such as charades, collage creation, and games in which they had to move their bodies.

Finally, understanding the students' predominant intelligence enabled us to design more effective and engaging lessons that leveraged their strengths, aligning with our primary objective. This approach supports the Universal Design for Learning (UDL) principles, which emphasize creating inclusive teaching and learning environments that provide all students with equal opportunities to succeed.

The following graphics represent the analysis of each pre- and post-test section. The blue bars represent the pre-test results, while the post-tests are orange. First, to maintain our participants' confidentiality, we assigned a number for each one. Then, we analyzed each section's correct and incorrect answers obtained by them. The authors carried out the analysis to address our second and third specific objectives: first, to assess the students' vocabulary level before the research treatment to establish a baseline understanding of their vocabulary breadth, and second, to evaluate the students' vocabulary level after the treatment and compare it with their baseline level.

Graphic 2

Vocabulary Test - Writing theaters' parts and filling the gaps



The second graphic shows the first section of the vocabulary test, which involved writing theater parts and filling in the gaps with the correct words. The blue bars represent the correct and incorrect answers of the pre-test. For the first section, out of 306 responses from all participants, 120 were accurate, and 186 were wrong. Furthermore, the orange bars represent the answers received in the post-test. Here, the researchers also obtained 306 answers: 278 were correct, while 28 were incorrect.

In this section, participants answered questions about identifying the parts of a theater and writing their names, for example, *stalls*, *circle*, *curtains*, *etc.* Additionally, they chose words from the word bank to fill sentence gaps about cinema terms. For instance, *dubbed*, *subtitles*, *cast*, *etc.* The following results revealed that this first section of the post-test had more correct

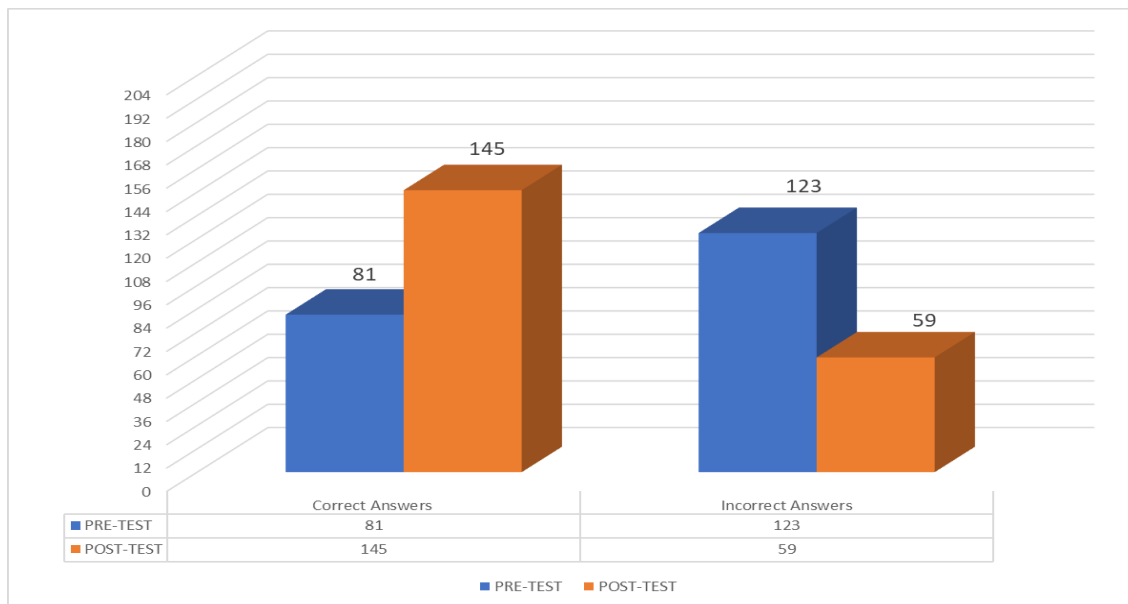
answers than the pre-test. There were fewer incorrect answers on the post-test than on the pre-test, which shows that there has been an improvement in the first section of the post-test.

During the implementation phase, the authors addressed vocabulary in the pre-test, aligning with the teacher's lesson planning. They also applied UDL principles and incorporated the three most predominant intelligences into the lessons. Gómez and Rojas (2024) note that “the application of UDL principles can enhance English language teaching for BGU students by offering flexible instructional methods, diverse materials, and varied assessments accommodating their learning needs” (p. 537). Consequently, the researchers integrated UDL principles into each lesson using various formats, such as videos, music, pictures, and role-playing.

In addition, Almumen (2020) emphasizes that “students should have multiple opportunities to express their learned knowledge. Students should be able to select from multiple options, such as reports, projects, hands-on activities, and technological tools, to express what they have learned” (p. 1). Therefore, the researchers gave students choices for presenting their work, such as drawing, writing, or storytelling. The authors concluded that these elements contributed to improving the post-test results.

Graphic 3

Vocabulary Test - Circle and matching adjectives



The graphic presented pertains to the outcomes derived from the second section of the vocabulary test. This segment encompassed tasks such as circling the correct answers and matching adjectives. The total number of answers for both the pre-and post-test was 204. The blue bars display the number of right and wrong answers obtained in the test before the implementation. Here, 81 answers were correct, while 123 were incorrect. On the other hand, the orange bars show the results after the implementation; here, there were 145 accurate answers and 59 incorrect ones.

The graphic above shows students' improvement regarding section two of the test. During this section, students had to read and circle the correct word among two options to complete the story. In addition, they matched adjectives with their meanings—the number of incorrect answers reduced from 123 in the pre-test to 59 in the post-test. As mentioned above, we continued applying UDL principles, strategies, and multiple intelligences to

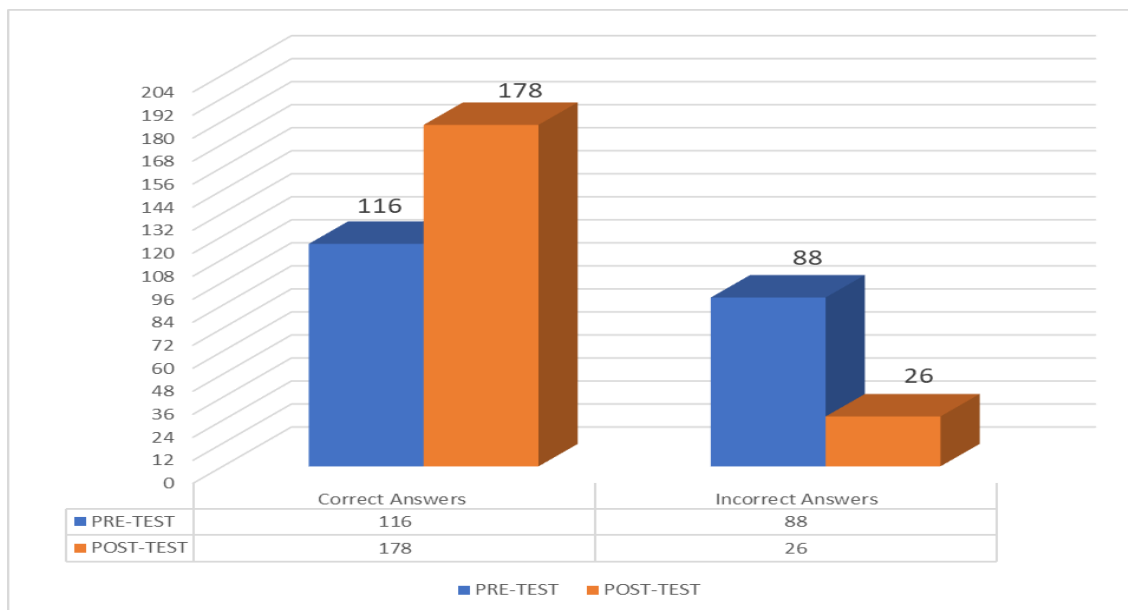
teach. For example, one strategy used was the Frayer model, an instructional strategy that used a graphic organizer to teach vocabulary. According to Dazzeo and Rao (2020), this strategy allows students to visually depict each vocabulary word via synonyms (examples) and antonyms (non-examples), illustrations, and sentence creation. Thus, the researchers applied to help their participants retain the words in the long term and understand them in a broader context, including their characteristics and examples. In addition, this strategy promotes students' critical thinking and helps them connect new words to their existing knowledge, facilitating the integration of new vocabulary.

In addition, the authors included activities in which students learn from the context; in this case, they used readings in which students had to guess the meaning of the vocabulary. The strategy helped them create their own sense of the words. Useini (2023) expressed that “the major way in which vocabulary knowledge can increased is by learning through context. Therefore, teachers should always encourage their students to guess the meaning from context” (p.108).

Even though participants improved their results after the treatment, compared to the other sections, this part was more difficult for the students because there were more incorrect answers. The respondents' negative responses could have been due to several factors, such as the format of the questions, reading understanding, or too many choices that may have confused them.

Graphic 4

Vocabulary Test - Writing picture names and identifying movie genre



The fourth graphic illustrates the results from the final section of the test, which required participants to write the names of pictures and identify the movie genres. In the pre-test, depicted by the blue bars, there were 116 correct and 88 incorrect answers. The post-test results, shown in the orange bars, demonstrate a significant improvement, with 178 correct answers and only 26 wrong answers. There was also an improvement after the treatment for this section, where participants had to see some pictures and write their names. Moreover, they had to read the descriptions and choose the correct movie genre for each one. Students' results showed that they understood the words and used them correctly.

During the last lessons, the researchers conducted activities based on hands-on, creativity, technology, and projects. The previous study by Calderón et al. (2022) stated that UDL techniques guaranteed that students were inspired to actively and independently engage in the

created tasks, thereby improving vocabulary learning in English. It is essential to highlight that looking for different ways of engagement is also crucial when developing lessons based on the UDL approach. Rose et al. (2005) reflect that “not all students get engaged by the same extrinsic rewards or conditions, nor do they develop intrinsic motivation along the same path. Therefore, alternative means of engagement are critical” (p.137). Then, the authors applied tasks where our students could create action figures with plasticine and create colleges with magazines. In addition, they presented the vocabulary through sounds and visual aids that helped students associate with what they were learning.

The results showed that this section was the easiest one, as there were fewer incorrect answers than in the other sections; this was also evident in the pre-test. It was apparent that the participants related some words to their mother tongue, which made them more accessible to answer. For example, “action” is almost the same as in Spanish.

Table 1

<i>Paired Samples T-Test</i>					
Measure 1		Measure 2	t	df	p
Post-test	-	Pre-test	8.656	16	< .001

Note. Results of the pre-test and post-test.

The table above shows the results obtained through Jeffrey's Amazing Statistics Program (JASP). This program helped us to calculate the three most important values to reject the null hypothesis and accept the alternative one. These outcomes were the test statistic (t-value), the probability value (p-value), and the degrees of freedom (df). The p-value has to be less than the standard significance level of 0.05 to ascertain whether there is a difference between the pre-test and post-test results of the participants. According to Bonovas and Piovani (2023), "if the p-value is lower than the 0.05 significance level, the authors reject the null hypothesis and accept the alternative hypothesis" (p.1). Moreover, the general assumption for rejecting the null hypothesis and accepting the alternative hypothesis is: If $T \text{ value} \geq T \text{ table}$, No Hypothesis (H_0) is rejected, and Alternative conclusion (H_a) is accepted.

The degrees of freedom were 16, and the significance level was $\alpha = 0.05$. Then, the t-table for this result was 2.120. The results indicate that the t-value of 8.656 is greater than the t-table of 2.120. Additionally, the researchers reject the null hypothesis since the p-value (.001) is less than the significance level ($\alpha = 0.05$). Therefore, it demonstrates that applying the Universal Design for Learning (UDL) approach increases students' vocabulary.

Based on these results, the authors can affirm that Universal Design for Learning (UDL) had an effect on vocabulary learning among second-grade baccalaureate students, which was evident after comparing participants' results before and after the treatment. The analysis of incorrect and correct answers displayed the most challenging and most manageable sections and

vocabulary taught. Furthermore, UDL represents a practical approach that can be utilized in second language classes, offering numerous benefits for learners.

5. Conclusions

Educators recognize Universal Design for Learning (UDL) as a valuable approach to enhancing students' English vocabulary. This study aimed to determine the effect of applying the UDL approach on increasing students' vocabulary in an English as a Foreign Language (EFL) class. The results showed that using the UDL positively increased students' vocabulary range, as seen in the post-test, with more positive responses on the post-test and fewer incorrect responses compared to the pre-test.

Based on the research findings, implementing the Universal Design for Learning (UDL) approach positively affects vocabulary learning among second-grade baccalaureate students. Moreover, the study achieved its specific objectives, offering valuable insights into vocabulary enhancement. After analyzing the results of the pre-and post-tests, we concluded through statistical analysis that applying the UDL approach increases learners' vocabulary, as corroborated by the t-value and p-value measurements. Therefore, this result supports the alternative hypothesis.

Finally, this study has contributed significantly to the existing literature, as there are limited studies on how UDL is applied in classrooms to improve English as a second language vocabulary. In this study, the authors introduced a variety of materials and innovative strategies, such as the Frayer model—a graphic organizer that aligns with the UDL approach. They applied UDL principles in lesson plans to create an inclusive educational environment that respects and

accommodates the diverse learning styles of all students. In addition, these strategies can also help students develop critical thinking skills as they encourage students to analyze, evaluate, and synthesize information. In conclusion, the results of this study provide strong evidence for the effectiveness of applying UDL to increase students' vocabulary range. Educators should consider the UDL approach in their teaching practices to enhance vocabulary learning and foster an inclusive and dynamic learning environment.

One of the limitations of this study was the absence of a control group. The researchers conducted the study with only one experimental group, which made it impossible to compare results in the post-treatment tests. In addition, without a control group, it was difficult to ascertain whether changes observed in the experimental group were attributable to the intervention or external factors. Since the study involved a small experimental group, researchers may only generalize the results to that specific group. Another limitation was the limited class time, as participants only had a few hours of English instruction per week. It resulted in participants needing to remember the material covered in previous classes or losing interest due to infrequent contact with their English teachers.

5.1.Recommendations

After considering the present study's results, the researchers recommend applying the UDL approach, with its principles and strategies, to help students increase their vocabulary in English as a second language. By enhancing this approach, teachers can provide a more inclusive classroom that considers everyone's needs. Therefore, teachers strengthen students' unique skills and talents by looking for ways for students to engage, practice, and produce the language essential for their professional and personal lives. However, it is crucial to highlight that

policymakers also play a fundamental role in applying new approaches to our Ecuadorian educational context. Then, they should strengthen the application of UDL in the classrooms and monitor its implementation regularly.

On the other hand, after this study's revelations, the authors thought as a short-term priority, future investigators could study some points in more detail. First, prospective research should increase treatments to gather solid data to support how UDL affects vocabulary learning. It can include working with two (control and experimental) rather than one investigation group. These two aspects can provide more robust and convincing evidence essential for practical applications. Furthermore, the researchers suggest applying this study to different and more participants (children and adults) to understand how UDL can affect vocabulary learning in various contexts. Then, it may be possible to make generalizations.

Secondly, even though this research aimed to determine the effect of applying the Universal Design for Learning approach on increasing vocabulary, the researchers thought as a long-term priority, it could be attractive to research how this approach can affect other skills (reading, writing, listening, speaking) in English learning. Then, teachers can have a richer knowledge of integrating this approach into their lessons. Finally, future researchers could conduct qualitative research to understand students' and teachers' perspectives about applying UDL to their classes. This qualitative data would provide insights into the participants' feelings, thoughts, and experiences, allowing for a deeper understanding of the results. Therefore, combining quantitative and qualitative data could give educational stakeholders a solid foundation based on extensive evidence for strategy formation, decision-making, and practical applications of UDL in their practices. However, future researchers must consider the challenges

they may encounter during the investigation. For example, access to the materials and resources needed to implement the lessons can be expensive. Moreover, future investigators needing more software training may find statistical analysis daunting regarding the methodology.

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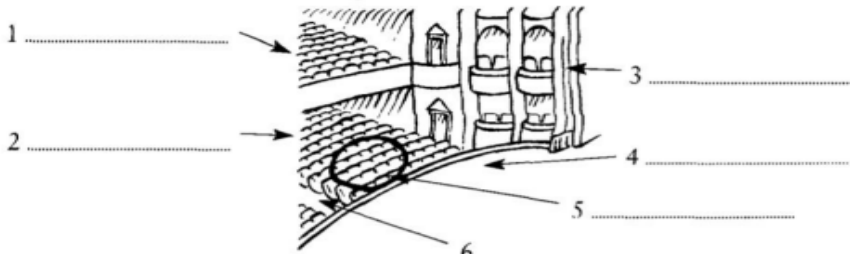
Annexes

(Appendix 1)

Pre-test and Post-test

	UNIDAD EDUCATIVA JAVIER LOYOLA EVALUACIÓN TRIMESTRAL	AÑO LECTIVO 2023 - 2024
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NIVEL:	Bachillerato	CURSO:	Tercero de bachillerato A - B	GRADO:	
ÁREA:	Inglés	EGB/BGU		EGB	
DOCENTE:	Mauricio Sinche		ASIGNATURA:	Inglés	TRIMESTRE:
ESTUDIANTE:				FECHA:	

Indicadores de Evaluación	Items	Valor
INDICADOR DE EVALUACIÓN 1 Learners can identify and use correctly vocabulary related to movies and theaters among multiple choices.	<p>CINEMA AND THEATER</p> <p>1. Write the names of the theater's parts with words from the word bank.</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>Word bank</p> <p>circle stage aisle curtains stalls</p> <p>rows of seats</p> </div> 	6 p
	<p>2. Complete these sentences and dialogues with ONE word from the word bank.</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>Word bank</p> <p>dubbed subtitles cast war critics play director</p> <p>reviews performance musical audience stars</p> </div> <p>1. There was a of hundreds of actors in Titanic – but the of the film, Leonardo DiCaprio and Kate Winslet, both became very famous.</p> <p>2. Steven Spielberg is the famous film who made E.T. and Schindler's List.</p> <p>3. A: When you see an English film in your country, do they have across the bottom of the screen?</p>	12 p



B: Sometimes. But a lot of the films are and have Spanish actors speaking the part in Spanish.

4. A: Have you seen Oliver Stone's Platoon?

B: No. What kind of film is it?

A: It's a Film, set in Vietnam in the late 1960s.

5. We went to the theater to see a by a new dramatist.

6. Have you seen the papers? The new Alan Parker film has got fantastic; most of the think it is the best film he has ever made.

7. A: Have you seen Andrew Lloyd Webber's new? It has some great songs.

B: Yes, I went yesterday. The evening was fully booked but I managed to get two tickets for the matinee.

8. At the end of the show, the stood up and clapped.

BIOGRAPHIES AND MOVIES REVIEW

1. Circle the correct word to complete the text.

Example: Alex had a simple 0. child / childhood in Riobamba.

Alex had a simple 0. *child / childhood* in Riobamba. He had a big dream: to be a filmmaker. Alex kept his passion alive despite 1. *challenges / audience*, as did his family's financial struggles. He taught himself cinematography, soaking up knowledge from library books. With each small 2. *success / stalls*, he grew more determined.

Eventually, Alex's hard work paid off. His films won 3. *awards / casts* at school festivals. Then came the big moment: his 4. *aisle / premiere*. He showcased his latest creation, a heartfelt story set in his hometown.

The premiere marked a turning point, and offers flooded in, which had Alex's 5. *career / stage* taken off. Even when he had many 6. *subtitles / achievements*, he never forgot his roots or the people who supported him. In the end, Alex proved that with perseverance and passion, even the biggest dreams can come true.

6 p



2. Match the adjectives with the definitions.

- | | |
|-------------|-----------------------------------------------------|
| 1. moving | a. exciting and very interesting. |
| 2. slow | b. not serious but enjoyable. |
| 3. violent | c. producing strong emotions, often of sadness. |
| 4. good fun | d. has a big effect on our emotions. |
| 5. powerful | e. includes lots of scenes with fighting and death. |
| 6. gripping | f. boring |

6 p

MOVIES' HISTORY AND GENRES

3. Write the correct word for each picture.

Word bank

character filmmaker crew silent film blockbuster Oscars

6 p



1. _____



2. _____



3. _____




4. _____



5. _____



6. _____

	UNIDAD EDUCATIVA JAVIER LOYOLA EVALUACIÓN TRIMESTRAL	AÑO LECTIVO 2023 - 2024
	<p>4. Write the correct movie genres of each statement.</p> <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> <p>Word bank</p> <p style="text-align: center;">action horror science-fiction comedy</p> <p style="text-align: center;">western thriller</p> </div> <ol style="list-style-type: none"> 1. a film that makes you laugh. 2. a film with cowboys. 3. a film such as Dracula. 4. a film about the future. 5. a very exciting film, often including some kind of crime. 6. the kind of film that often has Jackie Chan or Vin Diesel. <p style="text-align: center; margin-top: 20px;">Source: Adapted test from Test Your English Vocabulary in Use (pre-intermediate and intermediate). Cambridge University Press. Author: Stuart Redman & Ruth Gairns</p> <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> <p style="text-align: center;">Score</p> <p style="text-align: center;">/42</p> </div>	6 p
NOTA SOBRE DIEZ		___/10

(Appendix 2)

Multiple intelligences test

Test de Inteligencias Múltiples Secundaria

CUESTIONARIO DE DETECCIÓN DE LAS INTELIGENCIAS MÚLTIPLES

El objetivo principal de este cuestionario de inteligencias múltiples es identificar y comprender las áreas de inteligencia en las que usted muestra fortalezas y preferencias. Al analizar sus respuestas, se busca proporcionar información útil sobre sus habilidades y potenciales áreas de desarrollo. Esto permitirá adaptar mejor las estrategias educativas o personales para aprovechar al máximo sus talentos y fomentar un crecimiento equilibrado en su aprendizaje.

Nombre y apellidos: _____

Nombre de la Unidad Educativa: _____

Curso: _____

Edad: _____ Fecha: _____

Completa el siguiente cuestionario escribiendo para cada descripción:

1: Te identificas siempre con la oración.

0,5: Te identificas algunas veces.

0: No te identificas nunca.

1 – INTELIGENCIA NATURALISTA	
Disfruto clasificando cosas según sus características comunes.	
Los asuntos ecológicos son importantes para mí.	
El senderismo y el camping me divierten.	
Me gusta cuidar las plantas.	
Creo que preservar nuestros parques naturales es importante.	
Colocar las cosas dándole una jerarquía u orden tiene sentido para mí.	
Los animales son importantes en mi vida.	
Reciclo los envases, el vidrio, el papel etc....	
Me gusta la biología, la botánica y la zoología.	
Paso gran parte del tiempo al aire libre.	
Total	

2 – INTELIGENCIA MUSICAL	
Aprendo fácilmente ritmos.	
Me doy cuenta si la música suena mal o está desentonada.	
Siempre he estado interesado en tocar un instrumento o en cantar en un grupo musical o coro.	

Me resulta fácil moverme según un ritmo concreto.	
Soy consciente de los ruidos ambientales (Ej. La lluvia en los cristales, el tráfico en las calles, etc....)	
Recuerdo las cosas poniéndoles un ritmo.	
Me resulta difícil concentrarme mientras escucho la radio o la televisión.	
Me gustan varios tipos de música.	
Suelo canturrear o tamborilear sobre la mesa sin darme cuenta.	
Me resulta fácil recordar canciones líricas.	

3 – INTELIGENCIA LÓGICO – MATEMÁTICA	
Guardo mis cosas limpias y ordenadas.	
Las instrucciones paso a paso son una gran ayuda.	
Resolver problemas es fácil para mí.	
Me siento mal con la gente que es desorganizada	
Puedo realizar cálculos mentales rápidamente.	
Los puzzles que requieren razonamiento son divertidos.	
No puedo comenzar un trabajo hasta que todas mis dudas se han resuelto.	
La organización me ayuda a tener éxito.	
Me gusta trabajar con las hojas de cálculo o las bases de datos del ordenador.	
Las cosas que hago tienen que tener sentido para mí.	
Total	

4 - INTELIGENCIA INTERPERSONAL	
Aprendo mejor en grupo.	
Me gusta dar consejos.	
Estudiar en grupo es beneficioso para mí.	
Me gusta conversar.	
Me preocupo por los demás.	
Las tertulias de la radio y la televisión son agradables.	
Me gustan los deportes de equipo.	
Tengo dos o más buenos amigos	
Los clubes y las actividades extraescolares son divertidas.	
Presto atención a los asuntos sociales y a sus causas.	
Total	

5 – INTELIGENCIA FÍSICA Y CINESTÉSICA	
Me gusta hacer manualidades.	
Me cuesta estar sentado mucho tiempo.	
Me gustan los deportes y los juegos al aire libre.	
Valoro la comunicación no verbal, (gestos, miradas, lenguaje de signos).	
Un cuerpo en forma es importante para una mente en forma.	
Las habilidades artísticas, (danza, mimo, alfarería, etc..) son divertidos pasatiempos.	
Imito gestos y movimientos característicos de otras personas con facilidad.	
Me gusta desarmar cosas y volverlas a armar.	
Vivo un estilo de vida activo.	
Aprendo haciendo, necesito tocarlo todo.	
Total	

6 – INTELIGENCIA LINGÜÍSTICA	
Me gusta leer toda clase de cosas.	
Tomar apuntes me ayuda a recordar y comprender.	
Me gusta comunicarme con mis amigos a través de cartas, e-mails o mensajes.	
Me resulta fácil explicar mis ideas a otros.	
Tengo buena memoria para los lugares, fechas, nombres, etc....	
Pasatiempos como los crucigramas y las sopas de letras son divertidos.	
Escribo por placer.	
Me gusta jugar con palabras como los anagramas, las palabras encadenadas etc....	
Me interesan los idiomas.	
Me gusta participar en los debates y en las exposiciones en público.	
Total	

7 – INTELIGENCIA INTRAPERSONAL	
Me gusta saber y replantearme mis creencias morales.	
Aprendo mejor cuando el tema "toca mis sentimientos".	
La justicia es importante para mí.	
Suelo aprender de los errores y aciertos que he tenido en mi vida.	
Puedo expresar como me siento fácilmente.	
Trabajar solo puede ser tan productivo como trabajar en grupo.	
Antes de aceptar hacer algo necesito saber por qué tengo que hacerlo.	

Cuando creo que algo vale la pena me esfuerzo al cien por ciento.	
Me gusta participar de las causas que ayudan a otros.	
Me afectan e importan los comentarios que los demás hagan de mí.	
Total	

8 – INTELIGENCIA VISO - ESPACIAL	
Puedo imaginar ideas en mi mente.	
Reordenar y cambiar la decoración de mi cuarto es divertido para mí.	
Me resulta fácil interpretar y leer mapas y diagramas.	
Me gusta ver películas, diapositivas y otras presentaciones visuales.	
Aprendo más a través de imágenes que leyendo.	
Los rompecabezas y los puzzles en tres dimensiones me divierten mucho.	
Suelo dibujar en los libros y cuadernos sin darme cuenta.	
Pintar y dibujar son cosas divertidas para mí.	
Comprendo mejor las cosas a través de gráficos y tablas.	
Recuerdo las cosas imaginándomelas visualmente.	
Total	

Adaptación de Walter McKenzie, 1999

(Appendix 3)

Validation of instruments

Name(s) of students: Giselle Iñaguazo, Pamela Guerrón

The application of Universal Design for Learning (UDL) as an approach to increase third-grade baccalaureate students' vocabulary.

Multiple intelligences test

Objective to be reached: Identify the three most predominant multiple intelligences of the students in the class and analyze them.

Research Question: What are the three most common intelligences among third-grade baccalaureate students?

Objective of the data collection instrument: The objective of the multiple intelligences test is to identify the three most predominant multiple intelligences of the students in the class to create lesson plans focused on these intelligences. In order to evaluate the results a spreadsheet in Excel will be created which will provide us with a quantitative percentage that will show which are the three most predominant multiple intelligences. Finally, the test will take place on the first week of ninth semester practicum.

Instrument to validate the data collection instrument

Instruction: Please indicate your degree of agreement or disagreement on the statements provided below by encircling the number that corresponds to your best to your judgment.

1 – Strongly Disagree

4 – Agree

2 – Disagree

5 – Strongly Agree

3 – Undecided

Criteria

The items in the instrument are relevant to answer the objectives of the study.	1	2	3	4	5
The items in the instrument can obtain depth to constructs being Measured/studied.	1	2	3	4	5
The instrument has an appropriate sample of items for the construct being measured/studied.	1	2	3	4	5
The items and their alternatives are neither too narrow nor limited in its content.	1	2	3	4	5
The items in the instrument are stated clearly.	1	2	3	4	5
The items on the instrument can elicit responses which are stable, definite, consistent, and not conflicting.	1	2	3	4	5
The terms adapted in the scale are culturally appropriate.	1	2	3	4	5
The layout or format of the instrument is technically sound.	1	2	3	4	5

The instrument is not too short or long enough that the participants will be able to answer it within a given time.	1	2	3	4	5
The instrument is interesting such that participants will be induced to respond to it and accomplish it fully.	1	2	3	4	5
The instrument as a whole could answer the basic purpose for which it is designed.	1	2	3	4	5

COMMENTS AND SUGGESTIONS SECTION

1. Do you consider that the proposed items correspond to categories, unit of analysis or variables of the study?

Yes x NO

2. What items would you add or erase?

Perhaps the school information might not be that relevant if you are only applying it in one school.

I wouldn't erase anything, I think they are all important to the study.

3. What other suggestions would you make to improve this instrument?

I would suggest using a Likert scale for each section instead of just giving the students a scale at the beginning of the questionnaire.

Evaluator's Names:

Janina Felisha Quito Ochoa

ID: 0301412003

Academic Degree: M.A Applied Linguistics in the Teaching of English as a Foreign Language.

Signature:



Name(s) of students: Giselle Iñaguazo, Pamela Guerrón

The application of Universal Design for Learning (UDL) as an approach to increase third-grade baccalaureate students' vocabulary.

Multiple intelligences test

Objective to be reached: **Identify** the three most predominant multiple intelligences of the students in the class and **analyze** them.

Research Question: What are the three most common intelligences among third-grade baccalaureate students?

Objective of the data collection instrument: The objective of the multiple intelligences test is to identify the three most predominant multiple intelligences of the students in the class to create lesson plans focused on these intelligences. In order to evaluate the results a spreadsheet in Excel will be created which will provide us with a quantitative percentage that will show which are the three most predominant multiple intelligences. Finally, the test will take place on the first week of the ninth-semester practicum.

Instrument to validate the data collection instrument

Instruction: Please indicate your degree of agreement or disagreement on the statements provided below by encircling the number that corresponds to your best to your judgment.

- | | |
|-----------------------|--------------------|
| 1 – Strongly Disagree | 4 – Agree |
| 2 – Disagree | 5 – Strongly Agree |
| 3 – Undecided | |

Criteria

The items in the instrument are relevant to answer the objectives of the study.	1	2	3	4	5
The items in the instrument can obtain depth to constructs being Measured/studied.	1	2	3	4	5
The instrument has an appropriate sample of items for the construct being measured/studied.	1	2	3	4	5
The items and their alternatives are neither too narrow nor limited in its content.	1	2	3	4	5
The items in the instrument are stated clearly.	1	2	3	4	5
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The instrument as a whole could answer the basic purpose for which it is designed.	1	2	3	4	5

COMMENTS AND SUGGESTIONS SECTION

1. Do you consider that the proposed items correspond to categories, unit of analysis or variables of the study?

Yes X NO _____

2. What items would you add or erase?

I think I would consider adding more questions without making a clear difference among the intelligences (at least so much that they are not so evident for the student). I would also like to say that it may be difficult if you were to have students whose predominant intelligences are more than three.

3. What other suggestions would you make to improve this instrument?

The purpose of your study is then only to identify the predominant intelligences and analyze them a bit. So, I would say that the instrument you're using is rather appropriate. Just try to be careful because in some research the multiple intelligences have been disregarded completely at least in terms of language teaching.

Evaluator's Names:

Angel Eduardo Carrión Espinosa

ID: 0706627312

Academic Degree: English Teacher/ PhD. Candidate

Signature:



Name(s) of students: Giselle Iñaguazo, Pamela Guerrón

The application of Universal Design for Learning (UDL) as an approach to increase third-grade baccalaureate students' vocabulary.

PRE-TEST

Objective to be reached: To measure the vocabulary level of the students before undergoing the research treatment to understand how broad it is.

Research Question: What is the students' prior vocabulary knowledge before the treatment?

Objective of the data collection instrument: The pre-test will be presented ~~as in a form of~~ a B1 vocabulary test. The objective of the pre-test instrument is to measure students' vocabulary level ~~previously-prior to they~~ have undergone the research treatment. We will grade this vocabulary test to get a general vocabulary average of the class. Finally, the pre-test will take place during ninth semester practicum.

Instrument to validate the data collection instrument

Instruction: Please indicate your degree of agreement or disagreement on the statements provided below by encircling the number that corresponds to your best to your judgment.

- 1 – Strongly Disagree 4 – Agree
2 – Disagree 5 – Strongly Agree
3 – Undecided

Criteria

The items in the instrument are relevant to answer the objectives of the study.	1	2	3	4	5
The items in the instrument can obtain depth to constructs being Measured/studied.	1	2	3	4	5
The instrument has an appropriate sample of items for the construct being measured/studied.	1	2	3	4	5
The items and their alternatives are neither too narrow nor limited in its content.	1	2	3	4	5
The items in the instrument are stated clearly.	1	2	3	4	5
The items on the instrument can elicit responses which are stable, definite, consistent, and not conflicting.	1	2	3	4	5
The terms adapted in the scale are culturally appropriate.	1	2	3	4	5
The layout or format of the instrument is technically sound.	1	2	3	4	5
The instrument is not too short or long enough that the participants will be able to answer it within a given time.	1	2	3	4	5
The instrument is interesting such that participants will be induced to respond to it and accomplish it fully.	1	2	3	4	5
The instrument as a whole could answer the basic purpose for which it is designed.	1	2	3	4	5

COMMENTS AND SUGGESTIONS SECTION

1. Do you consider that the proposed items correspond to categories, unit of analysis or variables of the study?

Yes NO

2. What items would you add or erase?

I would not add or erase an item. I would make sure the test is contextualized and relevant to students (see comment below).

3. What other suggestions would you make to improve this instrument?

Be careful with the names of actors/ directors/context clues you use in the test. There are some that are outdated for the students. If students do not know who these people are, they might get the answer wrong because of this factor and not because they do not know the vocabulary.

Evaluator's Names:

Janina Felisha Quito Ochoa

ID: 0301412003

Academic Degree: M.A Applied Linguistics in the Teaching of English as a Foreign Language.

Signature:



Alcance electrónico por:
**JANINA FELISHA
 QUITO OCHOA**

Name(s) of students: Giselle Iñaguazo, Pamela Guerrón

The application of Universal Design for Learning (UDL) as an approach to increase third-grade bacalaureate students' vocabulary.

PRE-TEST

Objective to be reached: To measure the vocabulary level of the students before undergoing the research treatment to understand how broad it is.

Research Question: What is the students' prior vocabulary knowledge before the treatment?

Objective of the data collection instrument: The pre-test will be presented in a form of a B1 vocabulary test. The objective of the pre-test instrument is to measure students' vocabulary level previously they have undergone the research treatment. We will grade this vocabulary test to get a general vocabulary average of the class. Finally, the pre-test will take place during ninth semester practicum.

Instrument to validate the data collection instrument

Instruction: Please indicate your degree of agreement or disagreement on the statements provided below by encircling the number that corresponds to your best to your judgment.

- 1 – Strongly Disagree 4 – Agree
2 – Disagree 5 – Strongly Agree
3 – Undecided

Criteria

The items in the instrument are relevant to answer the objectives of the study.	1	2	3	4	5
The items in the instrument can obtain depth to constructs being Measured/studied.	1	2	3	4	5
The instrument has an appropriate sample of items for the construct being measured/studied.	1	2	3	4	5
The items and their alternatives are neither too narrow nor limited in its content.	1	2	3	4	5
The items in the instrument are stated clearly.	1	2	3	4	5
The items on the instrument can elicit responses which are stable, definite, consistent, and not conflicting.	1	2	3	4	5
The terms adapted in the scale are culturally appropriate.	1	2	3	4	5
The layout or format of the instrument is technically sound.	1	2	3	4	5
The instrument is not too short or long enough that the participants will be able to answer it within a given time.	1	2	3	4	5
The instrument is interesting such that participants will be induced to respond to it and accomplish it fully.	1	2	3	4	5
The instrument as a whole could answer the basic purpose for which it is designed.	1	2	3	4	5

COMMENTS AND SUGGESTIONS SECTION

1. Do you consider that the proposed items correspond to categories, unit of analysis or variables of the study?

Yes _____ NO _____

In this document, I could read the research objective, research question and objective of the research instruments, but I did not find your unit of analysis and variables of the study. I guess your dependent and independent variables, if it is quantitative research are Universal Design for Learning and Vocabulary. Yet, I cannot see the definitions of these terms so I cannot evaluate that item.

2. What items would you add or erase?

None

3. What other suggestions would you make to improve this instrument?

Just to operationalize the variables. It is difficult to evaluate something if you do not have the theoretical referents that you cited in your lit review.

Evaluator's Names:

Uvaldo Recino Pineda

ID: 1756655393

Academic Degree: Magister and PhD

Signature:

**(Appendix 4)****Lesson plans for the treatment**

(Click on the link to see the lesson plans)

[Lesson plan UDL 1st class](#)

[Lesson plan UDL 2nd class](#)

[Lesson plan UDL 3rd class](#)

[Lesson plan UDL 4th class](#)

[Lesson plan UDL 5th class](#)

[Lesson plan UDL 6th class](#)

Lesson plan UDL 7th class**(Appendix 5)****Consent signed by the school's principal**

**CONSENTIMIENTO INFORMADO PARA LA REALIZACIÓN DE
ESTUDIO EDUCATIVO PARA PROYECTO DE TITULACIÓN
EN LAS MODALIDADES PRESENCIAL, SEMIPRESENCIAL E HÍBRIDA**

Azogues, 23 de abril, de 2024

1. DATOS INFORMATIVOS:

1.1. Apellidos y nombres: - Guerrón Ortiz Pamela Nicole - Iñaguazo Vargas Giselle Alexandra	
1.2. Carrera: Pedagogía de los Idiomas Nacionales y extranjeros	1.3. Itinerario: 2do "A" Martes 11:30-13:00 (2 horas) Miércoles 09: 15- 10:00 (1 hora)
1.4. Ciclo: Noveno Ciclo	1.5. Paralelo: 2

Lic. Fernando López

Rector de la Unidad Educativa Javier Loyola

Nosotras, Pamela Nicole Guerrón Ortiz y Giselle Alexandra Iñaguazo Vargas, nos dirigimos a usted muy respetuosamente para solicitar una autorización de ingreso a la Unidad Educativa Javier Loyola, con el objetivo de ejecutar un estudio educativo como parte de nuestro Proyecto de Titulación, el cual se podrá dar en la modalidad que cuente su institución para impartir el estudio antes mencionado. De la misma forma solicitamos su permiso para tomar fotografías, grabar audios o videos de las actividades que se llevarán a cabo.

A continuación, detallamos nuestro estudio educativo:

La aplicación del Diseño Universal para el Aprendizaje (DUA) como enfoque para incrementar el vocabulario de los estudiantes de tercer año de bachillerato.

Objetivo general:

- Determinar el efecto de la aplicación del enfoque DUA en el incremento del vocabulario de estudiantes de tercer año de bachillerato en una clase de inglés.

Objetivos específicos:

- Identificar las tres inteligencias múltiples más predominantes en los alumnos de la clase de inglés.
- Medir el nivel de vocabulario de los alumnos antes de someterse al tratamiento de la investigación para conocer su amplitud.
- Medir el nivel de vocabulario de los alumnos después de someterse al tratamiento de investigación para compararlo con el resultado obtenido antes del tratamiento.

Metodología

El presente estudio tendrá un enfoque cuantitativo, ya que medirá los efectos de la aplicación del enfoque DUA en el desarrollo del vocabulario de los estudiantes de segundo año de bachillerato. Los participantes de la investigación serán 17 alumnos de segundo grado de bachillerato del paralelo A. Como primer paso, se aplicará un cuestionario a los alumnos para identificar las inteligencias múltiples que más predominan. Las investigadoras utilizarán el Test de las Inteligencias Múltiples adaptado realizado por Walter Mackenzie en 1991. Más adelante, se realizará un pretest, el cual será un examen para evaluar el nivel de vocabulario en inglés de los estudiantes antes del tratamiento. El tratamiento de la investigación consistirá en impartir clases basadas en los principios del DUA y aplicando las inteligencias múltiples. Finalmente, después de 6 semanas de tratamiento, se aplicará un post-test para evaluar nuevamente el nivel de vocabulario de inglés de los estudiantes. Estos resultados serán analizados y comparados para ver si hubo o no un incremento de vocabulario.

Luego de lo antes declarado, en pleno uso de mis condiciones mentales, siendo total y enteramente responsable, manifiesto mi disposición para realizar este estudio educativo en la modalidad establecida por la institución educativa.

Esperando su favorable acogida y autorización.

Atentamente,

Pamela Guerrón

C.I. 0151118536

Giselle Iñaguazo

C.I. 0107024275

Autorizado.

Firma: 

Nombres y apellidos: TAVERAS FERNANDO LÓPEZ CESSA

Rector

C.I.: 0300 61854-11



Sello de la institución: _____

(Appendix 6)**Consent signed by the student's parents***(Click on the link to see the parents' consents)***Consent****(Appendix 7)****Correct and incorrect answers- Excel sheet**

SS	PRE-TEST						POST-TEST					
	Section 1		Section 2		Section 3		Section 1		Section 2		Section 3	
	Correct	Incorrect	Correct	Incorrect	Correct	Incorrect	Correct	Incorrect	Correct	Incorrect	Correct	Incorrect
1	8	10	8	4	8	4	18	0	12	0	12	0
2	3	15	1	11	5	7	14	4	7	5	9	3
3	8	10	3	9	7	5	15	3	9	3	10	2
4	6	12	7	5	8	4	18	0	9	3	12	0
5	6	12	7	5	4	8	18	0	8	4	10	2
6	4	14	8	4	8	4	18	0	8	4	10	2
7	9	9	3	9	5	7	18	0	11	1	9	3
8	7	11	4	8	7	5	18	0	12	0	9	3
9	18	0	5	7	8	4	18	0	11	1	12	0
10	10	8	5	7	7	5	18	0	7	5	12	0
11	4	14	4	8	10	2	18	0	8	4	12	0
12	8	10	4	8	5	7	15	3	6	6	12	0
13	4	14	4	8	4	8	18	0	10	2	12	0
14	5	13	6	6	5	7	17	1	9	3	8	4
15	9	9	5	7	11	1	18	0	12	0	12	0
16	5	13	3	9	7	5	18	0	5	7	12	0
17	6	12	4	8	7	5	1	17	1	11	5	7
	120	186	81	123	116	88	278	28	145	59	178	26
	306		204		204		306		204		204	

Pre-test and Post-test results

	Pre-test	Post-test
1	5,71	10
2	2,14	7,1
3	4,28	8
4	5	9,2
5	4,04	8,5
6	4,76	8,5
7	4,04	9
8	4,28	9,2
9	7,3	9,7
10	5,2	8,8
11	4,76	9
12	4,28	7,8
13	2,85	9,5
14	3,8	8
15	5,9	10
16	3,8	8,3
17	4,04	1,6
	/10	/10

Pre-test		Post-test	
Mean	4,48117647	Mean	8,36470588
Mode	4,28	Mode	10
Median	4,28	Median	8,8



**DECLARATORIA DE PROPIEDAD INTELECTUAL Y CESIÓN DE DERECHOS DE PUBLICACIÓN
PARA EL TRABAJO DE INTEGRACIÓN CURRICULAR
DIRECCIONES DE CARRERAS DE GRADO PRESENCIALES - DIRECCIÓN DE BIBLIOTECA**

Yo Pamela Nicole Guerrón Ortiz, portador de la cedula de ciudadanía nro. 0151118536, estudiante de la carrera de Pedagogía de los Idiomas Nacionales y Extranjeros en el marco establecido en el artículo 13, literal b) del Reglamento de Titulación de las Carreras de Grado de la Universidad Nacional de Educación, declaro:

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Ratifico con mi suscripción la presente declaración, en todo su contenido.

Azogues, 19 de agosto de 2024

A handwritten signature in black ink, appearing to read "Pamela Nicole Guerrón Ortiz", is written over a horizontal line.

Pamela Nicole Guerrón Ortiz
C.I.: 0151118536



**DECLARATORIA DE PROPIEDAD INTELECTUAL Y CESIÓN DE DERECHOS DE PUBLICACIÓN
PARA EL TRABAJO DE INTEGRACIÓN CURRICULAR
DIRECCIONES DE CARRERAS DE GRADO PRESENCIALES - DIRECCIÓN DE BIBLIOTECA**

Yo, *Giselle Alexandra Iñaguazo Vargas*, portador de la cedula de ciudadanía nro. 0107024275, estudiante de la carrera de Pedagogía de los Idiomas Nacionales y Extranjeros en el marco establecido en el artículo 13, literal b) del Reglamento de Titulación de las Carreras de Grado de la Universidad Nacional de Educación, declaro:

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Giselle Alexandra Iñaguazo Vargas
 C.I.: 0107024275



**CERTIFICACIÓN DEL TUTOR Y COTUTOR PARA
TRABAJO DE INTEGRACIÓN CURRICULAR
DIRECCIONES DE CARRERAS DE GRADO PRESENCIALES**

Carrera de: Pedagogía de los Idiomas Nacionales y Extranjeros

Yo, Irma Veronica Montes De Oca Sanchez, tutora del Trabajo de Integración Curricular denominado “The application of Universal Design for Learning (UDL) as an approach to increase second-grade baccalaureate students’ vocabulary in English” perteneciente a los estudiantes: Pamela Nicole Guerrón Ortiz con C.I. 0151118536, Giselle Alexandra Iñaguazo Vargas con C.I. 0107024275. Doy fe de haber guiado y aprobado el Trabajo de Integración Curricular. También informo que el trabajo fue revisado con la herramienta de prevención de plagio donde reportó el 7 % de coincidencia en fuentes de internet, apegándose a la normativa académica vigente de la Universidad Nacional de Educación.

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