



**UNIVERSIDAD ESTATAL PENÍNSULA DE SANTA ELENA  
SCHOOL OF EDUCATION AND LANGUAGES  
PEDAGOGY OF NATIONAL AND FOREIGN LANGUAGES**

**“EXPLORING THE ROLE OF NEUROEDUCATION IN  
ENHANCING ENGLISH LANGUAGE TEACHING”  
RESEARCH PROJECT**

As a prerequisite to obtain a:

**BACHELOR’S DEGREE IN PEDAGOGY OF NATIONAL AND FOREIGN  
LANGUAGES**

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**ADVISOR'S APPROVAL**

In my role as advisor of the research paper and title **“EXPLORING THE ROLE OF NEUROEDUCATION IN ENHANCING ENGLISH LANGUAGE TEACHING”** prepared by **FLORES SANTOS ZULEIKA ELIZBETH y PARDO MASAQUIZA LIZBETH ALEJANDRA**, undergraduate student of the Pedagogy of National and Foreign Languages Major at School of Educational Sciences and Languages at Universidad Estatal Península de Santa Elena, I declare that after oriented, studied, and reviewed the project, I approve it in its entirety, because it meets the requirements and is sufficient for its submission to the evaluation of the academic tribunal.

**Sincerely,**



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García Villao Rosa Tatiana, MSc.

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## Statement of Authorship

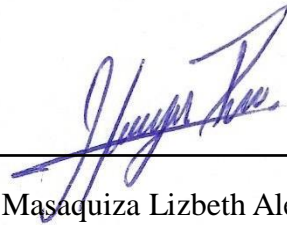
We, FLORES SANTOS ZULEIKA ELIZBETH, with ID number 2450670860 & PARDO MASAQUIZA LIZBETH ALEJANDRA, with ID number 1600827305 undergraduate student from Universidad Estatal Península de Santa Elena, School of Education and Languages, as a prerequisite to obtaining a bachelor's degree in Pedagogy of Foreign Languages, in my role as author of the research project "Exploring the Role of Neuroeducation in Enhancing English Language Teaching", certify that this work is of my authorship, except for the quotes and reflections in this research paper.



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## **Declaration**

The content of the following graduation work named “Exploring the Role of Neuroeducation in Enhancing English Language Teaching” is my responsibility; the intellectual property belongs to Universidad Estatal Peninsula de Santa Elena.

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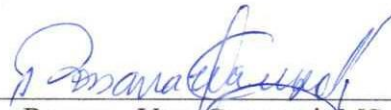
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## **Dedication I**

First, I thank God for giving me wisdom, strength, and hope, because during these years of effort and sacrifice, I needed these spiritual virtues. I thank my parents and siblings, who were my motivation. I valued every effort they made for me.

On the other hand, I thank my friends for providing me with a wonderful friendship. Without a doubt, they made my university years forever imprinted in my mind and heart.

Finally, I thank my thesis partner for giving me her time, patience, understanding, and help during the process of achieving our goal

-Zuleika Elizabeth Flores Santos

## **Acknowledgment I**

This research project is dedicated to my mother, Estelly Santos, who has always been proud of me. Her advice, patience, and support have been my greatest motivation and strength during this time of sacrifice and effort. I also thank my father, Marcos Flores, who believed in me and encouraged me not to give up.

Finally, I thank my brother, Hernan Flores, who, despite having an intellectual disability, had endless unconditional love for me. I am fortunate to have such a loving person who always makes sure I get home safely.

-With love, Zuleika Flores Santos

## **Dedication II**

I want to thank God for giving me the opportunity to be here. I also express my heartfelt gratitude to my aunt, Doris Masaquiza, who has guided me and cared for me, and to my cousin, Kevin Espin, who has accompanied and supported me unconditionally throughout this university stage. No less important, I also want to thank my friend, who, despite the difficulties, helped me through my hardest moments and supported me in my studies without ever leaving me alone.

- Lizbeth Alejandra Pardo Masaquiza

## **Acknowledgment II**

I dedicate this research to my mother, Angelica Masaquiza, whose last wish was for me to accomplish my goals. Even though she is no longer with me, I always carry her in my heart, and she is my greatest motivation to keep improving myself. I also dedicate it to my father, David Pardo, who has supported me throughout this long journey and given me the strength to move forward.

Lastly, I want to thank myself for not giving up despite the challenges that life has presented, for having the strength and determination to achieve my dreams, because life goes on, and this is only my first step toward self-improvement. I know that from heaven, my mother is watching over me and feels proud of me for completing my degree with deep gratitude.

-With love, Lizbeth Alejandra Pardo Masaquiza.

This research explored the role of neuroeducation in improving English language teaching, focusing specifically on how strategies based on the brain's natural learning process improve students' motivation, attention, and memory. The objective of this research was to analyze teachers' different perspectives on neuroeducation and its role in the classroom. To conduct this research, a qualitative phenomenological approach was used to explore the anecdotes of five English teachers in Santa Elena, Ecuador. The teachers shared their different perspectives on the importance of multisensory learning, motivation, and emotions in the educational process through semi-structured interviews with eight open-ended questions. The results demonstrated that the role of neuroeducation in the classroom promotes a positive and inclusive environment in which students feel cognitively stimulated and emotionally supported. Teachers indicated that strategies such as games, songs, visual aids, and recreational activities help students develop English language skills, especially improving their vocabulary. This research also identified challenges such as the different learning levels presented by students, as some students have more advanced knowledge than others, and activities are often not appealing to everyone. However, the overall findings corroborate that neuroeducation strengthens the relationship between cognition and emotions, which allows learning with positive academic results.

***Keywords:*** neuroeducation, motivation, emotionally, multisensory learning.

## **Abstract**

## **Resumen**

Esta investigación exploró el papel de la neuroeducación en la mejora de la enseñanza del inglés, centrándose específicamente en cómo las estrategias basadas en el proceso natural de aprendizaje del cerebro mejoran la motivación, la atención y la memoria de los estudiantes. El objetivo fue analizar las diferentes perspectivas de los docentes sobre la neuroeducación y su función en el aula. Para ello, se empleó un enfoque fenomenológico cualitativo para explorar las experiencias de cinco profesores de inglés en Santa Elena, Ecuador. Los docentes compartieron sus distintas perspectivas sobre la importancia del aprendizaje multisensorial, la motivación y las emociones en el proceso educativo mediante entrevistas semiestructuradas con ocho preguntas abiertas. Los resultados demostraron que la neuroeducación promueve un ambiente positivo e inclusivo en el aula, donde los estudiantes se sienten estimulados cognitivamente y apoyados emocionalmente. Los docentes indicaron que estrategias como juegos, canciones, recursos visuales y actividades recreativas ayudan a los estudiantes a desarrollar sus habilidades en inglés, especialmente su vocabulario. Esta investigación también identificó desafíos como los diferentes niveles de aprendizaje de los estudiantes, ya que algunos poseen conocimientos más avanzados que otros, y las actividades a menudo no resultan atractivas para todos. Sin embargo, los resultados generales corroboraron que la neuroeducación fortalece la relación entre cognición y emociones, lo que permite un aprendizaje con resultados académicos positivos.

***Palabras clave:*** neuroeducación, atención, motivación, emoción, aprendizaje multisensorial.

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## **Introduction**

Neuroeducation stems from the union between neuroscience and education and involves the study of the brain during learning. This helps teachers develop educational strategies adapted to the classroom context through a neurosensory and cognitive process, obtaining meaningful learning. In English language teaching, neuroeducation benefits the classroom by making learning progress natural and enriching for students, highlighting the importance of comprehension, brain plasticity, memory, emotions, attention, and motivation.

International research indicates that neuroeducation optimizes students' linguistic and cognitive skills by transforming traditional classes, which limit abilities, into classes where teachers connect topics with students, improving their attention and cooperation in the classroom, as well as their ability to express themselves in a new language without fear and their retention of information. In Ecuador, English classes require neuroeducation, as students face emotional and cognitive challenges. In the province of Santa Elena, this area of neuroeducation is considered new to many, and teacher training on how to effectively apply these neuroeducational strategies is limited.

This research, conducted at two private educational institutions, Salinas Innova and Lic. Angélica Villón Lindao, analyzes the role of neuroeducation in improving English language teaching, using qualitative methods to analyze teachers' perspectives on this phenomenon. This study collects information on how neuroeducation enhances students' memory, attention, and motivation, which promotes long-term learning.

## **Chapter I**

### **The Problem**

#### **Research Topic**

The role of Neuroeducation in ELT

#### **Title of Project**

Exploring the role of Neuroeducation in Enhancing English Language Teaching.

#### **Problem Statement**

The field of neuroeducation is becoming increasingly important in today's world, as it provides insight into cognitive functions such as learning, memory, and attention; therefore, brain plasticity is an important element within this field. Madua (2022) states “that out of all the organs, only the brain can learn new information and teach itself. It refers to the brain’s capacity to change and adapt to the environment and experiences lived by the individual” (p. 41).

It is important for teachers to identify learning styles in the classroom, to help students understand the information being taught and excel in their learning. These different learning styles include cognitive and affective aspects that each student displays when solving a task, and this is where the strategies applied by the teacher for teaching and learning are reflected (Ponce, 2021).

Neuroeducation is incorporated into these strategies, reinforcing the ability to understand and retain information. Furthermore, neuroeducation promotes the use of strategies based on multiple senses, through sensory input such as visual, auditory, and kinesthetic practices. These

strategies focus on emotional interaction, social interaction, and brain plasticity, transforming the English language classroom into a place conducive to natural learning, leading to better academic results (Castro et al., 2025).

In this context, neuroeducation emerges as a field that understands brain function, providing greater training to design teaching methodologies and techniques for better learning outcomes, skills development, and greater motivation on the part of students to learn English. Neuroeducation focuses on developing educational strategies based on knowledge of the brain, creating a natural teaching environment that adapts to the rhythm and function of the brain, motivating students to learn English (Quinapallo, 2025).

At the Salinas Innova and Lic. Angélica Villón Lindao private educational institutions, traditional teaching methods have continued to be used for teaching English, which based on memorization and repetition. Although these methods are useful in some cases, they generally fail to meet students' emotional, motivational, and cognitive needs. As a result, students' academic performance has been poor; this is why neuroeducation intervenes in this teaching process.

### **Justification**

Effective language teaching and acquisition is increasingly crucial, especially in the case of English. Education systems must provide students with the resources and skills necessary to develop their academic performance so that in the future they can function in a real-life workplace where English is extremely significant. Furthermore, given their still-developing brains, adolescents sometimes struggle to control their emotions and behavior. To satisfy their needs, the teaching-learning process must support, inspire, and encourage them to learn English.

Neuroeducation shares many aspects with the science of learning, which recognizes and promotes the importance of interaction between different fields of study. It uses various methods and techniques to understand how learning is produced, with the aim of improving this process for everyone (Sawyer, 2024).

By combining the ability to understand how knowledge under attention, motivation, cognitive function, and memory interact with teachers' practical experience, there is the potential to improve educational outcomes. By sharing evidence-based knowledge to offer an alternative perspective on the teaching-learning process, the inclusion of neuroscience in teacher training programs can improve the quality of teaching.

Educators have the power to establish the conditions necessary for the acquisition of experience and knowledge that the learning brain will store. Given this, the use of a scientific approach in education can inspire educators to consider the learning process more closely, resulting in pedagogical reforms and improved learning outcomes (Luzzatto et al., 2024).

Neuroscience training is believed to improve education by providing teachers with a greater arsenal of resources to help diverse students with significant individual differences or by enhancing the use of pedagogical and teaching practices linked to active learning (Privitera, 2021).

The study conducted at the private educational establishments Salinas Innova and Lic. Angélica Villón Lindao provides teachers with neuroeducational strategies that strengthen motivation, attention, and memory, allowing them to better manage the different learning styles presented by students in the classroom.

Additionally, this research will contribute to the professional advancement of teachers at both educational institutions by expanding their knowledge of innovation and neuroscience-based pedagogical tools, and by achieving positive student learning outcomes and teacher development through the establishment of an effective, stable, and motivating teaching-learning environment.

## **Problem Formulation**

### **Problem question**

- What is the role of neuroeducation and how does it enhance English language teaching?

### **Specific questions**

- How does the application of neuroeducation enhance students' motivation and academic performance when teaching English?
- What positive and negative aspects do teachers identify when applying neuroeducation to their English language teaching?
- How do teachers perceive neuroeducational strategies and the development of language skills within meaningful learning?

## **Objectives**

### **General Objective**

To Explore the role of neuroeducation in English Language acquisition in the private educational units, Salinas Innova and Lic. Angélica Villón Lindao.

### **Specific Objectives**

- To identify the main principles of neuroeducation that are relevant for their application in various English language teaching methodologies.

- To understand how teachers at the private educational institutions Salinas Innova and Lic. Angélica Catalina Villón Lindao perceive the application of neuroeducation in language teaching.

- To analyze how neuroeducational strategies enhance students' attention, motivation, and skill development in the English class.

## Chapter II

### Theoretical Framework

#### Background

This research constructs a theoretical framework based on the search and analysis of information from validated sources on neuroeducation and its study approaches applied to methods aimed at teaching the English language. Within this framework, specific concepts based on neuroscience, cognitivism, neuroplasticity, pedagogy, and psychology are established, providing theoretical support for this research work.

Considering the importance of teaching English as a global language, educators develop specific skills, such as mastery of students' emotional and cognitive processes, which is essential for training foreign language teachers, in this case, English (Sawalmeh and Dey, 2023). To improve teaching and learning, education and neuroscience merge. Neuroeducation works by optimizing the acquisition of a new language; this process involves emotional connection, sensory perception, and cognitive progress (Cubo and Sánchez, 2025). The principles and perspectives of neuroeducation have the potential to transform teaching and learning. This field aims to investigate and understand the fundamental processes that govern the human brain and thus influence the learning process and, in turn, establish better pedagogical approaches, teaching methods, educational policies, and, ultimately, individual learning routines. Neuroeducation recognizes the cognitive individuality of each student, highlighting the different learning needs and preferences that teachers can discover in an educational environment (Pappas, 2024).

Education connects different fields such as neuroscience, pedagogy, psychology, and the environment in which students operate to generate knowledge through learning development;

neuroscientific discoveries have helped us understand how brain events are associated with the environment, cognitive functions, and emotional aspects, which foster learning and contribute to meaningful learning (Tortella et al., 2021). Neuroeducation not only supports the development of future educational programs but also plays an active role in early identification of potential learning difficulties, enabling the implementation of customized solutions to help students reach their full potential (Paniagua, 2025). If teaching is the act of promoting learning activities through acquired knowledge and discovery, pedagogy refers to the strategies and methods teachers use to promote learning, as well as to teaching principles and practices. It involves studying the most effective ways to teach, how students learn, and the optimal ways to organize educational experiences to foster meaningful and lasting learning (Creatrix, 2023). On the other hand, educational psychology focuses on the learning process of students, integrating both regular and gifted students. It includes the learning process, teaching methods, individual differences in learning processes, students' academic achievement, individual disabilities, and gifted students. Psychologists working in this field of psychology are interested in understanding how individuals acquire and retain new information (Training, 2022).

The study of the brain's nervous system, neuroscience, helps create strategies that benefit teaching, achieving better results in the acquisition, storage, and implementation of knowledge acquired by students. By understanding the function of the brain, teachers are better equipped to provide quality classes that benefit all students in the classroom. To capture students' interest, it is necessary to motivate them to learn because this reduces their attention problems and increases their capacity for self-knowledge. For this reason, it is important to set positive expectations for students, avoiding unnecessary overexertion, academic stress, and the feeling of dropping out early. Therefore, it is essential to understand how neuroeducation connects with pedagogy,

addressing brain function and structure, such as attention, emotions, and memory, thus implementing a better teaching method (Espinoza et al., 2021). Furthermore, the brain's ability to change and adapt to experience is known as neuroplasticity. It is a general term that refers to the brain's ability to modify, restructure, or create neural networks. This can refer to structural modifications related to learning or functional changes related to brain damage (Cherry, 2024).

## **Pedagogical bases**

### **Cognitivism theory**

Piaget (1936) in his theory of cognitivism, states that cognitive development encompasses knowledge, comprehension, and understanding skills. When building his cognitivist theory, Piaget presented several ideas based on his study of how children develop their thinking abilities, including the construction of knowledge through experiences, learning without the influence of others, and children's natural motivation to learn (Rabindran and Madanagopal, 2020).

Jean Piaget identifies four stages of cognitive development, and they are:

First stage, sensorimotor: This stage begins at birth and lasts until around age two. During this period, infants develop their motor skills and engage in exploration through their senses, building small understandings of their interaction with the environment.

Second stage, preoperational: From ages two to seven, children in this stage do not yet apply logical principles, as their reasoning is influenced by their perception of things.

Third stage, concrete operation: From ages seven to eleven, children begin to use logical principles and can think from multiple perspectives about a situation.

Fourth stage, formal operation: This stage begins around age twelve and continues into adulthood. At this stage, reasoning is no longer limited; children develop ideas, principles, and theories. Abstract thinking emerges, and adolescents begin to understand concepts such as right and wrong, politics, ethics, and morality. Here, Piaget describes reflective abstraction as a key process of this stage, where students engage in reflection and self-thinking, a process known as metacognition, which allows them to evaluate, plan, and measure their cognitive strategies (McLeod, 2025).

Neuroeducation replaces traditional teaching methods with one in which educators transform pedagogy through strategies that activate students' cognitive development. This is where cognitivism is present here, focusing on the development of thinking, its construction from experiences and exploration of the environment, providing meaningful long-term learning without intermediaries or memorization. Neuroeducation, along with cognitive theory, proposes an education grounded in understanding how the brain works, emphasizing an effective educational framework. The purpose of creating didactic methods that incorporate students' cognitive abilities is crucial to understanding the stages of cognitive development outlined by Piaget, which helps in designing appropriate methods and strategies for each cognitive stage of the learner (Pradeep et al., 2024).

## **Theoretical basis**

### **Neuroeducation**

Neuroeducation, also known as educational neuroscience, is connected to psychology and pedagogy and aims to transform educational practices by applying knowledge of brain plasticity and neuronal dynamics to improve learning outcomes and student engagement. Therefore, to

describe neuroeducation, it is necessary to first understand how each discipline is conceptualized separately and how they interact to form this new field of study (Butavand et al., 2020).

According to Gkintoni (2023), Educational neuroscience, also known as neuroeducation, is a rapidly expanding interdisciplinary field that studies and integrates findings, theoretical frameworks, and approaches from pedagogical and cognitive sciences, brain sciences, psychology, and other disciplines. Neuroscience and education are closely intertwined and interact with the ultimate goal of improving learning and teaching (p. 147).

### **Pedagogy**

On the other hand, pedagogy is the art or science of educating children, synonymous with education and teaching, especially in the academic field. Throughout history, educators and philosophers have discussed various pedagogical perspectives on education and have suggested many techniques and theories. Teachers use extensive research and discussions about learning theories to develop their own pedagogy and are often challenged to integrate new technologies into their teaching methods (Kumar, 2021).

### **Psychology**

As the State University of New York at Fredonia (2024) points out Psychology is the scientific study of the mind and behavior. It delves into various facets of human thought processes, emotions, motivations, and actions. By understanding psychology, we gain valuable insights into why individuals behave the way they do and how they interact with others.

### **Neuroplasticity**

The brain's ability to modify its knowledge is known as neuroplasticity. This has significant implications for education, suggesting that learning is not fixed or predetermined, but rather influenced by a person's organic makeup and environment. This understanding of neuroplasticity has led to a shift in educational approaches, emphasizing the need to create environments that support the development of neural mechanisms and learning (Jolles and Jolles, 2021).

Piaget's theory is closely linked to neuroeducation, as it shows how students process information at different stages, something neuroscience supports with evidence on brain plasticity, memory, and executive function. Using Piaget's theory of cognitive development in teaching English to adolescents offers a fundamental understanding of the learning process. Adolescents go through several stages of cognitive development, so it is critical that their educational experiences are aligned with their cognitive stage (Jingyu, 2023).

## **Legal Basis**

### **Constitución de la República del Ecuador**

According to Articles 26 and 27, education is recognized as a right for all people and a responsibility of the state, with its objectives directed towards comprehensive inclusion where teaching stimulates creativity, critical thinking, and is of high quality. Neuroeducation, as a discipline, promotes teaching by considering how the brain acquires learning, including the important contributions of neuroscience, psychology, and pedagogy to the teaching and learning processes. Likewise, the constitutional articles state that education must respect diversity, promote holistic development, and guarantee equal opportunities, which is only possible if it is

recognized that each brain acquires knowledge in different ways and the strategies applied by teachers must be adapted to the needs of each student.

### **Ley Orgánica de Educación Intercultural (LOEI)**

Article 3 emphasizes that the intercultural and bilingual District Level must support quality and equity in education, fostering inclusive, relevant education adapted to the cultural and linguistic context of each community. This implies that teaching must consider the characteristics, needs, and sociocultural realities of students, thus aligning with the principles of neuroeducation, since each student learns according to their environment, emotions, experiences, and culture. For this reason, educational administration that values linguistic diversity and interculturality allows for the development of support strategies for language teaching, such as English.

According to Article 10, regarding curricular adaptations, the national curriculum can be supplemented and adapted according to the cultural, territorial, and educational characteristics of each institution. Furthermore, it allows institutions to propose innovative approaches to improve the quality of teaching. This aligns directly with neuroeducation, as both develop flexibility, innovation, and personalized learning. This discipline maintains the brain's natural learning processes, so methods, strategies, resources, and activities must be tailored to the cognitive, emotional, and social needs of each student.

## **Chapter III**

### **Methodological Framework**

#### **Method**

##### **Qualitative Methodology**

According to Tenny et al. (2022) qualitative research is a type of research that explores and provides deeper insights into real-world problems. Instead of collecting numerical data points or intervening or introducing treatments, just like in quantitative research, qualitative research helps generate hypotheses to further investigate and understand quantitative data. Qualitative research gathers participants' experiences, perceptions, and behavior. It answers the how's and whys instead of how many or how much (parr.5).

This research uses a qualitative methodology based on phenomenology. This method emphasizes data analysis, focusing on specifying perspectives on everyday life. This phenomenology exposes teachers' different experiences and perceptions when applying neuroeducation in English classes, drawing on research on brain function, psychology, pedagogy, and the environment. This allows us to delve deeper into the knowledge of the interviewed teachers and obtain a detailed definition of the phenomenon studied. To achieve the objectives of this research, the phenomenon is examined from each teacher's personal perspective, obtaining different points of view but with a common objective, and understanding different research concepts within the study of neuroeducation (De Ortega and Cortés, 2021).

#### **Type of Research**

##### **Phenomenological studies**

As Badil et al. (2023) indicates, phenomenology is the method of inquiry of interpretive paradigm. It is also best known as the science of the essence of consciousness and perception, which describes the idea and meaning of the lived experience of individuals. Moreover, the core element of phenomenology is to understand phenomena like caring, healing, and wholeness as witnessed by a specific person who has lived through that event. Phenomenology is the inquiry method that deals with human experience in which individuals perceive them as appearing to consciousness. Individuals share their lived experiences robustly when they go through that phenomenon (p. 9).

To understand this phenomenon, interviews are used to explore the different experiences and perspectives of the interviewed teachers. Qualitative interviews are flexible and allow the researcher to delve deeper into the researched topics, deepening the conversation in a natural and informative way (Chand, 2025). This is where open-ended questions come into play as a research tool that includes questions such as “What,” “How,” and “Why” and is more appropriate for complex, exploratory, evaluative, or theoretical questions (Amberscript Global B.V., 2023).

## **Data collection techniques**

### **One-on-one interview**

The research exploring the role of neuroeducation in English language teaching will involve face-to-face interviews with each teacher, using eight open-ended questions to understand their different perspectives, experiences, and knowledge regarding the application of this neurological science to methods and strategies for improving students' English language learning. The interviews will be conducted in person, fostering dialogue between the interviewers and the teachers

## **Instruments**

### **Questionnaire**

#### **See Annex B**

A questionnaire is considered a data collection method consisting of several questions or items used to obtain information from participants and, thus, to comprehend their findings, perceptions, ideas, knowledge, and behaviors. This concept is based on the positivist philosophy, which considers methods primarily as a set of codes for the generation of information (Caduff and Ranganathan, 2023). This definition highlights the importance of questionnaires for this study on the role of neuroeducation in enhancing English language teaching.

Questionnaires are commonly used in educational research to gather information on the topic of study. Because they are easy to administer and allow for obtaining interesting information in a short time, students conducting qualitative research, usually for a thesis or dissertation, often choose to use them (Holmes, 2023).

### **Type of questions**

#### **Open-ended questions**

According to Komildjanovna (2024) “Open-ended questions encourage detailed responses and promote deeper conversation. They can be crucial in interviews to gauge a person's thoughts, feelings, and experiences. From different sources or studies, it is well-known for everybody that open-ended questions require more than a simple one-word answer” (p.1).

Open-ended questions encourage exploration of a topic; respondents can choose what to say and how much detail to include. They are allowed to share their answers in a more elaborate way, rather than being limited to a single word or short phrase (Rosala, 2024).

### **Population and Sample**

A population integrates all individuals relevant to a given topic who possess the necessary principles, knowledge, and experience, representing the broader group to which the research results will be applied. This study explores the role of neuroeducation in improving English language teaching. For this reason, the population consists of English teachers who apply this discipline through strategies designed to make classes more interactive and engaging.

The sample comprises a group of selected participants who provide important information for this research. For this reason, this study included English teachers from two private institutions in Santa Elena, Ecuador, chosen according to established guidelines.

Four teachers were selected from one institution and one teacher from the other. These teachers apply neuroeducation to the teaching of English to elementary school students. Their knowledge and experience will provide accurate information on how neuroeducation improves English language teaching.

This study provides information on the incorporation of neuroeducation in classrooms that will allow us to understand and explore broad concept of how neuroeducation is applied professionally, helping to achieve success in students' academic outcomes.

## Chapter IV

### Analysis of the Findings

#### Brief Explanation of the Findings

This chapter analyzes the information gathered from interviews with five English teachers: four from Salinas Innova and one from Lic. Angélica Villón Lindao. The objective of this interview is to explore educators' different perspectives on the role of neuroeducation in enhancing English language teaching, focusing on memory, emotions, the environment, and neuroeducational strategies applied in the classroom. These strategies are based on the benefits, principles, challenges and their application in the classroom, considering how the brain works, and the students targeted by this neuroeducational pedagogical approach.

The data collection was carried out according to the established schedule and the availability of the teachers. The interview presented challenges such as time constraints to conduct the intervention, as the teachers were in meetings and completing grading. Another issue was the noise from the school, which occurred during breaks and free time.

Despite the complications that arose, data collection was successful, encompassing each aspect and the varied opinions of teachers, which helped to understand the different aspects of the research. The responses obtained are understood according to the research topic through qualitative phenomenology, identifying Piaget's theory of cognitive development, neuroplasticity, the pedagogical foundations of neuroeducation, and how the brain learns.

The qualitative analysis brings many different pedagogical approaches, including methods and techniques that focus on motivation, emotions, and multisensory strategies. It mentions games, songs, visual materials, hands-on activities, and technological tools that

stimulate memory and attention, which have proven to be innovative for teachers and generate positive academic results for students. However, there are also challenges related to different learning styles, lack of parental participation, and limited information and formation of the educational unit in neuroeducation.

**Table 1**

*Teachers' Perceptions about the Role of Neuroeducation in enhancing English Language Teaching.*

<b>Question</b>	<b>Interviewee 1</b>	<b>Interviewee 2</b>	<b>Interviewee 3</b>	<b>Interviewee 4</b>	<b>Interviewee 5</b>
<b>What do you know about neuroeducation and its role in the academic field?</b>	Psychological educational practices; effective learning; understanding brain development and students' needs.	Brain Functioning in the Learning Process.	How the brain learns to study English.	Development in the learning process; detecting and addressing limitations.	Emotions in learning applied to the creation of activities.
<b>Why do you consider neuroeducation important for teaching English?</b>	Different learning and teaching processes, adaptation to needs.	Understanding new strategies or methodologies and the learning process.	Improving English Learning.	Curricular adaptations to student needs and the recognition of emotions and their information processing.	Managing emotions and creating effective teaching and learning activities.
<b>How do you incorporate strategies based on brain function into your English?</b>	Visual aids make grammar easier and capture attention.	Generate debates; games and practical activities according to different learning styles.	Stories; songs; books; use of technology; and a plan where you read and look for the correct answer.	Designing teaching materials, educational resources, and kinesthetic strategies.	Activating emotions by developing their ability to learn.
<b>How have neuroeducation-based teaching methodologies, strategies, or activities benefited students' attention, memory, and motivation in learning English?</b>	Motivation is more important than memorization, capturing everyone's attention.	Engage students, vocabulary acquisition, confidence, and non-repetitive classes.	Motivation is a key part of engaging students to learn a new language.	Adaptation of teaching resources; the way the teacher teaches allows the student to process that information and acquire knowledge.	It maintains cooperation; it doesn't distract their cognitive process, improving performance.

<b>What changes have you perceive in students' academic performance when applying neuroeducation strategies?</b>	Not everyone shows positive results because not everyone has the same educational demands; it's necessary to understand the different types of learning.	Students show confidence in using the language, changing their perception of the new language.	They have fun studying, deepening their comprehension, and technology is used as a tool.	Pros and cons depend on the strategy; they benefit from understanding the activities.	A hilarious situation improves student performance; the better they feel, the better their grades.
<b>What challenges have you faced when applying neuroeducation in English classes?</b>	The resources available for classes.	Not everyone has the same learning style; varying the activities according to the class; differences in language performance.	The varied level of students.	Collaboration from home that affects students.	Lack of information or knowledge about new educational trends.
<b>What resources do you consider necessary to develop neuroeducation in English language teaching?</b>	Today's teaching requires better visual and kinesthetic resources, using technological resources appropriately.	Have enough teaching materials; use visual resources, practical activities, clear instructions, and an appropriate environment.	They learn depending on the way they're taught, so all resources are good.	Using pictograms; music; support from the psychological department; and resources adapted to different learning styles.	Technological resources; gamification activities.
<b>What recommendations would you give to future teachers for applying neuroeducation in the English classroom?</b>	Consider, motivate the entire class equally.	Engaging lessons; putting yourself in the student's shoes; looking for additional resources.	Using gamification.	Apply emotional intelligence; design teaching resources for all learning styles; understand the students' backgrounds.	As a teacher, motivate yourself, feel good, and don't reflect your poor state on your students.

### Interpretation of Data from the Interview

Question number one: **What do you know about neuroeducation and its role in the academic field?** Teachers from both educational institutions expressed that neuroeducation is a science that links neuroscience and pedagogy to improve academic performance. This initial data collection identifies the fundamental principles of neuroeducation that can be applied to English

language teaching, namely the connection between neuroeducation and information processing in the brain during learning. It also stresses the importance of combining emotions with neuroeducation, since when teachers know how to manage students' emotions, they can create activities that generate positive results.

Neuroeducation is a science that is based on the understanding of cognitive processes to improve teaching and seeks to develop pedagogical procedures that improve the potential of the brain's natural learning mechanisms, combining knowledge of pedagogy, psychology and neuroscience (Alonso, 2024). Teachers' goal is for students to learn, incorporate, and retain information so they can use it in real life. Therefore, an essential part of being a teacher is understanding how to improve the classroom environment, whether virtual or physical, so that neural connections and neuronal excitability can be easily modified, thus achieving learning. Understanding how the brain works in an educational setting can help optimize our teaching methods and the education of our students (Imad, 2022).

Question number two: **Why do you consider neuroeducation important for teaching English?** This question explored teachers' perceptions of neuroeducation and its relevance to language teaching. Teachers indicated that neuroeducation helps them adapt their classes to different learning needs and styles, recognizing that each student is unique and that this field allows for the application of diverse strategies that yield successful results. They believe that understanding how the brain functions during knowledge acquisition facilitates the implementation of strategies tailored to the diversity of learning processes, since teaching English is not limited to the repetition of grammar or vocabulary exercises, but also involves finding other ways to enhance learning, such as recreational activities.

Neuroeducation contributes a transformative approach to English language teaching by linking teaching methods with the brain's biological learning processes. By understanding how mental, emotional, and sensory processes interact during English language learning, educators can develop more innovative learning exercises. Implementing neuroeducational principles in English language teaching not only improves communication skills but also promotes student development (Askarbaevna, 2025).

Question number three: **How do you incorporate strategies based on brain function into your English?** In response to this question, educators stated that the most effective strategies include games, bingo, music, visual aids, stories, the use of technology, and worksheets. These strategies allow students to focus on grammar, make learning fun with music, facilitate vocabulary acquisition in a simple way, and utilize real-life resources that engage their senses in the learning process. They also stated that motivation and attention are more important than memorization when learning English. Without motivation, students do not pay attention and, therefore, cannot understand or process the information. In the classroom, it is essential to implement these cognitive processes through curricular adaptations when teaching students with special educational needs. This leads us to an analysis of how neuroeducational strategies improve students' attention, motivation, and skill development in the English classroom.

The brain is responsible for our thinking, learning, and memory. It's necessary to understand neuroscience to understand the most practical ways to teach and learn. The ability to think, speak, feel, see, hear, remember things, and even breathe is under the control of the brain. Educators and educational institutions around the world use methodologies and programs derived from brain-based learning, known as neuroscience, in their classrooms (Uden, 2023). Educators apply methods to improve their understanding of students' learning abilities and

address motivational issues, as student motivation fosters success in foreign language learning and social integration. It also promotes discipline, responsibility, confidence, and competencies, which ultimately lead to academic success (Grefa et al., 2024).

Question number four. - **How have neuroeducation-based teaching methodologies, strategies, or activities benefited students' attention, memory, and motivation in learning English?** This question also connects to the objective of analyzing neuroeducational strategies in improving student attention, motivation, and skill development in the English classroom. Teachers affirm that motivation and emotions are key elements for meaningful learning. They also emphasize that the way a teacher demonstrates these elements influences student performance. If a teacher displays negative feelings, these will be reflected in the students, affecting their performance. When teachers demonstrate positive emotions and behaviors, they achieve better academic results, greater collaboration, participation, and information retention without the need for rote memorization. Educators' experience shows that neuroeducation, in addition to improving cognitive skills, also increases emotional intelligence. In the view of Martínez (2024) “by utilizing neuroscience-based approaches, such as incorporating multisensory learning and providing positive feedback, instructors can create more effective and motivating learning environments” (p. 19, 20).

During learning, emotions influence students' attention, behavior, and thoughts; on the other hand, motivation has a positive effect, producing the desire to pay attention to the subject being taught. This may be to improve their grades, to be a better student, or simply because they are interested and engaged in what the teacher is discussing. Emotions and motivation go hand in hand; they are key to showing improvements in the academic performance of high school students (Acatrinei, 2024).

Question number five. - **What changes have you perceived in students' academic performance when applying neuroeducation strategies?** Educators report that, by implementing neuroeducational strategies, students demonstrate greater autonomy, confidence, and effectiveness in class. Improvements in information comprehension and retention are observed, with a greater impact when the strategies relate to everyday life. Despite this, it is noted that not all students learn in the same way or at the same level, so these strategies are constantly being applied. This relates to identifying the fundamental principles of neuroeducation that are relevant for their application in various English teaching methodologies.

By applying neuroeducational strategies, participation, reflection, critical thinking, creativity, and problem-solving are encouraged by developing learning activities that engage students in the content taught in class. As stated by Palma-Menéndez et al. (2025) the integration of playful activities, dynamics and neurodidactic tools promotes students' active participation and interest, while the generation of positive emotions and their regulation increases engagement and information retention. Teacher professionalization in these areas allows for the adaptation of pedagogical practices, strengthening the teacher-student relationship and creating a positive learning environment that maximizes academic performance (p. 21).

Question number six: **What challenges have you faced when applying neuroeducation in English classes?**

By understanding how educators perceive the application of neuroeducation in language teaching, we realize that there are some challenges teachers point out. When not all students learn at the same pace, it becomes an obstacle where not all activities are successful for everyone, and this is where necessary adjustments are made to adapt them for the entire class. Another challenge is a negative home environment; the problems students face at home often

affect their emotions and academic performance. The lack of support from the educational institution is also mentioned, leading to the need to implement ongoing training and encourage parental cooperation.

Teachers who teach students in their classes realize that their students are different. Students are different in many aspects, such as ability, interest, readiness, and learning profile, so teachers need to cope with this kind of student diversity. Teachers need to implement a teaching approach to cater to the diverse needs and characteristics of students. The diversity of students needs a learning strategy to accommodate it in the class (Anggraeni and Yusviranty, 2024).

Question number seven: **What resources do you consider necessary to develop neuroeducation in English language teaching?** To identify the key neuroeducational principles relevant to their application in various English teaching methodologies, teachers consider resources such as books, games, music, videos, pictograms, and visual and kinesthetic materials. Technology is also available and, when used correctly, is a valuable classroom tool. These resources become important elements that adapt to students' different learning styles and needs, as well as to the content, objectives, and classroom environment. Books serve as a guide for students throughout the school year; images, pictograms, and videos facilitate the visualization and understanding of the content; and music and games for interactive classes connect with emotions, breaking down the barriers of the traditional classroom.

It is also based on kinesthesia, which creates natural learning by engaging the entire body and developing muscle memory (Luberger, 2025). Using technological tools guarantees the development of brain plasticity and cognitive functions. These tools become key elements in

education because they facilitate the implementation of new classroom strategies tailored to the specific needs of each classroom (De la Cruz et al., 2025).

Question number eight: **What recommendations would you give to future teachers for applying neuroeducation in the English classroom?** Teachers recommend that future educators first put themselves in the students' shoes when planning their lessons, specifically focusing on emotional connection, verifying whether the class can be engaging, interesting, and provide enriching learning for students. It is also important to always be motivated because it depends on how the teacher feels emotionally. It is essential not to mix personal and work life. When entering the classroom, they always arrive with a smile that conveys happiness to students and encourages them to learn in an environment of trust.

Another recommendation is to be innovative and make good use of the beneficial resources available on the internet, which can be very useful in classes, since being a teacher does not mean you know everything. Finally, gamification is the most recommended approach, as students are highly technologically savvy and use cell phones daily. Therefore, it's a good strategy for using them effectively in English classes.

Emotions affect attention, cognitive processing, memory strengthening, and fundamental pillars of learning. Students view and perceive teachers as sources of knowledge when they are empathetic and trustworthy. Teacher interactions that convey joy, respect, affection, and enthusiasm increase intrinsic interest and mastery-oriented goals. In contrast, antagonism from teachers generates stress that hinders learning (George et al., 2024).

According to Gcu (2025) for many teachers, tech has become integral to the classroom by impacting student engagement, interactions and teaching methodologies. Tech can create

classrooms that are more dynamic while providing students with better opportunities for personalized learning and digitally enhanced collaboration (para. 3).

On the other hand, gamification, in the academic field, incorporates game components and principles under challenging conditions and has become an innovative approach in the field of English language teaching. This pedagogical innovation has the potential to transform the way teachers educate language learners, especially in an era characterized by the digital literacy of students themselves (Culduz, 2024).

## **Chapter V**

### **Conclusions and recommendations**

This chapter presents the conclusions and recommendations obtained through interviews with teachers from two private educational institutions in the province of Santa Elena: Escuela Salinas Innova and Lic. Angélica Catalina Villón Lindao; as well as the information obtained throughout the research in a qualitative phenomenological analysis on the role of neuroeducation in improving English language teaching.

#### **Conclusions**

Neuroeducation has proven to be important in English language teaching, acting as an intermediary to improve academic performance and providing great support to teachers by understanding how the brain learns and the cognitive, emotional, motivational, and sensory factors involved. It adapts strategies and resources to the different learning rhythms of each student, promoting meaningful learning.

Emotions and motivation have been shown to be significant components in the learning process. By using multisensory visual, kinesthetic, and auditory strategies and practicing activities related to daily life, such as debates that help students discuss and defend ideas, teachers build students' self-confidence and promote cooperation and concentration. Positive practice encourages students by facilitating their understanding and retention of information; this is where neuroplasticity comes into play, showing us how the influence of the environment favors the development of learning.

Although teachers are familiar with neuroeducation, they face difficulties when applying for it because training in this area is limited and there is no support from the school in the field of psychology. It is necessary to implement ongoing training that provides up-to-date knowledge on how the brain learns and on neurosensory and cognitive approaches. The lack of commitment on the part of parents is also a serious cause. These problems prevent the successful implementation of neuroeducation in the classroom.

The results obtained in the interview confirm Piaget's theory of cognitivism together with neuroplasticity within neuroeducation, revealing that learning is an emotional and dynamic process in which daily life and the environment reinforce cognitive development. With this, teachers implement strategies and techniques tailored to the needs of students, improving the efficiency of teaching the new language, in this case English.

### **Recommendations**

Neuroeducation in English language learning focuses on ensuring that teaching is adapted to the brain's natural learning processes. Teachers include activities that encourage creativity, problem solving, and sensory processing, ensuring that classes motivate students to learn and achieve their goals in English. Neuroeducation is an approach that allows us to understand how attention and memory improve learning, in this case, of a foreign language such as English, which helps educators develop more practical strategies. Through the use of digital platforms, visual resources, and kinesthetic activities, learning becomes more interactive and engaging. This allows students to stimulate different areas of the brain, which promotes listening comprehension and vocabulary retention.

It is very important to note that teachers must also work collaboratively with psychologists to understand the different emotional and social contexts of students. In the case of students with

special educational needs, the psychologist advises teachers on how to adapt strategies and resources to the curriculum that benefit students, so that they achieve meaningful learning and excellent academic results. This relationship not only enhances the teaching and learning process, but also contributes to inclusion, equity, and emotional equilibrium within the classroom. Additionally, psychologists can help design improvement projects focused on motivation. As a result of maintaining a positive relationship between teachers and psychologists, it is important to quickly identify barriers to learning and establish techniques and strategies that promote academic and emotional development.

On the other hand, it is important for teachers to develop empathy and emotional control to reduce stress and anxiety and foster positive and supportive classrooms. When teachers control their emotions, they can create an environment of trust and motivation for students. In this case, the teacher's role goes beyond developing English language skills, as they must ensure that knowledge is connected to emotions for student learning to be successful. In addition, an empathetic and comprehensive teacher is better able to analyze the individual needs of their students, especially those whose temperament interferes with their learning. In this way, teachers not only demonstrate professional dedication, but also respect and trust.

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## Annexes

### Annex A: Certified Anti-plagiarism System.

La libertad, 05 de noviembre del 2025.

### Certificado Sistema Anti-Plagio

En calidad de tutor/a del Trabajo de Integración Curricular denominado “EXPLORING THE ROLE OF NEUROEDUCATION IN ENHANCING ENGLISH LENGUAGE TEACHING” elaborado por el/la estudiante FLORES SANTOS ZULEIKA ELIZBETH y PARDO MASAQUIZA LIZBETH ALEJANDRA de la Carrera de Pedagogía de los Idiomas Nacionales y Extranjeros, de la Facultad de Ciencias de la Educación e Idiomas, de la Universidad Estatal Península de Santa Elena, me permito declarar que una vez analizado en el sistema anti plagio COMPILATIO, luego de haber cumplido los requerimientos exigidos de valoración, el presente trabajo de investigación, se encuentra con 5 % de la valoración permitida, por consiguiente se procede a emitir el informe , para proceder a la revisión por parte del especialista.

Atentamente,



---

Garcia Villao Rosa Tatiana, MSc.

TUTOR

**CERTIFICADO DE ANÁLISIS**  
magister

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1	<a href="#">doi.org</a>   Neuroeducation: understanding neural dynamics in learning and teaching <a href="https://doi.org/10.3389/feduc.2024.1437418">https://doi.org/10.3389/feduc.2024.1437418</a>	< 1%		Palabras idénticas: + 1% (29 palabras)
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3	<a href="#">dx.doi.org</a>   Teaching English to the rhythm of the brain <a href="http://dx.doi.org/10.1344/joneda.v31i.39456">http://dx.doi.org/10.1344/joneda.v31i.39456</a>	< 1%		Palabras idénticas: + 1% (18 palabras)

## Annex B: Questionnaire.

1. What do you know about neuroeducation and its role in the academic field?
2. Why do you consider neuroeducation important for teaching English?
3. How do you incorporate strategies based on brain function into your English classes?
4. How have neuroeducation-based teaching methodologies, strategies, or activities benefited students' attention, memory, and motivation in learning English?

5. What changes have you perceived in students' academic performance when applying neuroeducation strategies?

6. What challenges have you faced when applying neuroeducation in English classes?

7. What resources do you consider necessary to develop neuroeducation in English language teaching?

8. What recommendations would you give to future teachers for applying neuroeducation in the English classroom?

### **Appendix C: Interview Transcripts**

#### **Interviewee 1:**

##### **1. What do you know about neuroeducation and its role in the academic field?**

So, as we know neuroeducation is based on psychology educational practices and including personal effective learning experience. So, this is important because we need to know how the brain develops the academic fields and for the student necessities.

##### **2. Why do you consider neuroeducation important for teaching English?**

It's 100% important because, as you know, we have different types of learning processes, such as the cognitive and also through visual and auditory emotions. English has different types of teaching processes, and we need to adapt this process to the needs of the students. For example, imagine videos, games, maybe things like something kinesthetic things, because, as you know, most students learn through activities, with their hands and all that kind of stuff. So, based on that, as I said before, the students' need is to have a really important role and education, because we must focus on that to get good reception of the information.

**3. How do you incorporate strategies based on brain function into your English classes?**

One of my current strategies is bingo games, maybe visual aids or maybe some worksheets that can be completed, or maybe you can try to guess what the correct options are, because I think most of these types of activities are considered integration and try to focus on grammatical restructuring, since, as you know, grammatical restructuring is a little difficult to understand if you are learning English. So, this makes the process easier, at least for the students. I work with build, so for me I try to capture their attention. Capturing their attention is better than teaching step by step, because in the end it gets a little boring.

**4. How have neuroeducation-based teaching methodologies, strategies, or activities benefited students' attention, memory, and motivation in learning English?**

I consider motivation to learn English it's more important that memorize something, even the attention. Try to catch the attention because here on one of the courses that I have, I have two students with special needs. So, what I need to do is the adaptations, the purple adaptations to catch their attention and that way they can feel motivated to learn a little bit more about it and certainly would be an advantage for them because we'll notice the methodologies that I'm applying where they can learn a little bit more.

**5. What changes have you perceived in students' academic performance when applying neuroeducation strategies?**

I suppose it's good for some of them, but not for others, because in the age-based course there are some students who know a little more English, but there are others who know nothing. So, these kinds of strategies are good for some, because they feel that I take their needs into

account and focus on them and their shortcomings. Or maybe they think I pay attention to everything they do. But what about the others? Maybe they feel a little bored. They feel that everything is the same, that every day is the same, so maybe they've lost motivation, but for others it will be good for them. That's why we need to be aware of the general needs of the students and the different types of learning.

**6. What challenges have you faced when applying neuroeducation in English classes?**

One challenge I face is, as I said before, that most of them feel a little worried, but apart from that, I think that with good activity, this type of situation would improve most of the time in class, at the beginning of the day.

**7. What resources do you consider necessary to develop neuroeducation in English language teaching?**

I suppose visual aids and kinesthetic things will be better, because nowadays we have technological resources, so we should take advantage of them and try to use them properly. In the end, AI also helped us a lot. We provide these types of resources, so I suppose that will be one of them.

**8. What recommendations would you give to future teachers for applying neuroeducation in the English classroom?**

One of my advice or recommendations will be to try to consider the whole classroom and in that kind of activity because if you focus and just part of it will be boring for the rest. So, we as teachers always need to motivate all of them in the same way. No different way? No, because you know this one you need to put a little bit more effort into this. But if you don't know, it just doesn't matter. But we need to consider the whole classroom because we'll be better.

**Interviewee 2:****1. What do you know about neuroeducation and its role in the academic field?**

I understand by it is, is that is the field or designs that involves education and how the brain works during the learning process.

**2. Why do you consider neuroeducation important for teaching English?**

It's important because in every learning or teaching process we need to understand how to apply new strategies or methodologies. So, when you know how students learn and what the process of how students learn is, then you can apply new strategies or strategies that are useful and that are going to have good outcomes from it. So that's why I think that is important.

**3. How do you incorporate strategies based on brain function into your English classes?**

Well, I try to have a lot of discussions. So sometimes I have students like according to the unit or the topic we are on, I bring some questions, so they and I have them discussing those questions, so they have to think about their answer and give their opinions on some topics. And also, I try to apply games or hands on activities according to different learning styles that students have so they can learn better.

**4. How have neuroeducation-based teaching methodologies, strategies, or activities benefited students' attention, memory, and motivation in learning English?**

Okay, so well that helps students. I think the use of those strategies helps students like they are more engaged in the lesson and also, they acquire or more vocabulary sometimes depending on the goal that I have for that class specifically. But so that helps students to get

more vocabulary be or feel more confident as well. And they don't feel like every class is always the same. So, they have, or they are like with that speculation. So, what are we going to do today or what is going to be the new activity we're going to have today. So that helped them feel like engaged to the lesson and want to learn something new.

**5. What changes have you perceived in students' academic performance when applying neuroeducation strategies?**

Well, when I apply those strategies like games or discussions etc. I have perceived that students sometimes change their mind about how a new language is, the importance of a new language and also, they feel more confident. They feel more confident using the language even if they make mistakes or even if they are not like they haven't mastered the language yet, but they feel more confident giving their opinion or participating in class. So that way I think that students change their perception of it.

**6. What challenges have you faced when applying neuroeducation in English classes?**

Okay, challenges. I would say that the fact that not every, not all the students have the same learning style. So, because we have different learning styles, not all activities aren't going to be engaging for all the students. So that's why you need to try to change the activities class to class. And also, the fact that English is not like an easy subject for every student. So, there are some students who perform better on the language and there are others that don't. So, there are some challenges we have to face.

**7. What resources do you consider necessary to develop neuroeducation in English language teaching?**

I think that we need to have enough material or didactic material to use most students, I would say they are visuals. So, you need to use a lot of visual aids and also more like hands on activities or instructions that are clear and that the environment also or the classroom, the setting classroom is appropriate for the class.

**8. What recommendations would you give to future teachers for applying neuroeducation in the English classroom?**

Okay. I would say that they should try to make their classes or make their lessons engaging. So, I always do this when I am planning my lessons. I always try to put on my students' shoes, and I think it's okay, if I were the students, is this class like engaging or is this class interesting to me or will I be born in this class. So even though I sometimes. Because sometimes it's easier to just follow the book. But not all the classes are actually things or things that students need or that students or not in the way they are presented are like engaging for students. So, teachers must try to look for any resources or additional resources that may help them to create a better lesson and engaging lesson for students.

**Interviewee 3:**

**1. What do you know about neuroeducation and its role in the academic field?**

Okay, then education is the way your brain learns. In this case, when you are speaking in English or you want to learn English, you need to work this one. Because it's very important to use your brain to learn other languages.

**2. Why do you consider neuroeducation important for teaching English?**

Actually, it's very important because you need other ways to learn English. Not only to repeat grammar or repeat vocabulary. You have to find a way to improve the learning of English.

**3. How do you incorporate strategies based on brain function into your English classes?**

We can say that right now, in class, you can use stories, funny videos, songs. Sometimes, there are games in the books you use. Okay, you can play, play video games in your books. Sometimes, when students need to talk about a real event in their lives, they can use this. Another way is board games. Okay. To learn English? In fact, I have created a program where students read and look for the correct answer to the reading. It's very good because when you want to understand English and you have a cell phone in your hand, you concentrate better. Two months ago, I realized that I was making a quiz on Telegram, and they answered the quiz and felt very happy. And I realized that they improve their knowledge this way.

**4. How have neuroeducation-based teaching methodologies, strategies, or activities benefited students' attention, memory, and motivation in learning English?**

I think so the motivation. Maybe sometimes you need to motivate students to learn a new language because they think that's not important to learn English or in their life are they are never going to use English. So, you have at first you have to motivate. After that you have to engage the stud students. Okay. When they are engaged, it's easier to learn a new language.

**5. What changes have you perceived in students' academic performance when applying neuroeducation strategies?**

I told you in the answer before they are motivated, they think it's a funny way to learn English. In my case it's about vocabulary because they have to complete the readings. In other

course I made the same, but they learned comprehension, okay. And it was so good for me, it was the best way to learn with technology because they miss their cell phone. So, if they are working with the cell phone in the class it's so good.

**6. What challenges have you faced when applying neuroeducation in English classes?**

Maybe the level of the students when they don't know what they have to do or they don't understand everything. It's a very difficult way because we have a lot of kind of levels in each course. So, it's a little difficult to do that.

**7. What resources do you consider necessary to develop neuroeducation in English language teaching?**

Maybe we have all kinds of. In English we need all kinds of courses. Books, videos, games. Okay. All it is necessary because they learn something in each way to teach in this way. So, for me, all the resources are good.

**8. What recommendations would you give to future teachers for applying neuroeducation in the English classroom?**

Gamification. Actually, students like video games. They like to use cell phones. So, with gamification, you. You work on a lot of things; they pay attention to you too. Because if they don't understand or. Or they want to understand. Okay. And it's very, very good for the students. I think that's the best way or maybe songs too. But I think that gamification could be the better, the best.

**Interviewee 4: indicar español**

**1. What do you know about neuroeducation and its role in the academic field?**

De acuerdo, en el caso de la neuroeducación, es importante comprender el papel que desempeñan nuestros alumnos durante el proceso de aprendizaje. Por ejemplo, en la escuela, bueno, en este caso, en esta escuela en particular, una escuela privada, hay muchos casos en los que nuestros alumnos tienen diferentes estilos de aprendizaje, especialmente los alumnos con necesidades educativas especiales. Por eso, creo que es importante aplicar la neuroeducación. Todos nuestros alumnos superan sus limitaciones, pero al mismo tiempo detectamos esas limitaciones y permitimos que todos los alumnos alcancen su máximo potencial, especialmente los alumnos con necesidades educativas especiales.

## **2. Why do you consider neuroeducation important for teaching English?**

De acuerdo, yo creo que es importante porque, como dije, en el caso de los alumnos con necesidades educativas especiales, que es el caso en algunas instituciones privadas y, bueno, es el caso general en las instituciones de Ecuador, hay muchos alumnos con necesidades educativas, por lo que como docente hay que tener en cuenta las adaptaciones curriculares, por lo que la neuroeducación va de la mano con eso, teniendo en cuenta las emociones y el procesamiento, por así decirlo, de la información que tienen los cerebros de nuestros alumnos. ¿Se podría considerar que un estudiante que no tiene una necesidad educativa es totalmente diferente del cerebro de un estudiante que sí la tiene? Por ejemplo, los niños con autismo tienden a irritarse fácilmente con el ruido. En este caso, entra en juego lo que se enseña en las universidades, que es diseñar materiales didácticos para todo tipo de aprendizaje.

## **3. How do you incorporate strategies based on brain function into your English classes?**

En mis clases de inglés los estudiantes aprenden un poco más con música. Con música, es muy importante, porque les resulta más fácil comprender y recordar el vocabulario. Así que, en ese sentido, como dije, diseñar este material didáctico, recursos educativos para todos los diferentes estilos de aprendizaje que tenemos en el aula, es muy importante. Un ejemplo es la cinética estética, que es cuando los alumnos aprenden haciendo manualidades. Pueden aplicar realia, que son materiales de la vida real, y cuando hacen algo con sus propias manos, sus cinco sentidos se sumergen en lo que significa adquirir vocabulario. Por lo tanto, este tipo de estrategias me han sido muy útiles para ayudarles a aprender, tanto a los alumnos con necesidades educativas como a los que no las tienen.

**4. How have neuroeducation-based teaching methodologies, strategies, or activities benefited students' attention, memory, and motivation in learning English?**

Como le había dicho, las metodologías y estrategias son adaptadas a las necesidades de nuestros estudiantes. En el caso de la neuroeducación que se encarga de estudiar el cerebro y los procesos mentales del estudiante para adquirir la información es indispensable. La adaptación de los recursos didácticos, entonces un alumno normal aprende de la forma en la que usted le enseñe, él aprende siempre y cuando usted use recursos, mímica, entonces todo eso le permite al estudiante que procese esa información y pueda adquirir el conocimiento.

**5. What changes have you perceived in students' academic performance when applying neuroeducation strategies?**

Sin duda alguna tiene sus pros y sus contras. Algunos estudiantes, en su mayoría, se tiene que aplicar o tener en cuenta este tipo de estrategias o metodologías, que han beneficiado porque ellos entienden o pueden realizar una actividad por sí solos. Sin embargo, existe el caso donde es

un poco difícil como docente tratar de tener en consideración sus emociones, su contexto, su entorno, ya es un poco complicado porque hay papitos que trabajan, entonces no limitan al docente en ese sentido para que el docente pueda desarrollar el conocimiento de sus estudiantes.

**6. What challenges have you faced when applying neuroeducation in English classes?**

Ya como le había dicho, el único reto que hasta ahorita yo he enfrentado es la colaboración. La colaboración, al menos desde casa, porque lo que sucede en casa afecta directamente a las emociones del estudiante, entonces un estudiante que no está en paz, no está tranquilo en casa es un poco complicado que se concentra en clase y ahí es cuando el docente tiene que aplicar lo que son refuerzos académicos.

**7. What resources do you consider necessary to develop neuroeducation in English language teaching?**

El uso de pictogramas podría ser bastante útil, músicas, o sea son recursos que podrían ser necesarios para desarrollar la neuroeducación. De igual forma también colaborar mucho con lo que es el área de la psicología de la institución, porque de una u otra forma ellos también tienen bastante peso en lo que es el desarrollo del estudiante dentro del aula. Entonces usar recursos como le había mencionado, para todos los distintos estilos de aprendizaje es importante para lo que es neuroeducación.

**8. What recommendations would you give to future teachers for applying neuroeducation in the English classroom?**

Aplicar la inteligencia emocional es uno de los puntos clave como docentes que debemos tener en cuenta. Diseñar recursos didácticos para todos los estilos de aprendizaje, ir de poco y sobre todo conocer el contexto, adaptando todas las actividades y los temas al contexto de

nuestros estudiantes y sobre todo conocer el trasfondo de nuestros estudiantes que tienen necesidades educativas para saber cómo aplicar la neuroeducación y que ellos puedan obtener un aprendizaje enriquecedor de nuestra parte.

**Interviewee 5:**

**1. What do you know about neuroeducation and its role in the academic field?**

Well, in my opinion, neuroeducation is like the combination of emotions and learning. And this basically means that a student learns better when a teacher knows how to manage their emotions. And we use those emotions to create learning activities that help students achieve their academic expectations and academic achievements. Basically, what I know is the combination of emotions and also neuroeducation.

**2. Why do you consider neuroeducation important for teaching English?**

For the second question that says, as I mentioned to you before, if a teacher knows how to deal with the students' emotions, that teacher is going to be able to create effective teaching activities, effective learning activities that are going to improve students' learning, which is basically the goal of the education and neuroeducation, basically, too.

**3. How do you incorporate strategies based on brain function into your English classes?**

Well, basically, the activities you try to implement in your classes will help students feel relaxed and less stressed. For example, I would say that games are a useful way to incorporate this type of neuroeducation activity. Because games activate emotions in the brain. For example, if you create a game in which students have to perform physical activities, perhaps those physical

activities can activate their happiness, which will help them create the desire to learn something.

That's my opinion.

**4. How have neuroeducation-based teaching methodologies, strategies, or activities benefited students' attention, memory, and motivation in learning English?**

Well, in my opinion, as I mentioned to you before, when students feel happy or delighted, they also feel like the willingness to cooperate with you in your English classes. So, apart from that, when they are happy, when they feel good, basically, they do not have other bad feelings or emotions that are going to distract their cognitive processes, which are basically attention, memory, motivation. Because, for example, if a student is suffering from a bad situation, I mean depression, anxiety, something like that, they are not going to be attentive to your classes. Also, their memory is going to not work as it is expected because they are overthinking, they are creating an imaginary situation in their minds. Basically, they are not going to catch any kind of information. And also, because in motivation, basically, if the student is feeling depressed, this student is not going to feel motivated to learn anything, basically.

**5. What changes have you perceived in students' academic performance when applying neuroeducation strategies?**

Neuroeducation-based teaching methodologies help the students to learn. So, because if they do not feel happy, basically, they are suffering from any bad condition, this is going to distract the other cognitive processes. And number five, what changes have you perceived in students' academic performance when applying these strategies? I could say that when students feel delighted, they feel like, or they are in a hilarious situation, they will improve their learning, their academic performances, because when they feel delighted, as I mentioned to you before,

they cooperate to learn anything. And in this case, they cooperate, they will learn, basically and when they learn, their grades are going to be better. So, the better they feel, the better grades they obtain basically.

**6. What challenges have you faced when applying neuroeducation in English classes?**

That's a really good question, because, in my opinion, the hardest part of applying something new in your classes is, basically, the lack of information you have in your brain about this kind of new trends in education, because maybe you have heard about this kind of new trends in education, but there is something broad, this is something that goes beyond that inside a classroom. That's my opinion, so that's the reason why, basically, I consider that the lack of information or your knowledge about this kind of new trend is like a challenge you may have or you may face at the beginning.

**7. What resources do you consider necessary to develop neuroeducation in English language teaching?**

The resources that are necessary are the technological ones, because technology has come to change our lives in a variety of ways, basically. So, if you apply technology in the classroom, you can make use of the gamification activities, which is going to be helpful for them to activate their willingness to learn, because of the fact that if you apply this kind of gamification activities, they are going to feel happy, and that happiness is going to help them to be attentive, to be aware of the fact that they are going to learn something that is useful for them, so that they are going to pay attention to their classes, and in that way, they are going to improve their learning outcomes.

**8. What recommendations would you give to future teachers for applying neuroeducation in the English classroom?**

In my opinion, my recommendation is that they could look for information on the internet that is useful, because as I mentioned before, in my opinion, one challenge that I could face is my lack of knowledge. So, my recommendation is to look for information concerning this new training education, so that they can find useful strategies, useful methodologies, useful resources, to make use of this kind of teaching methodology that has come, basically. Any other recommendation that I could have is that you need to feel good with yourself, basically, because if you as a teacher do not feel motivated, if you as a teacher feel sad or feel depressed, that is something that is going to be reflected on your students. So, basically, one recommendation is try to deal with your personal situations, and also come up with a solution to that situation, so that you can feel better, and that happiness that comes from you is going to be reflected on your students, and therefore, they are going to be willing to learn with you, and also your content or the topic that you are going to teach them.