

Effective neurolearning of english in university students through NLP

Neuroaprendizaje eficaz del Inglés en estudiantes universitarios a través de la PNL

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Abstract

The article examines the impact of neurolearning on English language learning in the educational context of the Autonomous University of Nayarit. The research is carried out with 154 undergraduate students in International Business, distributed in morning and afternoon shifts. The main objective is to analyze how neurolearning techniques influence the development of language skills and academic performance of the participants. The methodology uses a survey administered through Google Forms, which includes eight items aimed at evaluating the students' perception of the effectiveness of neurolearning in their language learning process. The results indicate that students highlight the improvement in information retention, personalization of learning and the development of critical problem-solving skills. They also emphasize the importance of continuous feedback, which allows for real-time adjustment of study strategies, thus favoring a deeper understanding of the content. Thus, neurolearning emerges as a valuable approach to optimize English language learning in International Business students. Its integration into academic programs is suggested, with a particular focus on teacher training and the development of methodologies that ensure its effectiveness. This not only contributes to improving language skills but also enriches their preparation to face the challenges of a globalized professional context.

Resumen

El artículo examina el impacto del neuroaprendizaje en el aprendizaje del inglés en el contexto educativo de la Universidad Autónoma de Nayarit. La investigación se lleva a cabo con 154 estudiantes de la licenciatura en Negocios Internacionales, distribuidos en turnos matutino y vespertino. El objetivo principal consiste en analizar cómo las técnicas de neuroaprendizaje influyen en el desarrollo de competencias lingüísticas y en el rendimiento académico de los participantes. La metodología emplea una encuesta administrada mediante Google Forms, que incluye ocho ítems orientados a evaluar la percepción de los estudiantes sobre la efectividad del neuroaprendizaje en su proceso de aprendizaje del idioma. Los resultados indican que los estudiantes destacan la mejora en la retención de información, la personalización del aprendizaje y el desarrollo de habilidades críticas para la resolución de problemas. También enfatizan la importancia de la retroalimentación continua, que permite un ajuste en tiempo real de las estrategias de estudio, favoreciendo así una comprensión más profunda de los contenidos. Así pues, el neuroaprendizaje emerge como un enfoque valioso para optimizar el aprendizaje del inglés en estudiantes de Negocios Internacionales. Se sugiere su integración en los programas académicos, con un enfoque particular en la formación docente y el desarrollo de metodologías que aseguren su efectividad. Esto no solo contribuye a mejorar las habilidades lingüísticas y también enriquece su preparación para enfrentar los retos en un contexto profesional globalizado.

Effective Neurolearning of English in University Students through NLP		
Objectives	Methodology	Contribution
<p>ANALIZE</p> <p>NEUROLEARNING</p>	<p>THE METHODOLOGY</p> <p>LEARNING PROCESS</p>	<p>FACE TO THE CHALLENGES THAT ARE IN ALL OVER THE WORLD</p>

Neuroaprendizaje Eficaz del Inglés en Estudiantes Universitarios a través de la PNL		
Objetivos	Metodología	Contribución
<p>ANALIZAR</p> <p>NEUROAPRENDIZAJE</p>	<p>LA METODOLOGÍA</p> <p>PROCESO APRENDIZAJE DE</p>	<p>ENFRENTAR TODOS LOS DESAFÍOS QUE HAY EN TODO EL MUNDO</p>

Competencies, Learning, Neurolearning, Performance

Aprendizaje, Competencias, Neuroaprendizaje, Rendimiento

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Introduction

Today, language learning has become an essential skill for students in a globalised world, where effective communication in English is essential in the professional environment. The growing interconnection between countries and cultures has intensified the need to train professionals who are able to function in an international environment. In this context, higher education faces the challenge of implementing methodologies that not only facilitate the acquisition of a second language, but also optimise the educational process. One of the most promising approaches in this regard is neurolearning, which is based on the understanding of the cognitive processes of the brain and their relationship with learning.

Neurolearning is based on neuroscience principles that explore how information is processed, stored and retrieved in the brain. This approach considers not only the cognitive aspects of learning, but also the emotions and motivations that influence the acquisition of knowledge. In education, neurolearning proposes a significant change in the way languages are taught and learned, highlighting the importance of personalising the learning experience to suit the individual needs of learners. This approach aligns with the current demands of education, which require more inclusive and effective methods.

The Universidad Autónoma de Nayarit, aware of the importance of language learning in the integral formation of its students, has begun to explore the application of neurolearning techniques in its academic programmes. In particular, it has focused on the Bachelor's Degree in International Business, where proficiency in English is crucial for students' professional development. This article examines the impact of neurolearning on English language learning, analysing how these techniques influence the development of language skills and students' academic performance. The research is carried out with a sample of 154 students, distributed in morning and afternoon shifts. The selection of the sample allows us to obtain a representative view of the diverse experiences and contexts of the students. Using a quantitative methodology, a survey was administered through Google Forms, which included eight items designed to assess students' perception of the effectiveness of neurolearning in their language learning process.

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This strategy allows for the collection of relevant data on how students assess the techniques applied in their training and their impact on language skills acquisition.

Preliminary results of the research indicate that students highlight several advantages of neurolearning in their educational process. Firstly, there is a significant improvement in the retention of information, which is essential for learning a language that requires memorising vocabulary, grammatical structures and idiomatic expressions. In addition, personalisation of learning is crucial, as it allows each student to progress at his or her own pace and according to his or her interests, which in turn fosters greater engagement and motivation to learn.

Another relevant finding is the development of critical problem-solving skills, an essential competence in today's world of work. Students report that neurolearning techniques not only help them acquire the language, but also provide them with cognitive tools that they can apply in practical and challenging situations. This skill is especially important in the context of International Business, where professionals must be able to analyse complex situations and make informed decisions.

The importance of continuous feedback is also underlined in the results, as it allows for real-time adjustment of study strategies. This aspect is fundamental to the learning process, as effective feedback helps students identify their strengths and weaknesses, facilitating a deeper and more conscious approach to their learning. The ability to make immediate adjustments to study techniques contributes to a stronger understanding of content, which in turn improves confidence and communicative competence in English.

As neurolearning becomes established as a valuable approach to language teaching, there is a need to integrate these techniques into academic programmes in a systematic way.

Teacher training is a critical component in this process, as educators must be trained to apply neurolearning strategies to optimise English language teaching.

The implementation of effective methodologies requires an institutional commitment to support the ongoing training of teachers, as well as the creation of an educational environment that favours innovation and experimentation.

The application of neurolearning not only has the potential to improve students' language skills, but also to enrich their preparation to face the challenges of a globalised professional context. In a world where competition is increasingly fierce, graduates who are proficient in English and possess critical skills are highly valued by employers. Therefore, this study not only contributes to the field of education, but also responds to the demands of today's labour market by aligning academic training with professional expectations.

Therefore, this article provides a comprehensive view of the impact of neurolearning on English language learning at the Universidad Autónoma de Nayarit. Through research conducted with undergraduate students in International Business, it shows how this innovative approach can transform language teaching, improving information retention, personalising learning and developing critical skills. It highlights the importance of integrating these techniques into academic programmes and the need for teacher training to ensure the effectiveness of this approach. This opens a path towards a more effective and relevant education that prepares students for the challenges of an interconnected world.

Background

According to Pherez, G., Vargas, S., & Jerez, J. (2018), 'neurolearning involves the application of neuroscience principles to improve teaching-learning processes, transforming the figure of the teacher into a neuroeducator who integrates these strategies in the classroom' (p. 149).

Neurolearning refers to the application of neuroscience principles to understand how human beings learn. In the educational context, this approach allows for the identification of the most effective strategies that favour the acquisition of knowledge. By focusing on how the brain works, teaching methods can be designed to suit the individual needs of students.

This not only improves their academic performance, but also boosts their motivation and confidence. Furthermore, by integrating neurolearning techniques into educational institutions, a more dynamic and effective learning environment is fostered, thus benefiting the holistic development of the learner.

According to Collins (2007), 'understanding the brain mechanisms underlying learning and memory, as well as neural plasticity, is fundamental to improving educational practices. This knowledge offers opportunities to develop more effective teaching strategies, especially in areas such as nursing where information retention is crucial' (p. 306). The evolution of neurolearning has revolutionised our understanding of the human brain and its ability to learn and adapt. As neuroscience research has progressed, it has been recognised that neural plasticity, the brain's ability to reorganise itself and form new connections, plays a crucial role in the learning process.

This phenomenon implies that the brain is not static, but continually evolves in response to new experiences and knowledge. In today's society, where information is generated and shared at an unprecedented rate, this capacity becomes increasingly relevant.

Neurolearning highlights the importance of designing educational strategies that align with brain mechanisms. By understanding how learning works at the neurological level, educators can implement more effective methods that foster lasting retention and meaningful learning. In contexts such as nursing education, where retention of information is vital, applying these neuroscientific principles can enhance student training and preparation.

Thus, the integration of neuroscience in education not only optimises the teaching-learning process, but also contributes to the development of individuals who are better able to face the challenges of a constantly changing society.

This synergy between neuroscience and education promises to transform the way we learn and teach.

Relevance of neurolearning in education

According to Rojas et al. (2021), ‘neurolearning offers a motivational approach that enhances English language learning in higher education, facilitating the retention of information and the development of language skills by considering students’ cognitive and emotional processes’ (p. 810). Thus, neurolearning presents itself as a crucial approach in higher education, especially in the teaching of languages such as English.

By integrating motivational aspects together with an understanding of cognitive and emotional processes, this approach enhances the retention of information and the development of language skills in learners. The relevance of this methodology lies in its ability to adapt the educational process to the individual needs of learners, fostering more meaningful and effective learning. Thus, neurolearning not only improves language skills, but also contributes to the comprehensive training of future professionals in a globalised environment.

According to Goswami (2006), ‘there is a considerable gap between scientific research and its direct application in the classroom, leading to the adoption of “brain-based learning” approaches that often lack scientific backing’ (p. 408). In higher education institutions, it is crucial to address the gap between neuroscience and its application in the classroom. As new knowledge about the brain develops, educators must be critical of ‘brain-based learning’ programmes that lack solid evidence. Implementing pedagogical strategies supported by neuroscience research can transform the teaching-learning process, improving retention and understanding of content.

Fostering close collaboration between neuroscientists and educators will allow for the adaptation of teaching practices to the cognitive realities of students, thus optimising the quality of education at the higher education level.

According to Carew and Magsamen (2010), ‘neuroeducation combines neuroscience, psychology, cognitive science and education to create more effective teaching methods, enabling the development of evidence-based solutions to guide 21st century learning’ (p. 686).

In higher education institutions, the integration of neuroeducation promises to revolutionise learning spaces. By combining neuroscience, psychology and cognitive science, it will be possible to develop more effective teaching methods that respond to the cognitive needs of students.

This approach will enable educators to design evidence-based curricula and educational policies, optimising the learning experience. As these strategies are implemented, students will benefit from a more enriching and adaptive environment, facilitating the development of critical skills needed to meet the challenges of the 21st century and fostering more meaningful learning.

Neurolearning, its relationship to Neurolinguistic Programming and English language learning

According to Ginting and Hartati (2023), ‘Neurolinguistic Programming presents itself as a valuable tool in the English classroom as it enhances student motivation and engagement, facilitating information retention through techniques such as emotional anchoring and reframing’ (p. 15). This highlights its potential to enrich language teaching. Neuro Linguistic Programming (NLP) has become a valuable tool in education, especially in the teaching of languages such as English. Its focus on the interconnection between language, mind and behaviour offers a framework for improving student motivation and engagement. Through specific techniques such as emotional anchoring and reframing, NLP enables educators to create a more positive and responsive learning environment. These strategies not only facilitate the retention of information, but also encourage more meaningful and effective learning by adapting to the individual needs of each learner.

The human brain, with its remarkable plasticity, has an inherent capacity to adapt and reorganise itself in response to new experiences and knowledge. In today's society, where information is generated and consumed at an accelerated rate, this capacity becomes especially relevant. NLP harnesses this plasticity by focusing on how learners perceive and process information, enabling them to learn more quickly and effectively.

Furthermore, by integrating NLP into the teaching-learning process, educators can address different learning styles, personalising the educational experience and maximising the potential of each student.

The advantages of NLP in the classroom are manifold: it improves communication, reduces anxiety and promotes a collaborative learning environment. This results in more motivated and participative students, able to apply what they learn more effectively. Ultimately, the combination of NLP and neuroscience in education not only optimises the learning process, but also prepares students to face the challenges of an ever-changing world, equipping them with critical skills for their personal and professional development. According to Hedayat, Raissi and Azizzadeh Asl (2020), 'Neuro Linguistic Programming has been recognised as a tool that can help English language learners improve communicative competence, presentation skills and body language effectively' (p. 1142), which underlines its potential to improve educational outcomes and support learners' personal development. Neuro Linguistic Programming (NLP) is an approach that has gained prominence in education, especially in English language teaching. Developed in the 1970s by John Grinder and Richard Bandler, NLP is based on the premise that there is an intrinsic connection between language, behaviour and neurological processes. This relationship allows educators to apply techniques that optimise learning and foster meaningful personal development. The main points covered in the article include a clear definition of NLP and its origins, highlighting its evolution as a tool for improving communication and learning.

The fundamental pillars of NLP, such as rapport building, results-oriented thinking, sensory awareness and behavioural flexibility, are essential for fostering a positive learning environment. Rapport building, for example, allows teachers to establish deeper connections with their students, which facilitates more effective communication. This atmosphere of trust is crucial, as students feel more comfortable participating and expressing their ideas. In addition, results-oriented thinking helps both students and teachers to define clear goals, promoting more focused and effective learning.

NLP also has important implications for students, enabling them to improve their self-esteem and communication skills. Through various techniques, students can develop academic competencies that are not only limited to language learning, but also encompass interpersonal and self-expression skills. This holistic approach results in more meaningful learning, where students not only acquire knowledge, but also learn to apply that knowledge in real-life contexts.

For teachers, applying NLP strategies in the classroom is essential to create a more dynamic learning environment.

This not only improves communication with students, but also allows them to adapt their teaching methods to diverse learning needs. The evidence of effectiveness mentioned in the article supports the ability of NLP to positively impact areas such as vocabulary, reading comprehension and grammatical knowledge.

Neurolearning, which focuses on how the brain processes and retains information, is closely related to NLP. The human brain's ability to adapt and learn has increased in the new society, driven by technology and access to diverse information. This brain plasticity can be harnessed through NLP techniques, optimising the teaching-learning process in the context of learning English. Thus, NLP is presented as a valuable tool that enhances both the cognitive and personal development of students, enabling them to achieve more effective and lasting learning.

Methodology

The present research explores the impact of neurolearning on English language learning in the educational context of the Universidad Autónoma de Nayarit. The research focuses on a sample of 154 undergraduate students in International Business, randomly selected from the morning and afternoon shifts. The participants are between 18 and 21 years old and are in their second, fourth, sixth and eighth semesters. The main objective of this study is to analyse how neurolearning techniques affect students' language skill development and academic performance.

In order to carry out the research, a quantitative approach was adopted, which allows for the collection of structured and accurate data. A survey was designed and administered through Google Forms, which consists of eight items aimed at assessing students' perception of the effectiveness of neurolearning in their English language acquisition process. This methodology ensures the collection of relevant information, providing a clear picture of participants' experiences.

At the same time, the research is exploratory in nature, as during the development of the study, a systematic literature review of various scientific articles on this topic was carried out using the following scientific databases: Direct Science, Emerald, Scopus, Scielo, Redalyc and Google Scholar. For this article, search criteria were applied based on search engines or descriptors, achieving the best results with high impact articles.

The survey was randomly administered to 154 selected students, ensuring an adequate representation of the undergraduate student population. Each item was carefully formulated to capture students' views on various aspects of neurolearning, including information retention, personalisation of learning and the importance of continuous feedback in their education. This survey design allows for an in-depth understanding of students' perceptions and experiences. Data analysis was conducted using descriptive statistical techniques to identify patterns and trends in participants' responses. Statistical software tools were used to process the information, which facilitated the interpretation of the results and the detection of significant correlations between the variables assessed. In addition, the possibility of making comparisons between different semesters and shifts was considered, which made it possible to observe variations in the perception of neurolearning according to the academic context of each group.

The research findings reveal that students positively appreciate the implementation of neurolearning techniques in their training, highlighting improvements in information retention and the development of critical problem-solving skills. Personalisation of learning was also identified as contributing to greater engagement and motivation, which translates into higher academic performance.

Continuous feedback is seen as a key element in the educational process, as it allows students to adjust their study strategies according to their individual needs. This approach is fundamental, as it promotes a deeper understanding of content and fosters autonomy in learning.

This study provides evidence of the effectiveness of neurolearning as a method for optimising English language learning in International Business students. The integration of these techniques into academic programmes is recommended, underlining the importance of teacher training and the development of methodologies to ensure the effectiveness of this approach. The implementation of these strategies in higher education represents a significant advance towards the improvement of educational quality and the integral development of future professionals, preparing them to face the challenges of an increasingly globalised work environment.

The adoption of neurolearning techniques not only improves students' language skills, but also enriches their ability to apply knowledge in real situations, enhancing their professional profile in a competitive labour market.

This research method used a mixed-method approach combining both quantitative and qualitative data collection and analysis.

This strategy facilitated a more comprehensive understanding of the topic by integrating diverse perspectives and generating more complete inferences (Hernández Sampieri, Roberto, 2014).

The results of this study will provide essential information for the design and implementation of innovative pedagogical strategies that favour the continuous improvement of the quality of teaching at the Autonomous University of Nayarit. The importance of neurolearning in the teaching-learning process lies in its ability to optimise the way students acquire and retain information, facilitating more effective and meaningful learning.

It is essential that teachers are updated and trained in this educational approach. Continuing education in neurolearning will enable educators to apply techniques and strategies that are aligned with how the brain works, thus promoting a more dynamic learning environment tailored to the needs of students. By incorporating this knowledge into their teaching practice, educators will not only improve the academic performance of their students, but also contribute to their holistic development, preparing them to face the challenges of the contemporary world.

Student survey

The present research conducted at the Universidad Autónoma de Nayarit analyses the impact of neurolearning on English language learning. The sample included 154 students, 56 per cent of whom were female and 44 per cent male, randomly selected from morning and afternoon shifts, aged between 18 and 21 years old.

A quantitative approach was used and an online survey with eight items was designed to assess students' perception of the effectiveness of neurolearning. The survey ensured adequate representation of the student population and captured views on information retention and personalisation of learning.

Results

The study The study on effective English language neurolearning in university students through Neuro Linguistic Programming (NLP) revealed significant findings. The results indicate that a majority of respondents believe that NLP can improve English language learning among International Business students. 41.6% and 55.8% of the participants agree that the application of NLP is beneficial for language proficiency. Furthermore, 58.4% believe that this methodology plays a crucial role in the learning experience. However, the need for more teacher training to effectively implement these techniques is highlighted.

Despite the challenges, NLP is presented as a valuable strategy to optimise English language learning in the university context. It is suggested that these techniques be integrated into curricula and that teachers be trained to ensure their effectiveness.

Question 1.- Do you think that the application of Neurolinguistic Programming can improve the learning of English for International Business students?

Box 1

1.- Do you believe that the application of Neuro-Linguistic Programming can enhance English language learning for International Business students?
154 respuestas

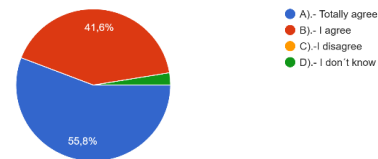


Figure 1

Do you think the application of Neurolinguistic Programming can improve English language learning for International Business students?

Source: own elaboration

The results in Figure 1 show that the majority of the students surveyed have a positive perception of the application of Neuro Linguistic Programming (NLP) to improve English language learning in the context of International Business. 55.8% of the participants agree with this statement, while 41.6% strongly agree. These findings suggest that students recognise the potential of NLP as a tool to strengthen their language skills.

Question 2.- Do you think that Neuro Linguistic Programming techniques can support International Business students in the effective mastery of English?

Box 2

2.- Are you of the opinion that Neuro-Linguistic Programming techniques can support International Business students in effectively mastering the English language?
154 respuestas

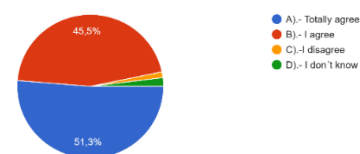


Figure 2

Do you think that Neurolinguistic Programming techniques can support International Business students in the effective mastery of English?

Source: own elaboration

The results of the second question show that a majority of students (51.3%) agree that Neuro Linguistic Programming techniques can support International Business students in effective English language proficiency. In addition, 45.5% of the participants strongly agree with this statement.

These data reflect a positive perception of the potential of NLP to strengthen the language skills of students in this field.

Question 3.- Do you think that Neuro Linguistic Programming is a valuable tool for improving the English language skills of students in the field of International Business?

Box 3

3.- Do you think that Neuro-Linguistic Programming is a valuable tool for improving the English language skills of students in the International Business field?
154 respuestas

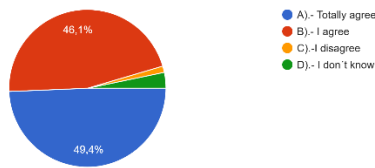


Figure 3

Do you think that NeuroLinguistic Programming is a valuable tool for improving the English skills of students in the field of International Business?

Source: own elaboration

The results of the third question reveal that a majority of students (49.4%) consider NeuroLinguistic Programming to be a valuable tool for improving students' English skills in the field of International Business. Additionally, 46.1% of participants strongly agree with this perception. These data suggest that students recognise the potential of NLP as an effective resource for strengthening language skills.

Question 4.- Do you agree that Neuro Linguistic Programming can contribute to the successful acquisition of English language competence by International Business students?

Box 4

4.- Do you agree that Neuro-Linguistic Programming can contribute to the successful acquisition of English language proficiency by International Business students?
154 respuestas

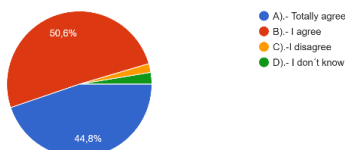


Figure 4

Do you agree that Neuro Linguistic Programming can contribute to the successful acquisition of English language competence by International Business students?

Source: own elaboration

The results of the fourth question show that 44.8% of the students surveyed agree that Neuro Linguistic Programming can contribute to the successful acquisition of English language competence by International Business students. Additionally, 50.6% of the participants strongly agree with this statement.

These data suggest that students perceive NLP as an effective tool for developing their language skills.

Question 5.- In your opinion, does Neuro Linguistic Programming play a significant role in enhancing the learning experience and language acquisition of International Business students studying English?

Box 5

5.- In your view, does Neuro-Linguistic Programming play a significant role in enhancing the learning experience and language acquisition of International Business students studying English?
154 respuestas

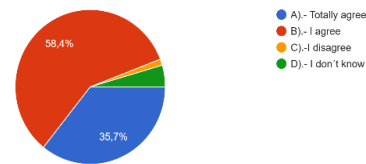


Figure 5

In your opinion, does Neuro Linguistic Programming play a significant role in enhancing the learning experience and language acquisition of International Business students studying English?

Source: own elaboration

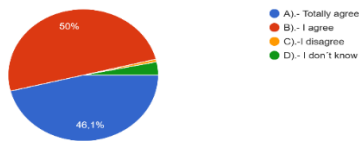
The results of the fifth question indicate that a considerable majority of students (58.4%) consider that Neuro Linguistic Programming plays a significant role in improving the learning experience and language acquisition of International Business students.

This data reflects a positive perception of the impact NLP can have in optimising the language teaching-learning process.

Question 6.- Would you agree that incorporating NLP techniques is beneficial for International Business students seeking to improve their fluency in English?

Box 6

6.- Would you agree that incorporating Neuro-Linguistic Programming techniques is beneficial for International Business students seeking to improve their English language fluency?
154 respuestas

**Figure 6**

Would you agree that incorporating Neurolinguistic Programming techniques is beneficial for International Business students seeking to improve their fluency in English?

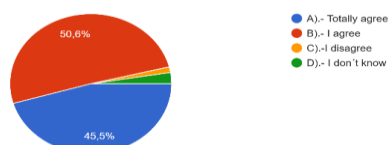
Source: own elaboration

The results of the sixth question show that 52.6% of the students agree that incorporating Neurolinguistic Programming techniques is beneficial for those seeking to improve their fluency in English. Furthermore, 42.9% of the participants strongly agree with this statement. These findings suggest that students recognise the value of NLP as an effective resource for enhancing their English communication skills.

Question 7.- Do the International Business students agree with your English language learning objectives?

Box 7

7.- Do you believe that Neuro-Linguistic Programming strategies are effective in assisting International Business students with their English language learning goals?
154 respuestas

**Figure 7**

Do International Business students meet their English language learning objectives?

Source: own elaboration

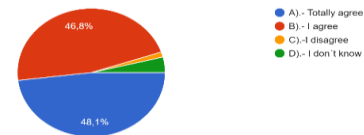
The results of the seventh question indicate that 55.2% of the students consider that Neurolinguistic Programming contributes to the alignment of their English learning objectives. 38.3% of the participants strongly agree with this statement. These data reflect a positive perception of NLP's ability to facilitate the achievement of educational goals in language learning.

Question 8.- In general, do you think that Neuro Linguistic Programming can be a valuable approach to optimise English language learning for students in the field of International Business?

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Box 8

8.- Overall, do you think that Neuro-Linguistic Programming can be a valuable approach to optimize English language learning for students in the field of International Business?
154 respuestas

**Figure 8**

Overall, do you think that Neuro Linguistic Programming can be a valuable approach to optimise English language learning for students in the field of International Business?

Source: own elaboration

The results of the eighth question reveal that 54.5% of the students think that Neuro Linguistic Programming can be a valuable approach to optimise English language learning in the context of International Business. Furthermore, 43.5% of the participants strongly agree with this statement. These findings suggest that there is a significant appreciation of the potential of NLP to enhance the language learning process.

Discussion and Conclusions

Research on the impact of neurolearning on English language teaching at the Universidad Autónoma de Nayarit has revealed significant findings that underline the effectiveness of this approach in the development of language skills among International Business students. With a sample of 154 participants, an online survey was used to assess the students' perception of the influence of neurolearning techniques on their learning process.

The data obtained indicate that a considerable percentage of students recognise the improvement in information retention and personalisation of learning, elements that are fundamental for meaningful learning.

One of the highlights of the survey was the appreciation of continuous feedback, which was identified as a key factor that allows for real-time adjustments in study strategies. This type of feedback not only favours the understanding of content, but also promotes a more dynamic learning environment that is adaptable to the individual needs of students. Thus, neurolearning is presented not only as an innovative methodology, but also as an essential resource for optimising the teaching of English in an academic context.

The results of the analysis reveal that a high percentage of students agree that Neuro Linguistic Programming (NLP) can improve language learning. This perception is reflected in the response to questions about the effectiveness of NLP techniques, where a majority expressed that these tools are valuable for English language proficiency. In particular, 58.4% of respondents believe that NLP plays a crucial role in their educational experience, suggesting that the integration of this methodology into the curriculum could have a positive impact on academic performance.

The study also highlights the need for adequate teacher training in neurolearning. Despite the receptiveness of students to these techniques, a gap in the training of educators is identified that limits the effective implementation of the proposed strategies. Therefore, it is essential that educational institutions invest in the continuous training of their teachers, ensuring that they are equipped with the necessary tools and knowledge to apply neurolearning effectively.

Furthermore, research indicates that neurolearning not only contributes to the development of language skills, but also enriches students' preparation to face challenges in an increasingly globalised professional environment.

By improving fluency and competence in the English language, students are better prepared to participate in the international labour market, where proficiency in English is an essential requirement. According to Rivera Morales and Ornelas Gutiérrez (2024), 'the new 21st century scenarios for university teaching with respect to hybrid environments and emerging pedagogies represent an important contribution to the field of education and university teaching, as it shows different ways of responding to everyday educational problems and presents proposals to face emerging challenges in the field of higher education'.

The proposals highlight the need to adapt teaching practices to a constantly changing environment. The importance of integrating technologies and innovative pedagogical approaches that respond to the current demands of students is emphasised.

This approach not only addresses immediate challenges, but also promotes a long-term vision for higher education, fostering more inclusive and diverse learning. Furthermore, collaboration between teachers, students and communities is highlighted as a key element in creating a more dynamic and effective learning environment.

From the above, it is concluded that neurolearning emerges as a valuable approach that can transform the teaching of English at the Autonomous University of Nayarit. It is suggested that the integration of these techniques into academic programmes, together with robust training for teachers, will not only promote more effective learning, but will also contribute to the continuous improvement of the quality of education at the institution. The review of these findings provides crucial information for the design of innovative pedagogical strategies that will benefit the student community and promote more effective and meaningful learning.

Declarations

Conflict of interest

The authors declare no conflict of interest. They have no known competing financial interests or personal relationships that could have appeared to influence the article reported in this article.

Authors' Contribution

Carrillo-Beltrán, Julio César Cuauhtémoc: Contributed with the main idea and realisation of the project, as well as the first draft.

Ramírez-Jiménez, Armando: Contributed with the revision in writing and style, as well as the revision and modification of citations and references, and finally the adaptation to the ECORFAN format.

Llanos-Ramírez, María del Carmen: Contributed advice on educational innovation issues in this study.

Maldonado-Bernal, Mónica del Rocío: She contributed with the analysis of the results and the creation of the figures or graphs.

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