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Ciencias de la Educación Artículo de Investigación

Development of innovative teaching strategies to stimulate the learning of the English language

Desarrollo de estrategias didácticas innovadoras para estimular el aprendizaje del idioma inglés

Desenvolvimento de estratégias de ensino inovadoras para estimular a aprendizagem da língua inglesa

Milton Steeven Chiriboga Pantusin ^I e1313130120@live.uleam.edu.ec https://orcid.org/0009-0002-6550-1837

Víctor Reinal Jama Zambrano ^{II} victor.jama@uleam.edu.ec https://orcid.org/0000-0001-8053-5475

Correspondencia: e1313130120@live.uleam.edu.ec

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- I. Universidad Laica Eloy Alfaro de Manabí; Pedagogía de los Idiomas Nacionales y Extranjeros Ecuador, Chone, Ecuador.
- II. Universidad Laica Eloy Alfaro de Manabí; Pedagogía de los Idiomas Nacionales y Extranjeros Ecuador, Chone, Ecuador.



Resumen

El desarrollo de estrategias de enseñanza innovadoras es crucial para mejorar la eficacia del aprendizaje del idioma inglés en un panorama educativo en rápida evolución. Estas estrategias tienen como objetivo no solo mejorar la fluidez y la comprensión, sino también empoderar a los estudiantes con el pensamiento crítico y las habilidades necesarias para la competencia global. Se utilizó una técnica de enfoque mixto con orientación descriptiva para recopilar datos a través de una investigación de campo empleando instrumentos que permiten una revisión integral del tema desde varias perspectivas. Este estudio analiza el desarrollo de estrategias de enseñanza innovadoras para estimular el aprendizaje del idioma inglés. Al integrar tecnología, como plataformas de aprendizaje digital, gamificación y realidad virtual, junto con métodos tradicionales e interactivos como la narración de historias, el aprendizaje basado en tareas y las actividades colaborativas, los educadores pueden abordar diversos estilos y necesidades de aprendizaje. Este enfoque incluye encuestas, hojas de observación y entrevistas. Los hallazgos enfatizan que los enfoques innovadores no solo mejoran la competencia lingüística, sino que también fomentan el pensamiento crítico, la creatividad y las habilidades de comunicación global, lo que los hace indispensables en la educación moderna del idioma inglés. Se puede concluir que el desarrollo de estrategias de enseñanza innovadoras juega un papel crucial en la mejora del aprendizaje del idioma inglés, abordando tanto los desafíos como las oportunidades de la educación moderna. Los docentes deben cambiar y mejorar constantemente sus métodos para garantizar que los estudiantes cuenten con las habilidades, la motivación y el conocimiento necesarios para tener éxito en un mundo cada vez más globalizado y digital. Al incluir enfoques variados y con visión de futuro, pueden crear experiencias de aprendizaje de idiomas más interesantes, inclusivas y efectivas para estudiantes y educadores.

Palabras Claves: estrategias didácticas; estimular; aprendizaje; inglés.

Abstract

The development of innovative teaching strategies is crucial to enhancing the effectiveness of English language learning in a rapidly evolving educational landscape. These strategies aim to not only improve fluency and comprehension but also empower students with critical thinking and communication skills necessary for global competence. A mixed-approach technique with a descriptive orientation was used to collect data through field research employing instruments that allow for a comprehensive review of the subject from several perspectives. This study analyzes the



development of innovative teaching strategies to stimulate the learning of the English language. By integrating technology, such as digital learning platforms, gamification, and virtual reality, alongside traditional and interactive methods like storytelling, task-based learning, and collaborative activities, educators can address diverse learning styles and needs. This approach includes surveys, observation sheets, and interviews. The findings emphasize that innovative approaches not only enhance linguistic competence but also encourage critical thinking, creativity, and global communication skills, making them indispensable in modern English language education. It can be concluded that the development of innovative teaching strategies plays a crucial role in enhancing the learning of the English language, addressing both the challenges and opportunities of modern education. Teachers must constantly change and improve their approaches to guarantee that students are equipped with the skills, motivation, and knowledge required for success in an increasingly globalized and digital world. By including varied and forward-looking approaches, they can create more interesting, inclusive, and effective language learning experiences for students and educators.

Keywords: teaching strategies; encourage; learning; English.

Resumo

O desenvolvimento de estratégias de ensino inovadoras é crucial para melhorar a eficácia da aprendizagem da língua inglesa num panorama educativo em rápida evolução. Estas estratégias visam não só melhorar a fluência e a compreensão, mas também capacitar os alunos com o pensamento crítico e as competências necessárias para a competência global. Foi utilizada uma abordagem descritiva e de método misto para recolher dados através de uma pesquisa de campo, empregando instrumentos que permitem uma revisão abrangente do tema sob diversas perspetivas. Este estudo analisa o desenvolvimento de estratégias de ensino inovadoras para estimular a aprendizagem da língua inglesa. Ao integrar tecnologias, como plataformas digitais de aprendizagem, gamificação e realidade virtual, juntamente com métodos tradicionais e interativos, como a narração de histórias, a aprendizagem baseada em tarefas e atividades colaborativas, os educadores podem abordar diversos estilos e necessidades de aprendizagem. Esta abordagem inclui inquéritos, folhas de observação e entrevistas. Os resultados enfatizam que as abordagems inovadoras não só melhoram a proficiência linguística, como também promovem o pensamento crítico, a criatividade e as competências de comunicação global, tornando-as indispensáveis no ensino moderno da língua inglesa. Pode concluir-se que o desenvolvimento de estratégias de ensino inovadoras desempenha um papel crucial na



melhoria da aprendizagem da língua inglesa, abordando tanto os desafios como as oportunidades da educação moderna. Os professores devem mudar e melhorar constantemente os seus métodos para garantir que os alunos têm as competências, a motivação e os conhecimentos necessários para terem sucesso num mundo cada vez mais globalizado e digital. Ao incorporar abordagens variadas e inovadoras, podem criar experiências de aprendizagem de línguas mais interessantes, inclusivas e eficazes para alunos e educadores.

Palavras-chave: estratégias de ensino; encorajar; aprendizagem; inglês.

Introduction

English has turned into a vital resource for communication across borders. Because English is widely spoken in many regions. English as a Foreign Language (EFL) has turned into a worldwide concern. Teaching strategies are techniques or methods used by teachers to assist learning and help students reach their learning objectives (Espmaker & Tedenby, 2020). According to Pungki and Suwartono (2019), effective teaching techniques are essential for achieving learning objectives. This statement underscores the critical role those instructional methods play in facilitating student success. Utilizing effective teaching techniques, educators can help students better grasp content, develop key skills, and achieve their learning goals. The importance of this point lies in the fact that without well-designed teaching strategies, students may struggle to connect with the material or fully engage in the learning process.

Teaching strategies, according to Espmaker and Tedenby (2020), are tools teachers employ to help their students reach learning objectives. This definition underscores the crucial role that educators play in shaping the learning experience

Implementing different teaching strategies, educators may customize their approaches to fit different student demands, therefore fostering more involvement and hence better learning results. The term "ways" reflects the flexibility and adaptability of teaching strategies, suggesting that there is no one-size-fits-all approach. It emphasizes the importance of instructional design in fostering a productive learning environment where students can successfully meet their educational objectives.

Teaching strategies are important in the teaching and learning process because they assist the instructor attain the learning objectives (Pungki and Suwartono, 2019). Strategies for achieving these objectives can be adapted to individual students' needs as well as educational styles. These strategies are methods that teachers employ to help students learn and make their learning more successful and



gatherings. Teaching techniques can assist students learn by doing, reducing monotony while contributing to the achievement of their learning objectives (Hayati et al., 2021).

Kiftiah (2019) provides a variety of teaching practices to support student learning and achievement and this highlights the importance of using diverse instructional strategies to cater to the varied needs, abilities, and learning styles of students. This assertion emphasizes the significance of adopting a flexible and inclusive approach to teaching, acknowledging that every student has unique learning preferences and challenges. By employing a range of teaching practices, educators can create a more engaging and effective learning environment where all students have the opportunity to succeed.

The study was done at a university in Chone canton, Manabí province. Students get seven hours of English as a Foreign Language (EFL) instruction every week, and the university prioritizes English for their entire education. However, young learners need to be encouraged through the use of innovative teaching strategies to acquire the language in a meaningful way. Because this is not commonly used among teachers, the students appear to be distracted, which may lead to pupils' lack of comprehension, discouragement and some difficulties in improving their skills.

It is regarded vital to do because it allows for the study of the develop of innovative strategies to stimulate English language acquisition, as well as the collection of data that assists in comprehending the complicated issues discussed in this section through analysis approaches. Data collecting tools such as interviews, observation sheets, and surveys will allow us to examine whether innovative strategies assist students grow their language abilities and how innovative strategies can help students learn English more effectively.

This research responds to the following questions: 1. How do different innovative teaching strategies impact the development of English language skills (interview) 2. How do multimodal teaching strategies impact the retention and application of English vocabulary? (Observation Sheets) 3. How can technology-enhanced language learning (e.g., AI, VR, mobile apps) improve student engagement and proficiency in learning English? (Survey)

To contribute to the innovation of the teaching-learning process of EFL in young learners by finding the elements that influenced the acquisition of English Language through the use of innovative strategies, the investigator begins the study with a review of the principles of (1) Introduction to English Language Teaching, (2) Innovative teaching strategies.

This study is the authors' original work, demonstrating that, while there may be comparable topics, the ideas and scientific theories are distinct because it seeks to address a problem that arose at a

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specific university in Chone, with the goal of improving and strengthening aspects of English language acquisition and teaching.

Literature review

2.1 Introduction to English Language Teaching

English has become the main language of communication in many countries around the world English has become the prerequisite for academic success in many fields, a gateway to global popular culture via music, movies, and the internet and because of its relevance and utility English has become the main medium of communication in international business and diplomacy. As a result, proficiency in English has become a valuable asset, opening doors to education, and employment.

The history of ELT demonstrates the evolution of various approaches and techniques in response to the needs of English language teaching and learning (Richards and Rodgers, 2014). Throughout history, the creation and development of many ideas in applied linguistics and second language acquisition have affected the approaches utilized in ELT. That is, ELT has shifted its methods from generic theories about the nature of languages and language acquisition to more particular theories that emphasize the importance of the language that language learners acquire.

The evolution of ELT shows how valuable language is always in human society. English, originally a provincial dialect of the British Isles, began its worldwide voyage as the British Empire expanded its colonies. This historical setting has contributed to the expansion of English as a worldwide lingua franca. (Crystal, 2003).

2.2 Importance of teaching English today

In today's globalized and linked world, the importance of English cannot be stressed for the millions of immigrants who arrive to the United States from countries where English is not spoken. When we travel to nations where English is the primary language, it is critical to speak and comprehend. In many countries and markets, understanding English opens up work chances. Science and aviation use English as their primary communication language.

Sneddon, 2003. It is clear that English, being a universal language, is crucial to worldwide communication. Among other things, international contacts include global trade, corporate relationships, and economic ties between nations. In these types of cross-border exchanges, English serves primarily as a universal language. A lingua franca is a language used to facilitate communication between individuals from various nations.



English is the primary language for accessing technological communication and information. This leads us to infer that English will continue to be the dominant language in the modern world. Furthermore, it continues to be the world's language for international communication as the entire globe moves toward the development of a global village.

English Language Teaching is especially important in this situation. It is the means by which people learn the language abilities required to engage in the global arena. Effective ELT involves more than simply grammar and vocabulary; it also includes the development of listening, speaking, reading, and writing abilities, as well as cultural awareness and cross-cultural communication ability.

To meaningfully teach a new language, creative methods, approaches, and strategies that assist language acquisition are necessary, as well as a pleasant learning atmosphere inside the classroom where students feel confident in developing their language abilities.

2.3 Innovative teaching strategies

Teaching is more than a collection of methods. Teaching properly entails addressing a set of objectives for a specific group of students, at a certain moment in the school year, with specific resources, within a specific time frame, and in a specific school and community environment. Crawford, Mathews, Makinster, and Saul (2005) Teaching strategies are subsets of a method that consist of sequences of procedures (activities) used by instructors to build lesson plans to achieve certain goals (Larsen-Freeman & Anderson, 2011; Wright, 2010).

Effective teaching strategies are founded on a solid grasp of both the subject matter and the learners. Teachers should consider their students' age, skill, and learning style, as well as the aims and objectives of the class. To create a more interesting and successful learning environment, professors should be imaginative in selecting strategies that match their students' needs and skills.

Teaching techniques are the foundation of education. Students will not learn efficiently if the teaching method is not proper. Teaching is an art form, and teaching strategies assist teachers in making their lessons more memorable. Artful instructors treat subject matter as means of knowing, rather than rigid information or concepts. According to Crawford et al. (2005, p. 10), these strategies encourage students to reflect on a topic, ask questions, and generate new ideas.

Using innovative teaching strategies can positively impact student learning and engagement, which can help increase student motivation and improve their overall learning experience (Subramanian & Kelly, 2019).



An innovative teaching strategy will result in greater student participation (Subramanian & Kelly, 2019). Innovative teaching strategies often involve students working together and participating in the learning process, which can help to foster collaboration and increase student participation.

Pujiati & Tamela (2019) stated that it is important for teachers to implement innovative teaching strategies and accommodate the needs of an inclusive classroom.

Inclusivity in education is a topic that has gained a lot of attention from the government and also educators all around the globe. Hidayah & Morganna (2019) suggested several teaching strategies be used in teaching EFL in inclusive classrooms, such as active learning, peer-tutoring, cooperative learning, and direct instruction.

Their study also suggested that the teacher must be ready to implement many different teaching strategies in the classroom to meet the student's needs. Teachers must also continuously develop their pedagogical skills and knowledge to implement the strategies well.

Methodology

This study used a descriptive design with a mixed method to analyze the development of innovative teaching strategies to stimulate the learning of the English language in ULEAM, Manabí Ecuador. The study focused on First-semester students enrolled in the Pedagogy of National and Foreign Language career. Data were collected from a sample of -- students using an online survey distributed via Google Forms, an interview with three EFL professionals, and observation sheets to record critical information.

The interviews are used to collect detailed information about the participants' experiences by interpreting them. This engagement gives the ability to document everything in their life (Doody, 2013; Bolderston, 2012). The number of questions is eight, all of which are focus on the development of innovative teaching strategies to stimulate the learning of the English language and the instrument was tested by three EFL experts and validated by four EFL masters.

According to Gorman and Clayton (2005, p. 40), observation studies "involve the systematic recording of observable phenomena or behavior in a natural setting". This definition highlights the fundamental aspect of observation studies, which is their focus on real-world contexts rather than controlled laboratory environments. By observing behavior in natural settings, researchers can gather more authentic and generalizable data, reflecting how individuals or groups behave in their everyday environments.



Check and Schutt (2012) describe survey research as "the collection of data from a selected group of people through their answers to questions" (p. 160). This form of research provides for a range of approaches to participant recruitment, data collection, and equipment.

This article used a data triangulation method to classify substantial information, Data triangulation is a method that combines several data collection techniques from various data sources (Sugiyono, 2017).

Results Table 1 Data Triangulation of the three research instruments

Categories	Research Instruments		
	Interview	Observation Sheets	Survey
Learning English	The teacher says that learning	Students are interested	Students confirm in their
	English in the classroom is	in learning English	responses that they know
	significant for his	during their class hours	the importance of learning
	professional development		English is essential for
			their working life.
Innovative Strategies	The teacher claims that using	Students show a	They claim that applying
	innovative strategies helps to	positive attitude when	innovative strategies helps
	better understand the English	the teacher uses	them feel confident and
	language.	innovative strategies in	better understand the
		classes	topics given in classes.
Technological tools	In today's technological	Students actively	They found that using
	society, integrating	participate during the	technological tools in class
	technology into language	use of technological	facilitates learning and
	teaching is positive for	tools such as games, or	makes classes more
	language learning.	interactive platforms	dynamic
Didactic Resources	The use of teaching resources	Students show signs	Students consider that
	during language teaching	that they enjoy learning	using teaching resources
	motivates students to learn in	with dynamic activities	also helps develop their
		linked to resources that	language skills as it



	a dynamic and meaningful	help them carry out	encourages substantial
	way.	these activities.	learning through dynamic
			activities.
Motivation	Motivation is crucial in the	Teachers motivate their	Students say they receive
	language learning teaching	students during class	support from their teachers
	process.	hours to continue	and feel more confident in
		developing their	learning and developing
		language skills	English.

Resource: Data triangulation of the three research instruments

Elaborated by: The Author

Analysis

In the category 1. Learning English. – The results show that teachers recognize the importance of learning English during the academic training of their students, in the same way in the observation form it was possible to see that the students show positive attitudes towards the language confirming the data obtained in the survey in which they affirm that learning English is fundamental for their academic and professional life.

In the category 2. Innovative Strategies. – The teachers interviewed state that the use of innovative strategies helps to better understand a language, since through these strategies the knowledge of the students can be addressed. In the observation sheet it could be observed that the students maintain a positive attitude when the teacher implements innovative strategies when teaching a class topic, obtaining good results and active participation within their class, while in the survey the data mention that the students prefer to learn topics by applying these strategies, making them feel confident and eager to continue learning.

In the category 3. Technological tools. – The data shows that the use of hand-held technological tools with the implementation of the PDP methodology helps to develop and improve language skills. During the observation sheet it was evident that students have a positive attitude and desire to learn topics in English through the use of interactive platforms or technological tools, confirming in the survey that using these tools facilitates the teaching-learning process of the English language.

In the category 4. Didactic Resources – The information gathered during the use of the research instruments has been crucial. The teacher in the interview claims that using teaching resources



encourages students to learn and comprehend the language in a more meaningful and effective way. This is also supported by the observation sheet, where students actively participated by interacting with these resources. They also indicated in the survey that they feel at ease and that using these resources is a driving force behind their dynamic English language learning.

In the category 5. Motivation. – Teachers believe that the process of teaching and learning a language depends heavily on motivation. It was feasible to indicate in the survey that students receive encouragement and assistance from their teachers to overcome challenges and keep improving their language abilities, and it was possible to confirm in the observation form that students are motivated to study the language during English hours.

Discussion

Innovative teaching practices have existed since the beginning of education, as educators strive to enhance student engagement and effectiveness.

According to Ampa and Nurqalbi (2021), innovative teaching practices in English as a Foreign Language (EFL) attempt to improve student engagement, effectiveness, and efficiency by departing from established methods. Innovative teaching practices aim to promote active and collaborative learning. The creative teaching technique is designed to improve students' language abilities by allowing them to use the language in context and receive feedback from peers and teachers (Orlich et al., 2012; Zhu et al., 2013). The pedagogy of teaching foreign languages from neuroscience offers a comprehensive approach that combines knowledge about the brain, cognition, emotions and the sociocultural environment. (Zambrano, V. R. J., et. al., 2025).

Sumathi (2022) emphasizes the use of technology and multimedia in innovative educational practices. Many language teachers today employ a variety of digital technologies, such as video and audio recordings, online quizzes, and interactive games, to improve and engage language learners. These tools are especially beneficial for learners who prefer a visual and hands-on approach (Naz & Murad, 2017).

In terms of assessment, innovative teaching uses real assessment. Authentic assessment includes students actively participating in learning activities and doing inquiries to develop knowledge from their surroundings (Benson & Brack, 2010).

Innovative learning assessment measures students' knowledge competencies (critical thinking, problem-solving, creativity, collaboration, communication), intrapersonal competence (teamwork,

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communication, cooperation, coordination), and interpersonal competence (self-management, cooperation, effectivity).

Innovative teaching practices can boost student learning and engagement, leading to increased motivation and a better learning experience (Subramanian and Kelly, 2019). Motivation is acknowledged to be a crucial element in kids' academic success. It can enhance critical thinking and problem-solving abilities.

Conclusion

Innovative learning distinguishes itself from traditional methods of learning. The most notable distinction between the two is that conventional learning is teacher-centered, whereas innovative learning is student-centered. As a result, in creative learning, students are encouraged to be actively involved in developing their knowledge. Innovative learning aims to provide students with abilities necessary for global competition, including critical thinking, creativity, communication, and cooperation.

The development of innovative teaching strategies plays a crucial role in enhancing the learning of the English language, addressing both the challenges and opportunities of modern education. Teachers must constantly change and improve their approaches to guarantee that students are equipped with the skills, motivation, and knowledge required for success in an increasingly globalized and digital world. By including varied and forward-looking approaches, they can create more interesting, inclusive, and effective language learning experiences for students and educators.



References

- Ampa, Andi & Nurqalbi, Nurqalbi. (2021). Innovative Learning Strategies to Increase Students' Participation and Quality of English Teaching and Learning Process. Technium Social Sciences Journal. 26. 314-325. 10.47577/tssj.v26i1.5195. https://techniumscience.com/index.php/socialsciences/article/view/5195
- Benson, R., & Brack, C. (2010). Online assessment. In R. Benson & C. B. T.-O. L. and A. in H. E. Brack (Eds.), Online Learning and Assessment in Higher Education (pp. 107–153). Chandos Publishing. https://doi.org/https://doi.org/10.1016/B978-1-84334-577-0.50004-3
- Bolderston, A. (2012). Conducting a research interview. Journal of Medical Imaging and Radiation Sciences, 43(1), 66-76. https://www.sciencedirect.com/science/article/pii/S1939865411001329
- Check J., Schutt R. K. Survey research. In: J. Check, R. K. Schutt., editors. Research methods in education. Thousand Oaks, CA:: Sage Publications; 2012. pp. 159–185. [Google Scholar], https://methods.sagepub.com/book/mono/research-methods-in-education/chpt/survey-research
- Crawford, A., Mathews, S. R., Makinster, J., & Saul, E. W. (2005). Teaching and learning strategies for the thinking classroom. London, UK: International Debate Education Association. https://idebate.net/Publications/PDFs/Teaching%20and%20Learning%20Strategies%20for%20the%20Thinking%20Classroom%20-%20Alan%20Crawford%2C%20Samuel%20R.%20Mathews%2C%20Jim%20Makinster%2C%20E.%20Wendy%20Saul.pdf
- Doody, O., & Noonan, M. (2013). Preparing and conducting interviews to collect data. Nurse researcher, 20(5). https://pubmed.ncbi.nlm.nih.gov/23687846/
- Larsen-Freeman, D., & Anderson, M. (2011). Techniques and principles in language teaching (3rd ed.). London, UK: Oxford University Press. https://elt.oup.com/teachers/tplt/
- Orlich, D. C., Harder, R. J., Callahan, R. C., Trevisan, M. S., & Brown, A. H. (2012). Teaching strategies: A guide to effective instruction. Cengage Learning. https://www.cengage.com/c/teaching-strategies-a-guide-to-effective-instruction-11e-orlich-harder-trevisan-brown-miller/9781305960787/



- Hidayah, J., & Morganna, R. (2019). Fulfilling the needs of diverse students: teaching strategies for EFL inclusive classrooms. Suar Betang, 14(2), 183-195. https://suarbetang.kemdikbud.go.id/jurnal/index.php/BETANG/article/view/135/110
- Kiftiah, S. (2019). Teachers' strategies in giving explanation in efl classroom (Doctoral dissertation, Universitas Negeri Makassar). https://eprints.unm.ac.id/16083/
- Naz, F., & Murad, H. S. (2017). Innovative teaching has a positive impact on the performance of diverse students. SAGE Open, 7(4), 2158244017734022. https://journals.sagepub.com/doi/abs/10.1177/2158244017734022
- Pujiati, H., & Tamela, E. (2019, March). English Teaching and Learning Strategies on Genre Based Approach in Indonesian EFL Class: A Case Study. In Seventh International Conference on Languages and Arts (ICLA 2018) (pp. 397-403). Atlantis Press.Seminar Proceeding (pp. 336-342). https://www.atlantis-press.com/proceedings/icla-18/55914527
- Richards, J. C., & Rodgers, T. S. (2014). Approaches and methods in language teaching. Cambridge, UK: Cambridge University Press. https://www.cambridge.org/core/books/approaches-and-methods-in-language-teaching/340332E115A61DCBC3408E034FC706FC
- Sneddon, James. 2003. The Indonesian Language, Its History and Role in Modern Society. Sydney: NSW Press. https://unsw.press/books/the-indonesian-language
- Sumathi, D. (2022). Innovative teaching strategies. Psycho-technological approaches in heutagogy, 25. https://files.eric.ed.gov/fulltext/ED619929.pdf
- Subramanian, D. V., & Kelly, P. (2019). Effects of introducing innovative teaching methods in engineering classes: A case study on classes in an Indian university. Computer applications in engineering education, 27(1), 183-193. https://onlinelibrary.wiley.com/doi/abs/10.1002/cae.22067
- Zambrano, V. R. J., Zambrano, J. K. C., & Cornejo, F. V. J. (2025). Neurociencia Cognitiva para la Formación Docente. https://isbnecuador.com/catalogo.php?mode=detalle&nt=104248

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