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ESCUELA DE EDUCACIÓN

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EXTRANJEROS

RESEARCH REPORT

**THE USE OF CHATGPT TO IMPROVE STUDENTS' ENGLISH LANGUAGE
ACADEMIC WRITING**

INFORME DE INVESTIGACIÓN

**EL USO DE CHATGPT PARA MEJORAR LA ESCRITURA
ACADÉMICA EN INGLÉS DE LOS ESTUDIANTES**

PREVIO AL GRADO ACADÉMICO DE:

LICENCIATURA EN PEDAGOGÍA DEL IDIOMA INGLÉS

LINE OF INVESTIGATION

INNOVATIVE DIDACTIC STRATEGIES AND METHODOLOGIES

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STATEMENT BY THE AUTHOR

I, Adela Ivonne Mosquera Bustos, affirm that the investigation in the present report research is totally unique, authentic, and personal.

The content of this research is a limited legal and academic responsibility of the author and PUCE Esmeraldas.

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CERTIFICADO DEL DIRECTOR

Yo, PhD. Haydeé Ramírez Lozada, en calidad de directora de esta tesis, certifico haber revisado que el trabajo cumple los requisitos de calidad, originalidad y presentación exigibles y que se han incorporado las sugerencias del Tribunal al trabajo de grado.

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ABSTRACT

This study has been conducted to explore the potential effectiveness of integrating ChatGPT, an artificial intelligence language model developed by OpenAI, to enhance academic writing skills among English language learners. The study employs a mixed methods research approach, which includes a diagnostic assessment of the written proficiency of Pedagogy of National and Foreign Language students of the Pontifical University of Ecuador in Esmeraldas campus. The diagnostic assessment identified common areas of weakness in students' academic writing, such as logical organization, vocabulary usage, and coherence. Based on this and a non-experimental descriptive analysis, strategies have been developed that constitute the proposal to use ChatGPT as a tool in English language learning, specifically to address deficiencies in Academic Writing. Subsequently, methodological orientations were developed to address these challenges, emphasizing the role of ChatGPT as a tool for providing personalized feedback and scaffolding in the writing process. With this proposal, we aim to contribute to the literature on the potential application of artificial intelligence technologies in language education and provide practical insights for educators seeking to enhance academic writing instruction.

Keywords: ChatGPT; Academic Writing; Artificial Intelligence; English Learning.

RESUMEN

Este estudio ha sido realizado para explorar la efectividad potencial de integrar ChatGPT, un modelo de lenguaje de inteligencia artificial desarrollado por OpenAI, para mejorar las habilidades de escritura académica entre los estudiantes de inglés como lengua extranjera. Este estudio tiene un enfoque de investigación de métodos mixtos, en el que se ha hecho una evaluación diagnóstica de la competencia escrita de los estudiantes de la carrera de Pedagogía de los Idiomas Nacionales y Extranjeros sede Esmeraldas. La evaluación diagnóstica identificó áreas comunes de debilidad en la escritura académica de los estudiantes, como la organización lógica, el uso del vocabulario y la coherencia. En base a eso y a un análisis descriptivo no experimental, se han desarrollado estrategias que conforman la propuesta para utilizar ChatGPT como una herramienta en el aprendizaje del idioma Inglés, específicamente para abordar falencias en Escritura Académica. Posteriormente, se desarrollarán orientaciones metodológicas para abordar estos desafíos, enfatizando el papel de ChatGPT como una herramienta para proporcionar retroalimentación personalizada y andamiaje en el proceso de escritura. Con esta propuesta se busca contribuir a la literatura sobre la aplicación potencial de tecnologías de inteligencia artificial en la educación lingüística y proporcionará conocimientos prácticos para educadores que buscan mejorar la instrucción de escritura académica.

Palabras Clave: ChatGPT; Escritura Académica; Inteligencia Artificial; Aprendizaje de Inglés.

INTRODUCTION

Theme Presentation

In recent years, the proliferation of artificial intelligence (AI) technologies has catalyzed extensive research across diverse sectors. This study centers on the application of AI, specifically ChatGPT, within the domain of English language education. ChatGPT has become into a sophisticated language model, useful for simulating human-like conversations. These aspects represent the emblematic advancements in natural language processing.

English proficiency is an essential area in this contemporary interconnected world, for this, diverse methodologies have been created to develop a successful learning. However, traditional methodologies for language acquisition, such as textbooks, classroom instruction, and so on, may exhibit limitations in providing students with personalized language practice. Therefore, the integration of ChatGPT into English language education presents an innovative tool to redefine the pedagogical landscape.

This research aims to propose ChatGPT as a tool for English language learning, specifically in academic writing. Specifically focusing on academic writing, the study seeks to provide a strategy to use ChatGPT to improve students' writing skills, including logical organization, vocabulary usage, and overall coherence, particularly within the context of academic writing tasks. Through a mixed-methods study, this research attempts to quantify participants' Academic Writing problematics through a diagnostic test. The findings are anticipated to provide valuable insights to elaborate a strategy based on the use of ChatGPT in English language learning as a complementary resource in existing language instruction methodologies, particularly in the realm of academic writing.

In short, the expected outcomes of this study pretend to collaborate in the development of innovative AI-powered learning systems taking into account the unique needs and preferences of language learners.

Problem statement

Academic Writing presents significant challenges for both educators and students alike. Conventional teaching methodologies often manifest insufficient in engaging students and providing personalized feedback. However, the recent advance in artificial intelligence (AI) and natural language processing, particularly through advancements in language models like ChatGPT, present a transformative opportunity to revolutionize the landscape of English language instruction.

In the domain of English language education, students often experience challenges in academic writing, some of those difficulties are in logical organization and coherent expression, vocabulary selection, and grammatical accuracy. The use of technology may offers potential advantages. But despite all that, there is a gap in the literature about how ChatGPT could specifically address these challenges and revolutionize the process of English language teaching and learning process, especially in the realm of academic writing. The extent to how ChatGPT effectively enhances English language learning abilities and provides individualized and interactive learning experiences has not been deep examined or researched.

Focused on the need to solve the different problematics regarding errors in Academic Writing, of students of the Pedagogy of National and Foreign Language degree, this study emphasizes the crucial solution for the challenges mentioned and the use of ChatGPT determining if this tool can be strategically planned to address the manifest problems students face in academic writing. As ChatGPT has shown effectiveness in English language teaching, and given the lack of strategies utilizing this resource to teach academic writing, the following question emerges: Which didactic strategy based on ChatGPT may contribute to improve the students' English language Academic Writing?

Justification

With the development and rapid evolution of artificial intelligence and natural language processing technology in recent years, new opportunities for language acquisition have been created. Using conversational agents like ChatGPT to support English language learning is an important implementation of these technologies. The purpose of the present

study is to outline strategies, activities, and methodological guidelines aimed at addressing common errors in academic writing among students, and at the same time propose ChatGPT as a valuable tool for English learners.

An important aspect is the personalized learning experience; this is because each student has unique needs and learning styles. ChatGPT is an application that can be programmed to suit learners and their individual needs and interests, providing personalized feedback and guidance. Additionally, this personalized approach has been shown to improve student engagement and motivation (Ou & Baker, 2019). Furthermore, ChatGPT's ability to analyze learner responses can enable targeted language instruction, focusing on specific areas where learners need improvement (Saadawi & Bhat, 2020).

In addition, the use of ChatGPT provides access to authentic language input for developing natural language proficiency. ChatGPT can provide English language learners with exposure to authentic, contextually relevant language examples. This exposure helps learners develop their understanding of idiomatic expressions, colloquialisms, and cultural nuances in English (Liu, Chen, & Huang, 2022). By interacting with ChatGPT, students can access countless linguistic data and learn under the implementation of various conversational contexts.

On the other hand, ChatGPT promises to be a support in the learning process and in the practice of academic writing in English by providing the student with immediate feedback and error correction; Timely and accurate feedback is important for language learners to identify and rectify errors. ChatGPT can offer immediate feedback on coherence and cohesion, these aspects are important to achieve a good command of academic writing. According to these aspects, the different categorization provides a specific focus on the errors presented, for example; logical organization, development of ideas, correct use of vocabulary, punctuation, connectors and personal pronouns can be detected, and ChatGPT helps students recognize and correct errors in real time. Studies have shown that in AI-powered language learning tools, corrective feedback is delivered more effectively through means other than the social chatbot. They also found that guided self-correction offers a superior learning experience compared to explicit corrections, especially for students with high learning motivation or lower linguistic ability (Liang, et al., 2023). Furthermore, ChatGPT's non-judgmental nature provides a safe space for learners to experiment and learn from their errors.

One of the main opportunities of using ChatGPT to learn English is its availability and flexibility. Students can access ChatGPT anytime, anywhere as it allows them to practice

English at their own pace. This accessibility facilitates continued practice, which is vital for language acquisition.

In conclusion, integrating ChatGPT into English language learning has significant benefits, especially in improving students' academic writing skills. To enhance chat practice, personalized learning experiences, exposure to authentic linguistic information, instant feedback, and 24/7 availability, ChatGPT aligns with the principles of effective language learning and offers learners a tool useful for developing your English language skills, especially in the Academic Writing. While ChatGPT should not replace human interaction and instruction, its strategic integration into language learning circles can effectively complement and enhance the overall learning experience, particularly when addressing specific linguistic variables.

Objectives

General Objective:

To design a didactic strategy based on the use of ChatGPT to improve Pedagogy of National and Foreign Language students' English language Academic Writing.

Specific Objectives:

- To make a diagnosis of the referred students' English language Academic Writing more frequent mistakes.
- To plan procedures using ChatGPT according to the problematics identified in Academic Writing.
- To plan some activities using ChatGPT to improve the students' English language Academic Writing.
- To provide some methodological orientations for teachers to use ChatGPT to improve students' Academic Writing.

CHAPTER I

1. THEORETICAL FRAMEWORK

1.1. Scientific – Theoretical Foundation

1.1.1. Computer-Assisted Language Learning (CALL)

Computer-assisted language learning (CALL) is the use of computers to facilitate language learning. CALL can be used to give students access to a wide range of resources, including real text, grammar exercises, and vocabulary exercises. Furthermore, CALL gives students the opportunity to communicate with both native speakers and other students. According to Chapelle (2001) the term "Computer-Assisted Language Learning" (CALL) describes the use of technology, primarily software and digital platforms, to speed up language learning and skill development. The incorporation of chatbots into CALL, like ChatGPT, has substantial effects on improving language learning for English communication skills by presenting individualized, interactive, and immersive language practice opportunities.

Recent advancements in the use of technology and Computer-assisted methods for learning have included the Artificial Intelligence (AI) which include the utilization of chatbots like ChatGPT. A study developed by Kasnec, et al (2023) have identified the use of ChatGPT and the large language models as interest by giving opportunities for enhancement the teaching and learning process. Furthermore, they explain that there is a large range of teaching experiences in every level of education as well as primary, secondary, and so on. Additionally, the authors argued that large language models could help university students with their writing and research assignments as well as with the growth of their critical thinking and problem-solving abilities. With the use of these models, students can quickly comprehend a text's essential ideas and arrange their thoughts for writing by creating summaries and outlines of the material.

On the other hand, the implementation of ChatGPT in language learning can include different aspects in which the Communicative competences can experiment an improvement for the English Language Learners.

1.1.2. Higher Education and the use of ChatGPT

In recent years, Artificial Intelligence has taken part in different situations and has facilitated the way of teaching and learning. In the educational field, there are new opportunities and facilities that the AI can provide.

ChatGPT is a dedicated research assistant who can quickly access information and conversely carry out your requests. It can also be a writing partner who can help you come up with words, an intellectual sparring partner who can engage with you in stimulating discussions, a dedicated administrative assistant who can help you draft reports and business copy (Atlas, 2023, p. 12).

According to Zhong, et al. (2023) OpenAI-developed big language models that underpin ChatGPT's intelligence. Due to its powerful ability to respond to diverse follow-up questions, correct improper questions, and even reject unlawful questions, it has drawn significant interest from industry, academia, and the public. Moreover, ChatGPT is a free tool in which the learner will completely alter the way of practice the English language. This is because ChatGPT helps to improve vocabulary, grammar, conversation, exam preparation, and much more.

1.1.3. Enhancing Academic Writing Skills in English Language Learning

According to Marulanda and Martinez (2017) they emphasize the importance of a new academic writing course to improve English language learners' academic writing skills, focusing on language conventions, syntax, and the Process Approach in writing. They highlight the benefits of peer review, tutoring, and grammar reviews in enhancing academic writing abilities. Moreover, the key point that needs to be made is that academic writing abilities of English language learners can be greatly improved by offering individualized tuition, integrating peer review, and providing structured feedback. These techniques help to enhance writing proficiency and overall learning results, along with an emphasis on language rules and syntax.

Apart of the ideas presented, ChatGPT offers a certain group of activities useful to work enhancing Academic Writing teaching-learning process, these are:

1.1.3.1. Immediate Feedback

Learners who use ChatGPT can receive quick feedback on their written English. For the purpose of reinforcing proper language, this real-time correction and suggestions aid students in recognizing and correcting grammatical problems as they happen.

1.1.3.2. Repetitive Practice

Repetitive practice is beneficial for acquiring a language. ChatGPT can have countless talks, giving students the chance to consistently apply grammatical principles in various situations. The key to internalizing grammar rules is repetition.

1.1.3.3. Personalized Learning

ChatGPT can adjust to the student's competency level. As the learner advances, more complicated structures may be gradually introduced after simple grammar errors. With this individualized method, learning is both challenging and manageable.

1.1.3.4. Authentic Communication

An authentic communication platform is created by ChatGPT. In order to assist them apply grammatical principles in real-world contexts, learners might have discussions that mirror interpersonal interactions.

1.1.3.5. Grammar Rule Explanation

In addition to correcting errors, ChatGPT can also clarify the grammatical principles used in such repairs. Learners are better able to understand the underlying concepts when they are aware of why a specific construction is correct or improper.

1.1.4. Cohesion and Coherence in English Academic Writing

Together, cohesion and coherence produce a piece of writing that is well-organized and simple to read. Coherence improves readability by addressing the overall structure and logical flow of ideas, whereas cohesion deals with the grammatical and lexical relationships.

1.1.4.1. Cohesion

According to Halliday and Hasan (2014) cohesion refers to the grammatical and lexical elements used to connect different parts of a text, creating a sense of unity and flow. It involves the use of cohesive devices such as conjunctions, pronouns, and lexical items to link sentences and paragraphs together. In simpler terms, cohesion in language refers to how different parts of a text connect or relate to each other to create meaning. It is about the semantic ties that bind elements together within a piece of writing. When the authors say that interpretation of one element depends on another, they are essentially saying that the meaning or understanding of one part of the text relies on the comprehension of another part. Therefore, cohesion is about how the various words, phrases, and sentences in a text work together to form a coherent whole, where each part contributes to the overall meaning and understanding.

1.1.4.2. Coherence

Coherence and Academic Writing refers to the quality of being logical, consistent, and orderly in the presentation of ideas. It involves the smooth flow of information, clear connections between sentences and paragraphs, and the overall unity of the text (Johns, 1986). Coherence ensures that the reader can easily follow the writer's thoughts and understand the intended message without confusion or ambiguity. Coherence relates to the logical and meaningful organization of ideas within a text. It goes beyond the surface-level connections and focuses on the overall clarity and comprehensibility of the content. A coherent text presents information in a structured and easily understandable manner.

1.1.5. Natural Language Processing (NLP)

A subfield of artificial intelligence called "Natural Language Processing" (NLP) is concerned with how computers and human language interact. It entails the creation of algorithms and models that allow computers to comprehend, interpret, and produce human language, including speech and writing in a meaningful and effective way. As an important characteristic, AI provides the adaptability to the rhythm in which the person establishes communication. Although in theory feedback Meurers (2012) defines that NLP might also

appropriately highlight forms employed or target meaning features, or the appropriateness of a student's answer given the information provided by an exercise. The focus of analysis is typically on form errors produced by the learner.

1.1.6. Ethical Considerations and Learner Autonomy

Ethical considerations and learner autonomy play significant roles in language learning and teaching. According to Benson (2013) there are some key points related to these topics:

1.1.6.1. Informed Consent

The use of students' personal information or recordings for educational or research purposes requires their informed consent, which is a requirement of ethical language teaching. It is important to let learners know how their data will be used, stored, and safeguarded.

1.1.6.2. Privacy and Data Protection

The security and adherence to applicable data protection laws should be ensured by language educators when handling the personal information of their students. Consent must be obtained, data must be anonymized when appropriate, and privacy policies must be made clear.

1.1.6.3. Equity and Inclusion

When promoting equity and inclusion, ethical language teachers must consider the various needs, backgrounds, and skills of their students. The identities and cultures of students should be respected in the inclusive learning environments that educators design.

1.1.7. Learner Autonomy:

Developing learner autonomy entails giving students the freedom to be in charge of their own education. Students should have the chance to decide what they want to learn, establish objectives for themselves, and evaluate their results. Educators can offer direction and assistance for independent learning.

Furthermore, Buruk (2023) emphasizes the importance of ethical considerations when using ChatGPT in academic writing. They advocate for transparency in the use of GPT-3.5

models, suggesting documenting prompts, outcomes, and edits to ensure fidelity. The author also warns against potential risks such as plagiarism, dissemination of false information, and hateful rhetoric if ChatGPT is not used responsibly. They stress the need for authors to add comprehensive citations and acknowledgments when utilizing GPT-3.5 in academic work to maintain transparency and integrity in the writing process.

1.1.8. The Progressive and Critical Approach

Progressive education is described as a product of discontent with traditional education reminding the adult standards' impositions, subject matter, and methodologies (Williams, 2017). In other words, the author regards the necessity of changing the way of teaching and highlights the importance of having a basis to meet the diverse needs of all students. Regarding diversity needs, it is important to know about all the dimensions or differences in gender, ethnicity, socioeconomic background, and various learning styles and needs.

Furthermore, there is presented a strong connection between culture and teaching (Williams, 2017). Otherwise, pedagogical aspects including high expectations for all students, and the fostering of community and family engagement form part of the aim of the approach.

1.1.9. Zone of Proximal Development

Vygotsky (1979) in his learning theory establishes three theories with which he explains the process in infants to acquire knowledge and emphasizes that there is an iteration between learning and development. One of the theories of Vygotsky is called the Zone of Proximal Development. The essential description of this is;

The Zone of Proximal Development is the distance between the real level of development, determined by the capacity to solve a problem independently, and the level of potential development is determined by the problem resolution under the guidance of an adult (Vygotsky, 1979, p. 133).

In other words, the difference between what a student can accomplish on their own and what they can accomplish with the help and support of others, including teachers, peers, or educational resources, is known as Vygotsky's Zone of Proximal Development. In this zone, students are about to master new abilities or ideas, but they still need help to understand them

completely. These learning mediators act as scaffolds, offering learners the assistance and direction they need to go through the ZPD and pick up new abilities or knowledge.

1.2. Antecedents

The antecedents of this study trace the evolution of technology-enhanced language learning and the intersection of artificial intelligence (AI) with educational practices. The advent of Natural Language Processing (NLP) paved the way for transformative applications in language instruction. Early attempts to integrate AI into language learning were characterized by rule-based systems, but recent breakthroughs, such as the development of ChatGPT, have marked a parsnip.

According to Hidayatullah (2024) in “Evaluating the effectiveness of ChatGPT to improve English students’ writing skills”, this study aimed to explore how students use ChatGPT to improve their English writing skills while avoiding plagiarism. Using qualitative methods, including observation, interviews, and analysis of test results, this research sought to discover the extent to which students seamlessly incorporate ChatGPT into their writing practices while maintaining academic integrity. The expected outcome was a nuanced understanding of how students navigate using ChatGPT, balancing its benefits with the imperative of maintaining academic honesty.

Imran and Almusharraf (2023) in the research entitled “Analyzing the role of ChatGPT as a writing assistant at higher education level: A systematic review of the literature” explored ChatGPT’s role as an editorial assistant in academia by conducting a systematic literature review of the most relevant articles. By examining 550 articles published between December 2022 and May 2023, the study identifies different perspectives on using ChatGPT and how to effectively interact with it. The findings highlight both the opportunities and challenges that ChatGPT presents in academic writing, emphasizing the importance of understanding its role as a tool for both students and teachers. The research suggests the need to review and update training, policies, and assessment methods to address issues of academic integrity and originality in the context of AI-powered writing assistance.

Bruk (2023), presented the research “Academic Writing with GPT-3.5 (ChatGPT): Reflections on Practices, Efficacy and Transparency”. The research explored the use of GPT-

3.5, particularly ChatGPT, in academic writing, focusing on transparency, effectiveness, and ethical considerations. Additionally, I discuss various strategies such as Chunk Stylist, Talk Textualizer, and others, to take advantage of GPT-3.5 in writing processes. The study reflects on personal experiences and the implications of different approaches with GPT-3.5 on writing speed, style and motivation. Emphasizes the importance of critical thinking when using GPT-3.5 due to potential risks such as inaccuracies. The paper also highlights the need for proper citations and transparency when incorporating GPT-3.5 into academic work, offering insights into practical methods such as Bullet-to-Paragraph and Rephraser.

Son, C and Song, Y (2023) in the article entitled “Enhancing academic writing skills and motivation: assessing the efficacy of ChatGPT in AI-assisted language learning for EFL students” explored the impact of AI-assisted language learning on EFL learners' academic writing skills and motivation. By integrating artificial intelligence tools, students can improve their writing proficiency, organization, language use, and motivation levels. The findings suggest that AI interventions can significantly improve students' writing skills and their overall engagement with academic writing tasks. However, challenges such as contextual accuracy issues and potential over-reliance on AI feedback highlight the importance of carefully balancing the integration of AI into language learning environments. Going forward, it is crucial for educators to implement strict monitoring measures to accurately assess the benefits and potential drawbacks of AI-assisted language learning to improve writing skills and motivation among EFL learners.

Kostka and Toncelli (2023), in the research “Exploring Applications of ChatGPT to English Language Teaching: Opportunities, Challenges, and Recommendations” the authors focused on exploring the use of ChatGPT in English language teaching to understand its benefits and challenges. The study aimed to investigate students' perspectives on the integration of ChatGPT into class activities and its impact on engagement, critical thinking, and interaction. Positive results such as increased student engagement and peer interaction were observed when ChatGPT was incorporated into classes. Students were eager to critically analyze ChatGPT results and compare them with their own ideas, although many questioned its accuracy and usefulness based on their experiences. The research highlighted the importance of reflection, collaboration and discussions with students on ChatGPT to improve critical digital literacy skills and promote the ethical use of AI in education.

Halaweh (2023), in the study “ChatGPT in education: Strategies for responsible implementation” explored the effects of using ChatGPT in classrooms, raising issues such as plagiarism, determining what is true information, and difficulties with synthesizing literature. Although some universities have limited access to ChatGPT, banning it entirely may not be the best course of action. To ensure responsible use, the study recommends implementing tactics such as openness, proper attribution, and policy integration. The tool highlighted the value of preserving originality even in the face of its ability to inspire creativity and innovation. ChatGPT can help format references, improve English writing skills, editing and data availability, taking into account ethical considerations.

CHAPTER II

2. METHODOLOGY

2.1. Context.

This research was carried out at “Pontificia Universidad Católica del Ecuador sede Esmeraldas” in the degree of Pedagogía de los Idiomas Nacionales y Extranjeros in a certain group of students.

2.2. Type of investigation.

Through the Mixed Approach, this research attended to diagnose the most frequent mistakes in students in Academic Writing. Furthermore, this study is a research proposal designed to address the difficulties that students face when writing academically. proposes the use of ChatGPT as a tool to execute targeted interventions that would improve students' academic writing skills. The plan carried out in the study includes suggested methodologies. The purpose of this proposal is to use ChatGPT's capabilities as a learning mediator inside the Zone of Proximal Development to create and execute novel approaches to enhance English language instruction, specifically in the area of academic writing.

2.3. Population and sample.

The population was formed by 36 students from the Pedagogy of National and Foreign Languages Degree. The sample was constituted by 12 students of the 6th level. It was selected intentionally, because they are students reported with more academic writing difficulties.

2.4. Operationalization of the variables.

The variables for his research are:

Dependent variable: Academic Writing

Independent variable: Chat GPT

2.5. Methods

For this research, the following methods were used:

2.5.1. Analysis and synthesis

They were used to analyze different antecedents about previous uses of ChatGPT as a tool in English Language Learning, specifically in Academic Writing skill.

2.5.2. Hermeneutics

It was used for the understanding and interpretation of the results obtained after the application of the information added to this research. According to Kutsyuruba and McWatters (2023) describe the hermeneutics approach and its application, presents an overview of its methodology, uses, benefits, and drawbacks, and suggests additional readings, resources, and ideas for student engagement.

2.5.3. Inductive deductive method

By employing ChatGPT as a tool, the research was able to first investigate the unique difficulties that students face while writing for academic purposes (an inductive process), and then create a focused strategy based on accepted theories and principles (a deductive process). This combination method enables the creation of a useful solution for the difficulties analyzed.

2.6. Techniques.

For this research, it was considered to apply a diagnostic test as a part of the analysis of the most frequents academic writing mistakes.

2.7. Instruments.

To collect all the data, the designated instruments were in accordance with the different techniques, which were used:

2.7.1. Diagnostic test (An essay)

A subjective test applied to students allows showing the Academic Writing most frequent mistakes, according to a pre elaborated rubric, emphasizing the errors in cohesion and coherence.

2.7.2. Documentary review

The documentary review involved identifying relevant literature on academic writing problems and the use of ChatGPT in language learning. This included searching academic sources and analyzing documents to extract key insights (Appendix 2). The research design was informed by the review's findings, which also shaped the study's direction and identified gaps.

2.8. Data Processing.

The information was obtained from the application of the diagnostic test, and it was tabulated according to the criteria for evaluation established in the rubric chart (Appendix 3 and 4). The data was put in graphics with the use of Microsoft Excel program.

CHAPTER III

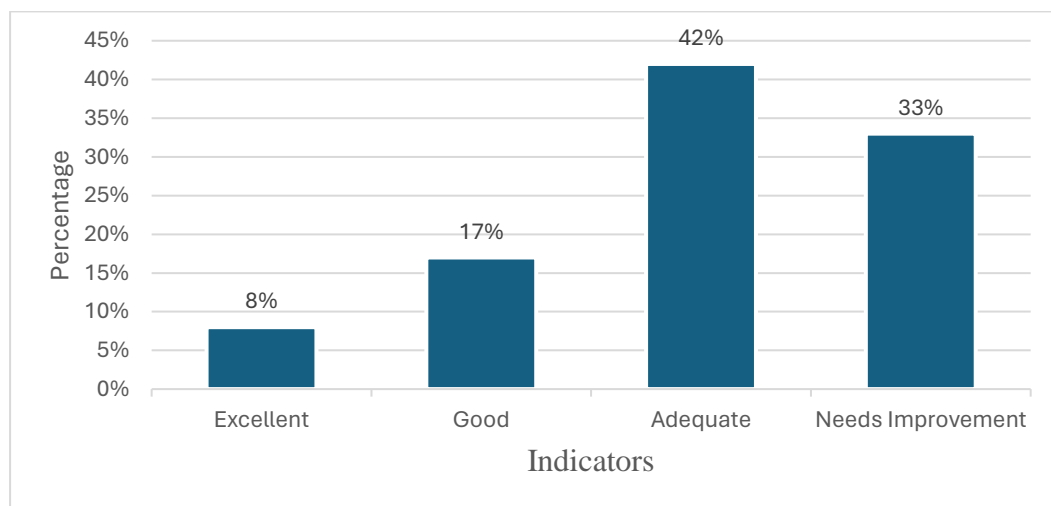
RESULTS

The diagnostic applied to students was focused on six key criteria: Logical Organization, Development of Ideas, Appropriate Use of Vocabulary, Pronouns, Connectors, and Repetition. The results are categorized into four levels: Excellent, Good, Adequate, and Needs Improvement.

The results about this item (figure1) revealed that a small proportion of students (8%) demonstrated exceptional (Excellent) logical organization skills in their writing, showcasing a clear and well-structured flow of ideas. The majority of students (42%) demonstrated an adequate (Adequate) level of logical organization, though some improvements could enhance overall clarity. Finally, a significant portion of students (33%) struggled with logical organization, indicating a need (Needs Improvement) for focused attention in structuring their written work.

Figure 1.

Logical Organization



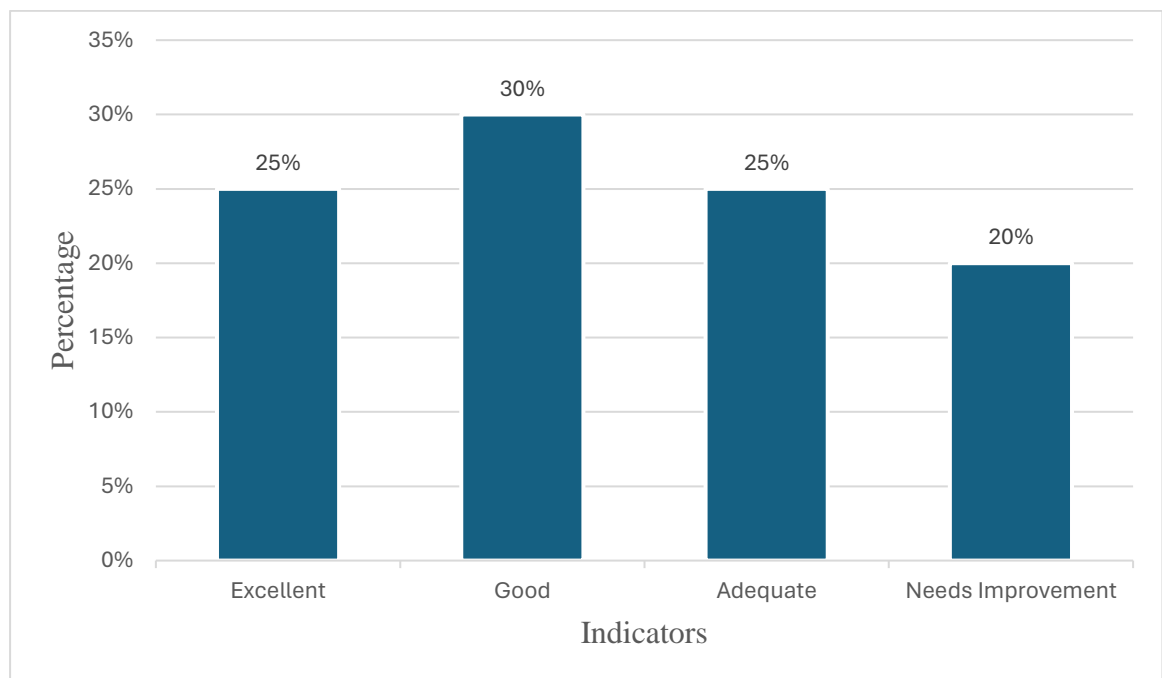
Source: Diagnostic applied to students

In the issue of Development of ideas in Figure 2, a quarter of the students (25%) excelled in developing ideas thoroughly, presenting well-elaborated and insightful content.

Another substantial group (30%) displayed good development of ideas, showcasing a commendable depth of thought in their writing. One-fourth of the students (25%) demonstrated an adequate level of idea development, though some enhancements could be beneficial. A smaller percentage (20%) struggled with developing ideas, indicating a need for improvement in conveying thoughts cohesively.

Figure 2.

Development of Ideas

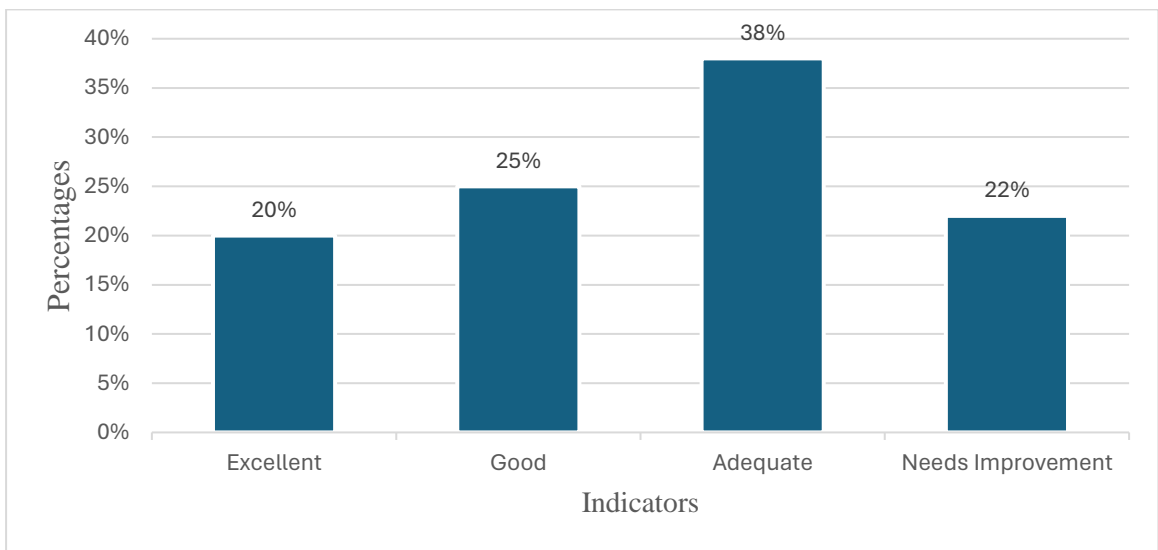


Source: Diagnostic applied to students

In Figure 3, in the aspect of appropriate use of vocabulary, a commendable number of students (20%) exhibited an excellent grasp of vocabulary, effectively using precise and sophisticated language. Another quarter (25%) displayed a good command of vocabulary, contributing to overall linguistic richness in their writing. (38%) A higher percentage demonstrated an adequate use of vocabulary, though some refinement could enhance expression. A smaller percentage (22%) struggled with vocabulary use, signaling a need for improvement in selecting appropriate words.

Figure 3.

Appropriate Use of Vocabulary.

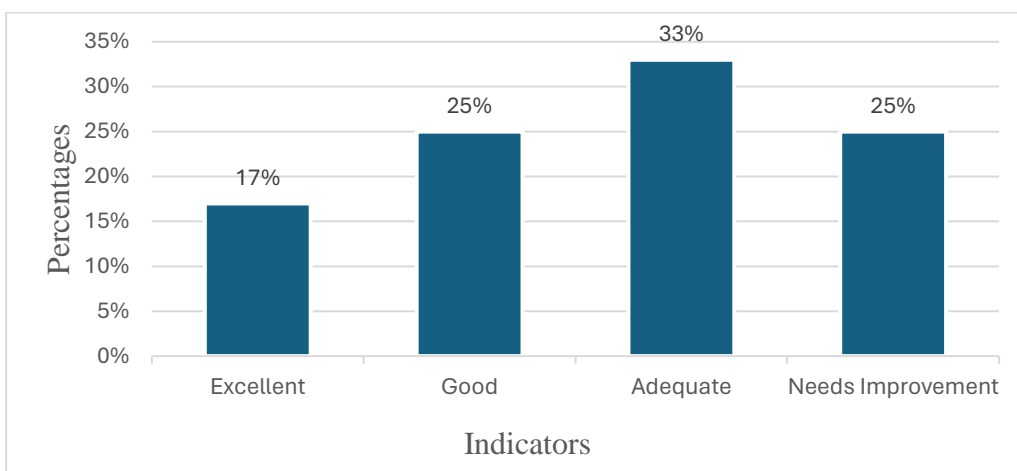


Source: Diagnostic applied to students.

In Figure 4, a notable percentage of students (17%) used pronouns effectively, contributing to a smooth and coherent narrative. On the other hand, a higher proportion (33%) and significant portion (25%) struggled with pronoun usage demonstrated an adequate use of pronouns, indicating a need for focused improvement in this area.

Figure 4.

Pronouns.

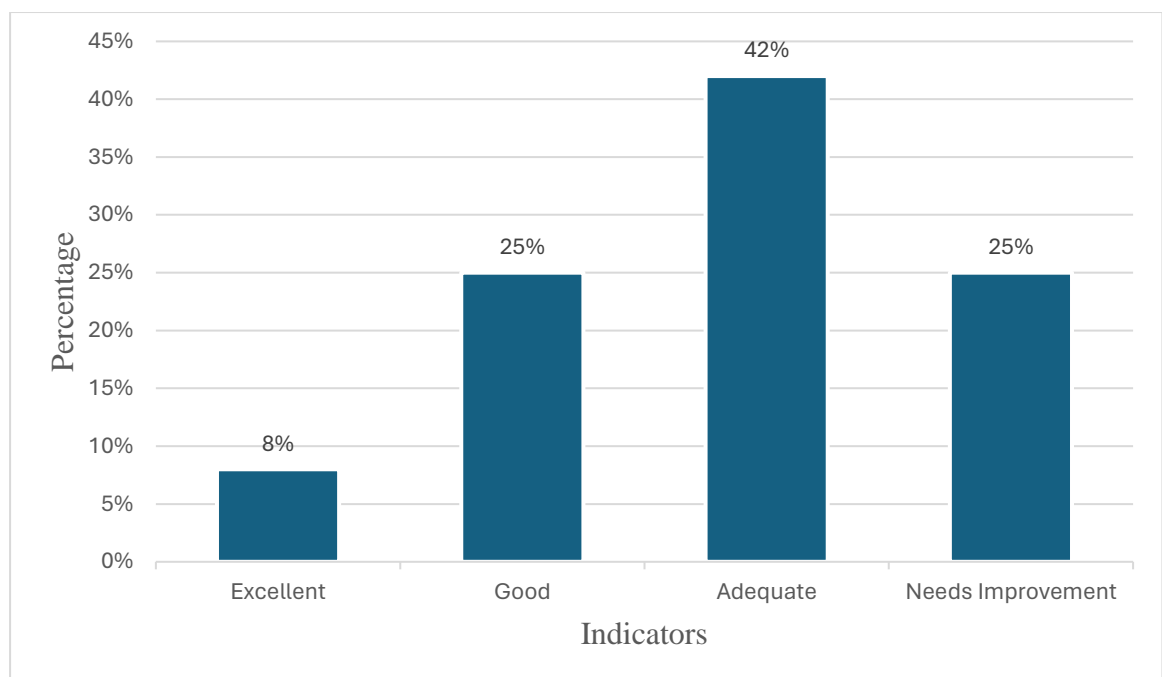


Source: Diagnostic applied to students.

In figure 5, a small group of students (8%) excelled in using connectors effectively, facilitating a seamless flow between ideas. A notable percentage (25%) displayed a good use of connectors, contributing to overall coherence in their writing. The majority (42%) demonstrated an adequate use of connectors, though some enhancements could improve the overall connectivity of ideas. A notable percentage (25%) struggled with connectors, highlighting the need for improvement in linking thoughts cohesively.

Figure 5.

Connectors.

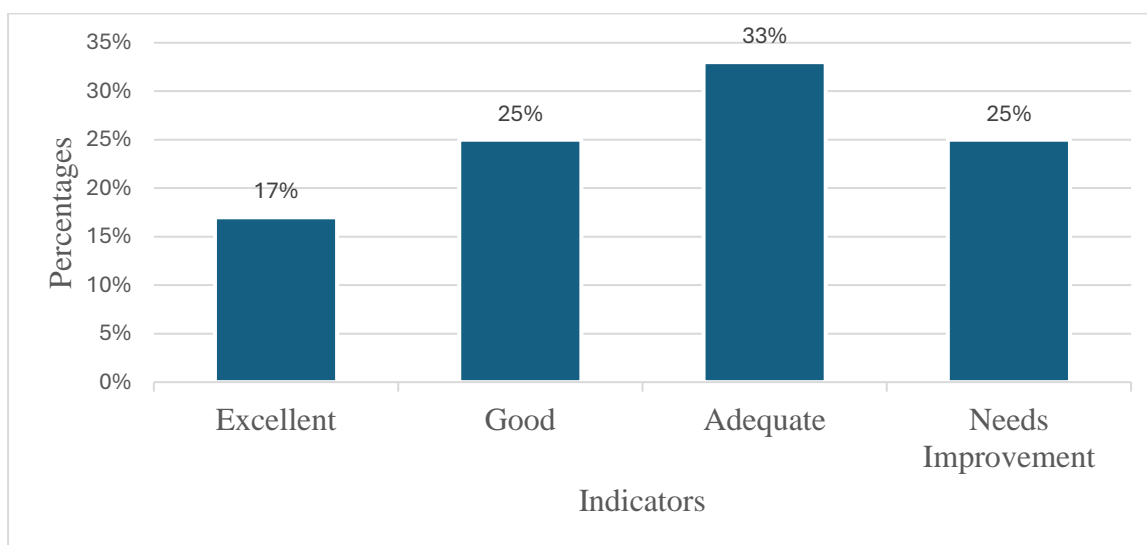


Source: Diagnostic applied to students.

In figure 6. A notable percentage of students (17%) successfully avoided unnecessary repetition in their writing, contributing to overall clarity. One-fourth (25%) demonstrated a good control over repetition, maintaining variety in their language. Another substantial group (33%) displayed an adequate level of control over repetition, though some enhancements could further improve their writing. A significant percentage (25%) struggled with repetition, indicating a need for improvement in diversifying their language use.

Figure 6.

Repetition



Source: Diagnostic applied to students.

Table 1. Diagnostic test of an essay

Criteria	Ex	G	A	N.I
Logical Organization	1 8%	2 17%	5 42%	4 33%
Development of Ideas	3 25%	4 33%	3 25%	2 17%
Appropriate Vocabulary	3 25%	3 25%	4 33%	2 17%
Pronouns	2 17%	3 25%	4 33%	3 25%
Connectors	1 8%	3 25%	5 33%	3 25%
Repetition	2 17%	4 33%	3 25%	3 25%

Note: Excelent (Ex), Good (G), Adequate (A), Needs Improvement (N.I)

Source: Diagnostic Applied to students

Based on the diagnostic assessment conducted among students, it is evident that there are varied levels of proficiency in different aspects of academic writing. Notably, while a percentage of students demonstrated commendable skills in logical organization and development of ideas, there is a significant percentage requiring improvement, particularly in areas such as the appropriate use of vocabulary, pronouns, connectors, and repetition. These findings highlight the need for targeted interventions aimed at addressing specific weaknesses identified in students' writing abilities. By adapting strategies to improve these key areas,

educators can better support students in developing well-rounded academic writing skills necessary for success in their academic endeavors.

With the results obtained after the implementation of the diagnosis made based on specific aspects of academic writing and after a meticulous documentary review, a proposal was prepared. This proposal responds to the general objective of this research, which aims to design a strategy that provides solutions to academic writing problems. Next, different aspects have been designed in the proposal that seeks to contribute to the development of activities. The following proposal is divided into procedures, activities, methodological guidelines and assessment.

PROPOSAL

“INNOVATIVE DIDACTIC STRATEGY USING CHATGPT TO IMPROVE ACADEMIC WRITING”

INTRODUCTION

The objective of this strategy is to develop and implement an integrated approach using ChatGPT to improve students' academic writing skills in English. This includes strategies, activities and methodological orientations designed to take advantage of ChatGPT as a collaborative writing assistant. The objective is to address specific writing challenges, such as logical organization, coherence, use of vocabulary, clarity of pronouns, conjunctions and reduction of repetition, ultimately improving the general writing capacity of students.

In today's educational landscape, technological advances offer innovative solutions to improve learning experiences. One such technology, ChatGPT, powered by advanced natural language processing, offers an exciting opportunity to change the way students approach academic writing. By integrating ChatGPT into writing instruction, educators can provide personalized support and guidance to students, helping them overcome common writing challenges and produce high-quality academic writing. This introduction lays the foundation for exploring how ChatGPT can be used effectively as a writing aid to empower students in their academic writing efforts in English.

Procedures to use ChatGPT in English Academic Writing teaching-learning process.

ChatGPT can be a valuable tool for both teachers and students to address the identified problems in academic writing. Here are some procedures for utilizing ChatGPT based on the specific writing issues:

Table 2. Procedures to use ChatGPT in English Academic Writing teaching-learning process.

Issues	Procedures for teachers	Procedures for students
Logical Organization	Provide students with writing prompts and ask them to outline their essays using ChatGPT. Encourage them to focus on the logical flow of ideas.	Utilize ChatGPT to create outlines before starting to write essays. Focus on the order of arguments and supporting details to enhance logical organization.
	Use ChatGPT to generate sample outlines for different types of essays, emphasizing logical organization. Discuss these examples in class.	Ask ChatGPT for feedback on the structure of your outline or essay. Revise accordingly to improve the coherence of your writing.
Development of Ideas	Assign specific topics and ask students to brainstorm ideas using ChatGPT. Discuss different approaches and encourage students to develop unique perspectives.	Use ChatGPT to explore various angles of a topic and generate ideas before starting your writing. Combine and refine these ideas to create a more comprehensive argument.
	Use ChatGPT as a tool for collaborative brainstorming sessions in class. Evaluate	Seek input from ChatGPT on the originality and depth of your ideas. Use the feedback

		the diversity and depth of ideas generated.	to enhance the richness of your content.
Appropriate Vocabulary	Use of	Encourage students to ask ChatGPT for synonyms or alternative phrases to diversify their vocabulary. Discuss the nuances of word choices in class. Provide a list of key terms and ask students to use ChatGPT to find suitable synonyms for each term. Discuss the appropriateness of the chosen words.	Use ChatGPT to explore synonyms and alternative phrases for common words in your writing. Ensure that the selected vocabulary aligns with the tone and context of your essay. Seek ChatGPT's assistance in identifying specific terms that enhance the precision and clarity of your writing.
Pronouns		Assign exercises where students use ChatGPT to practice proper pronoun usage. Discuss the importance of clarity and consistency in pronoun use. Ask ChatGPT to generate sample sentences with various pronoun references. Analyze these examples in class.	Use ChatGPT to check the consistency of pronoun usage in your writing. Seek guidance on improving clarity and coherence by refining pronoun references. Practice pronoun usage with ChatGPT to enhance your understanding of how different pronouns contribute to the overall flow of your writing.

Connectors	<p>Assign writing prompts and ask students to use ChatGPT to explore various connectors that enhance the coherence of their writing.</p> <p>Analyze sample essays generated by ChatGPT to identify effective uses of connectors. Discuss these examples in class.</p>	<p>Experiment with different connectors suggested by ChatGPT in your writing. Evaluate their impact on the overall flow and connectivity of your ideas.</p> <p>Seek ChatGPT's assistance in identifying appropriate connectors for specific transitions between paragraphs and ideas.</p>
Repetition	<p>Assign writing exercises where students use ChatGPT to identify and replace repetitive phrases in their drafts.</p> <p>Discuss the importance of variety in language and how ChatGPT can assist in avoiding unnecessary repetition.</p>	<p>Use ChatGPT to review your writing for repetitive elements. Seek suggestions for alternative phrases or synonyms to add variety to your language.</p> <p>Experiment with different ways to express the same idea using ChatGPT, ensuring that your writing maintains freshness and engagement.</p>

Table 3. General Tips for Teachers and Students

General Tips for Teachers and Students	
Teachers	Students
Integrate ChatGPT as a supplementary tool in writing workshops and peer review sessions.	Use ChatGPT as a resource, but always critically evaluate its suggestions to ensure they align with the context and requirements of your writing assignment.

Provide guidance on critically evaluating ChatGPT-generated content and encourage students to discern between suitable and unsuitable suggestions. Incorporate feedback from teachers and peers alongside ChatGPT's assistance to achieve a well-rounded improvement in your writing skills.

Development of Procedures Using ChatGPT

- 1. Diagnostic Assessment:** Begin by conducting a diagnostic assessment to identify students' specific writing challenges. For example, provide students with writing prompts covering different aspects of academic writing, such as logical organization, coherence, and vocabulary usage. Analyze students' responses to identify areas of improvement.
- 2. Strategic Planning:** Develop adapted strategies to address identified writing challenges. For example, if students struggle with coherence, provide prompts that encourage them to focus on transitions between paragraphs and the flow of ideas. Use ChatGPT to generate sample paragraphs that demonstrate effective coherence.
- 3. Activity Design:** Design interactive writing activities that incorporate ChatGPT as a collaborative writing assistant. For example, create a collaborative writing project in which students work together to write an essay on a given topic. Use ChatGPT to provide real-time feedback and suggestions as students write their essays.
- 4. Peer Collaboration:** Promote peer collaboration by integrating ChatGPT into peer review sessions. Pair students and ask them to review each other's writing. Encourage students to use ChatGPT to provide constructive feedback and suggestions for improvement.
- 5. Individualized Support:** Offer personalized support to students through writing conferences. During these sessions, provide personalized guidance and feedback using ChatGPT to address students' specific writing needs. Use ChatGPT to create personalized suggestions for improvement based on student writing samples.
- 6. Reflective Practices:** Motivate reflective writing practices by encouraging students to reflect on their writing process and the feedback they received from ChatGPT.

Encourage students to analyze their strengths and weaknesses as writers and establish goals for improvement. Use ChatGPT to create prompts for reflective writing exercises.

Activities using Chat GPT

Here are some activities that teachers can use with students to address specific academic writing problems using ChatGPT:

Table 4. Activities using ChatGPT

Academic Writing Problems / Activity	Development
Logical Organization: "Virtual Peer Review"	<ul style="list-style-type: none"> • Ask each student to submit an outline or draft of an essay on a shared online platform. • Pair students and provide them with the outline or draft of their peer's essay. • Task students with using ChatGPT to analyze and provide feedback on the logical organization of their peer's work. • Encourage students to discuss the feedback, make revisions, and resubmit their improved drafts.
Development of Ideas: "Perspective Exploration"	<ul style="list-style-type: none"> • Assign a common essay prompt to the entire class. • Have students individually use ChatGPT to brainstorm and generate diverse ideas related to the prompt. • Organize a class discussion where students share and compare the unique perspectives and insights they gathered. • Encourage students to incorporate the most compelling ideas into their own essays.

Appropriate Use of Vocabulary:

"Word Choice Workshop"

- Provide a list of common words relevant to an upcoming writing assignment.
- Instruct students to use ChatGPT to explore synonyms and alternative phrases for each word, focusing on precision and sophistication.
- Facilitate a class discussion where students share their newly discovered vocabulary choices and explain their selections.
- Ask students to incorporate the enhanced vocabulary into their drafts.

Pronouns:

"Pronoun Clinic"

- Collect sample paragraphs from various sources where pronoun usage is inconsistent or unclear.
- Divide the class into small groups and provide each group with a set of sample paragraphs.
- Instruct students to use ChatGPT to revise and clarify pronoun references in the paragraphs.
- Have each group present their revised paragraphs and discuss the improvements made.

Connectors:

"Transition Tune-Up"

- Share excerpts from student essays with weak or missing connectors.
- Ask students to use ChatGPT to identify effective connectors for specific transitions in the provided excerpts.
- Discuss the suggested connectors as a class and create a list of commonly used effective transitions.
- Assign students to revise their own essays, incorporating the identified connectors.

Repetition:

"Diversity Challenge

- Provide students with a paragraph from a sample essay with repetitive elements.
 - Challenge students to use ChatGPT to identify and replace repetitive phrases with alternatives that maintain clarity and variety.
 - Discuss the changes made and the impact on the overall quality of the writing.
 - Encourage students to apply these techniques to their own drafts.
-

General Tips for Activities:

- **Incorporate peer interaction:** Encourage students to discuss their findings and share ideas with each other. Peer collaboration can improve learning.
- **Provide real-world examples:** Use authentic writing samples from a variety of sources to demonstrate specific issues. Real-world examples make concepts more relevant.
- **Facilitate reflection:** Include a reflection component in each activity where students express what they learned from using ChatGPT and how it influenced their writing choices.
- **Encourage iterative improvement:** Emphasize that writing is a process. Allow students to review and improve their work based on information gained from ChatGPT and class discussions.

By incorporating these activities into the curriculum, teachers can create engaging and interactive learning experiences that leverage ChatGPT as a valuable tool for improving specific aspects of academic writing.

Methodological orientations

Here are general methodological orientations for teachers to work with ChatGPT across various academic writing problems, it is important to emphasize that this methods can be adapted to any academic issue or Academic Writing Problems, and an accurate sequence to include ChatGPT as an didactic strategy for English classes:

1. Introduction to ChatGPT:

- Begin with an introductory session on ChatGPT, explaining its capabilities and how it can assist in improving writing skills.
- Emphasize that ChatGPT is a tool for support and augmentation, and its suggestions should be critically evaluated.
- Provide examples of how ChatGPT can be used to address common writing challenges.

2. Diagnostic Writing Assessment:

- Conduct an initial diagnostic writing assessment to identify specific areas of concern in students' writing (logical organization, development of ideas, etc.).
- Use ChatGPT to analyze and generate feedback on sample student writing, showcasing its potential applications.
- Discuss the assessment results with students to set specific goals for improvement.

3. Individualized Writing Conferences:

- Schedule one-on-one writing conferences with students to discuss their specific writing challenges.
- Introduce ChatGPT as a collaborative tool during these conferences, using it to generate suggestions for improvement.
- Encourage students to ask questions and seek clarification on ChatGPT's recommendations.

4. Writing Workshops:

- Integrate ChatGPT into writing workshops focused on specific writing problems (logical organization, vocabulary use, etc.).

- Allow students to work in pairs or small groups, using ChatGPT to collaboratively address writing challenges.
- Facilitate discussions where students share their ChatGPT-assisted revisions and learn from each other.

5. Peer Review with ChatGPT:

- Incorporate ChatGPT into peer review sessions, where students use the tool to provide constructive feedback on each other's writing.
- Guide students on how to effectively use ChatGPT suggestions in their peer reviews.
- Encourage students to discuss and compare the feedback received from both peers and ChatGPT.

6. Reflective Writing Practice:

- Assign reflective writing tasks where students document their experiences using ChatGPT for various writing challenges.
- Encourage students to reflect on how ChatGPT influenced their writing choices and what they learned from the process.
- Discuss these reflections in class to promote a deeper understanding of the writing improvement process.

7. Integration into Curriculum:

- Seamlessly integrate ChatGPT activities into the existing curriculum at different stages of the writing process.
- Develop assignments that specifically utilize ChatGPT for brainstorming, editing, and revising.
- Emphasize the complementary role of ChatGPT alongside traditional writing instruction.

8. Continuous Improvement:

- Regularly assess the impact of ChatGPT activities on students' writing skills through formative assessments.

- Collect feedback from students on their experiences using ChatGPT and adjust methodologies accordingly.
- Emphasize a growth mindset, encouraging students to view ChatGPT as a tool for continuous improvement.

9. Ethical Use of Technology:

- Discuss the ethical use of technology in academic writing, emphasizing the importance of originality and authenticity.
- Guide students on responsible and ethical ways to incorporate ChatGPT suggestions into their work.
- Promote discussions on the potential challenges and benefits of using AI tools in the writing process.

10. Collaborative Learning Communities:

- Foster a collaborative learning environment where students feel comfortable sharing their experiences and insights with ChatGPT.
- Create discussion forums or online platforms for students to ask questions, share tips, and seek assistance from peers and teachers.
- Encourage a sense of community where students collectively work towards improving their writing skills.

These general methodological orientations provide a framework for teachers to incorporate ChatGPT into their teaching practices, emphasizing collaboration, reflection, and continuous improvement in students' academic writing skills.

Assessment of students

- 1. Formative Assessment:** Use formative assessment strategies to monitor student progress throughout the writing process. For example, give students writing prompts and use ChatGPT to give them real-time feedback as they compose their answers. Encourage students to revise their writing based on ChatGPT's suggestions.

2. **Peer Assessment:** Incorporate peer assessment activities where students evaluate each other's writing using feedback generated by ChatGPT. Provide students with rubrics that describe assessment criteria and encourage them to use ChatGPT to provide constructive feedback to their peers.
3. **Rubric-based assessment:** Develop rubrics aligned with learning objectives and writing standards. Use ChatGPT to create sample responses that exemplify each level of the rubric. Use these examples to guide students' understanding of the assessment criteria.
4. **Incorporating Feedback:** Incorporate feedback generated by ChatGPT into the review process. Provide students with prompts to reflect on the feedback they received from ChatGPT and revise their writing accordingly. Encourage students to use ChatGPT as a tool for continuous improvement.
5. **Summative Assessment:** Conduct summative assessments to assess students' overall writing ability. Give students prompts for writing essays or research papers, and use ChatGPT to provide feedback on their final drafts.

Assess students' ability to apply ChatGPT-supported writing strategies effectively to produce polished academic texts.

CHAPTER IV

DISCUSSION

The current research provides valuable information about the academic writing skills of tested students. The results indicate specific areas of strengths and weaknesses, offering a basis for targeted interventions and personalized feedback. Teachers and students can use this information to improve writing skills and promote more complete and effective communication of ideas in academic contexts.

In contrast to previous research's extensive investigation of the academic writing challenges faced by ESL learners, the current study focused on leveraging ChatGPT to address specific writing problems in academic English language contexts. While both studies identified similar challenges, the current research built on this knowledge by offering specific strategies and activities using ChatGPT. These interventions aimed to address specific writing problems identified in students, providing practical solutions for improvement.

Previous research provides important findings about the persistent challenges ESL students face in academic writing. However, it mainly focuses on identifying these challenges rather than offering solutions. Instead, the current study extends this knowledge by providing active interventions with ChatGPT. By addressing identified difficulties with specific strategies and activities, current research aims to empower ESL students to overcome their writing challenges and succeed in academic settings. Both studies collectively contribute to the debate on improving ESL students' academic writing, and the current research offers practical steps toward improvement.

The research conducted by Hidayatullah (2024) provides insights into how students use ChatGPT to improve their English writing skills while maintaining academic integrity. Using qualitative methods, including observation, interviews, and analysis of test results, the study aims to reveal the nuances of students' interactions with ChatGPT. This research complements our previous results by shedding light on the practical implications of integrating ChatGPT into writing practices, particularly with regard to plagiarism avoidance and academic honesty. Our established strategies, such as using ChatGPT to generate ideas and provide feedback on drafts,

align with Hidayatullah's research goals and offer practical solutions to improve writing skills while maintaining academic integrity.

In contrast, the systematic literature review conducted by Imran & Almusharraf (2023) offers a broader perspective on the role of ChatGPT as a writing aid in academia. By examining a wide range of articles, the study identifies different perspectives on the use of ChatGPT and its implications for students and instructors. While the current research focuses on the application of ChatGPT to address specific writing challenges, this study highlights the broader discourse around the opportunities and challenges of ChatGPT in academic writing, including issues of academic integrity and originality. The strategies we have created provide practical guidance to teachers and students on how to effectively integrate ChatGPT into writing instruction, addressing concerns raised in Imran & Almusharraf's critique about the need to rethink education, policies, and writing methods.

Buruk (2023) explores the practical aspects of using GPT-3.5, including ChatGPT, in academic writing. The study reflects on personal experiences and offers insights into strategies for leveraging GPT-3.5 in writing processes, emphasizing transparency, efficacy, and ethical considerations. This research provides valuable guidance for educators and students alike on how to effectively incorporate ChatGPT into academic writing practices while navigating potential risks and ensuring ethical usage. Our established strategies align with the recommendations from Buruk's presentation, offering educators practical methods for integrating ChatGPT into writing instruction while emphasizing critical thinking and proper citation practices.

Furthermore, Song, C and Song, Y's (2023) The article delves into the impact of AI-assisted language learning on English learners' academic writing skills and motivation. By incorporating AI tools, students can improve their writing ability and engagement in academic writing tasks. This study highlights the potential benefits of AI interventions in improving writing skills and motivation levels among students. However, it also highlights challenges such as contextual accuracy issues and over-reliance on AI feedback, emphasizing the importance of a balanced integration of AI into language learning environments. Our established strategies address these challenges by providing opportunities for peer collaboration and reflective writing practices, allowing students to critically evaluate the feedback generated by ChatGPT and develop their writing skills autonomously.

CHAPTER V

CONCLUSIONS

- The diagnostic phase provided valuable information about the predominant writing challenges faced by students, encompassing logical organization, idea development, vocabulary use, pronouns, conjunctions, and repetition. This understanding serves as a critical step toward specific interventions.
- The procedures designed with ChatGPT demonstrated their versatility in addressing various writing challenges. From outlining to improving vocabulary usage, ChatGPT could be a potential tool to improve academic writing in English language learning.
- Activities incorporating ChatGPT emerged as effective interventions to improve students' writing skills. Whether brainstorming, reviewing pronouns, or addressing repetitive language, ChatGPT could be instrumental in engaging students in the writing process.
- Establishing methodological guidelines is crucial for educators to guide the effective integration of ChatGPT into their teaching practices. From peer review sessions to individual conferences, the orientations provided a guideline for ethical and intentional use of technology.

CHAPTER VI

RECOMMENDATIONS

- Professors of Pedagogía de los Idiomas Nacionales y Extranjeros Degree must incorporate periodic diagnostic assessments into their curriculum to identify persistent writing problems. Additionally, institutions should begin using AI tools like ChatGPT to provide ongoing diagnostic support, enabling a continuous feedback loop to monitor and address students' changing writing needs.
- Educators could develop a repository of task-specific procedures using ChatGPT. This repository can serve as a resource for teachers, providing them with guidance to seamlessly integrate ChatGPT into specific writing tasks. Additionally, continuous training sessions should be conducted to improve teachers' competency in using ChatGPT effectively.
- Professors of PINE should design a variety of writing activities that incorporate ChatGPT. These activities should be aligned with specific writing challenges, offering students different opportunities to improve their skills collaboratively. Additionally, teachers should encourage students to explore ChatGPT independently, fostering a sense of autonomy in using the tool to improve their writing.
- It is suggested that researchers and teachers apply the proposed methodological guidelines in the classroom. Collaborative efforts with educators at the listed institution can facilitate the implementation and evaluation of these guidelines to address academic writing challenges among students.

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APPENDIX

Appendix 1. Operationalization of variables.

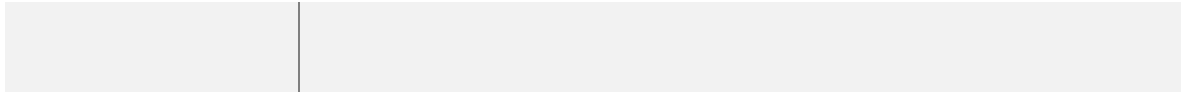
Objectives	Variables	Conceptual definition	Operational definition	Dimensions	Indicators	Techniques	Items	Score
<ul style="list-style-type: none"> To make a diagnosis of the students' English language academic writing more frequent mistakes. To plan procedures using ChatGPT according to the problematics identified in academic writing. To plan some activities using ChatGPT to improve the students' English language academic writing. To propose some 	<p>Independent Variable:</p> <p>Use of ChatGPT</p> <p>Dependent Variable:</p> <p>Academic Writing</p>	<p>The utilization of ChatGPT, an AI-based conversational model, as a tool or platform to facilitate language learning</p> <p>The proficiency in using the English language to write academically, Applying a good cohesion and coherence in writing skill.</p>	<p>Incorporating ChatGPT in English language learning activities, lessons, or assignments during classroom sessions as strategy for English language learning.</p> <p>ChatGPT can assist students in improving their</p>	<p>Cohesion in academic writing</p> <p>Coherence in academic writing</p>	<p>Strategies</p> <p>Activities</p> <p>Methodological Orientations</p>	<p>Diagnostic test</p>	<p>Coherence:</p> <p>Logical Organization</p> <p>Development of ideas</p> <p>Correct Use of Vocabulary</p> <p>Cohesion:</p> <p>Pronouns</p> <p>Connectors</p> <p>Repetition</p>	

methodological orientations to use the suggested tool.			Academic Writing					
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Appendix 2

Documentary review guide.

Author(s)	Title	Journal/source	Main findings



Appendix 3

Rubrics

Rubric 1: Coherence

Criteria	Excellent	Good	Adequate	Needs Improvement
LO Logical Organization	The essay has a clear and effective structure that enhances the overall flow of ideas. Each paragraph contributes to the central theme, and transitions are seamless.	The essay has a good structure with logical progression of ideas. Paragraphs are generally well-organized, and transitions are effective.	The essay has an acceptable structure, but some sections may lack clarity or smooth transitions.	The essay lacks a clear structure, making it difficult for the reader to follow the sequence of ideas.

				Transitions are missing or ineffective.
DI Development of Ideas	Ideas are thoroughly developed with relevant details, examples, and evidence. Each point contributes significantly to the overall argument or analysis.	Ideas are well-developed with adequate supporting details. The essay demonstrates a thoughtful exploration of the topic.	Ideas are present, but some may lack depth or be underdeveloped. Additional details and examples could strengthen the argument.	Ideas are unclear or poorly developed. The essay lacks depth and fails to provide sufficient evidence or examples.
VU Appropriate use of Vocabulary	The essay demonstrates a sophisticated and precise use of academic vocabulary, enhancing clarity and conveying the intended meaning effectively.	The essay uses a varied and appropriate range of vocabulary, contributing to the overall quality of expression.	Vocabulary is adequate but may lack variety or precision. Some words may be misused or not fully appropriate.	Vocabulary is limited, repetitive, or inappropriate for academic writing. It impedes understanding and weakens the essay's quality.

Rubric 2: Cohesion

Criteria	Excellent (4)	Good (3)	Adequate (2)	Needs Improvement (1)
P Pronouns	Pronouns are used effectively and appropriately throughout the essay. Clear references and consistent use contribute to overall coherence.	Pronoun usage is generally accurate, contributing to clarity. Some minor inconsistencies may be present.	Pronoun usage is acceptable but may be inconsistent, leading to occasional confusion.	Pronoun usage is unclear or consistently misused, hindering understanding and cohesion.

Connectors	Connectors (transitional words and phrases) are used skillfully to guide the reader through the essay. They enhance the logical flow of ideas.	Connectors are generally used effectively, contributing to the overall coherence. Some areas may benefit from increased use or variety.	Connectors are used, but their effectiveness is limited. Transitions between ideas are somewhat abrupt or unclear.	Connectors are either absent or misused, resulting in a disjointed and confusing essay. Transitions are lacking or ineffective.
Repetition	Repetition is purposeful and adds emphasis without detracting from the overall quality of the writing.	Minimal repetition is present, and it does not significantly impact the overall quality of the writing.	Repetition may occur, affecting the essay's flow. Some words or phrases could be varied for improvement.	Repetition is excessive, causing monotony and negatively impacting the overall coherence. Words and phrases are consistently overused.