

The use of self-generated visual representations and self- writing correctors to enhance writing competences in undergraduate EFL students.

El uso de representaciones visuales autogeneradas y correctores de escritura propios para mejorar las competencias escritas en estudiantes universitarios de inglés como lengua extranjera.

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Resumen

Este estudio investiga el impacto de las representaciones visuales autogeneradas como técnica previa a la escritura para mejorar las competencias escritas en estudiantes universitarios matriculados en la carrera de Pedagogía de los Idiomas Nacionales y Extranjeros de la Universidad Estatal de Milagro. Reconociendo la importancia crítica del dominio del idioma inglés en contextos académicos y profesionales, el estudio se centra en los desafíos que enfrentan los estudiantes de primer semestre al desarrollar habilidades de escritura, tales como el tiempo limitado, la falta de motivación y el bloqueo del escritor. Al introducir herramientas visuales como mapas mentales, diagramas y mapas conceptuales antes del proceso de redacción, el estudio busca facilitar la generación de ideas, mejorar la organización del contenido e incrementar la confianza del estudiante. La investigación se llevó a cabo durante un semestre académico, y el desempeño escrito de los estudiantes fue evaluado mediante una rúbrica alineada a los niveles A2–B1 del Marco Común Europeo de Referencia para las Lenguas (MCER), valorando la precisión gramatical, ortografía, puntuación y estructura de las oraciones. Los hallazgos demuestran que las técnicas visuales previas a la escritura contribuyen significativamente a mejorar la fluidez, precisión y coherencia en la escritura estudiantil. El artículo concluye abogando por la integración de estrategias visuales previas a la escritura en los planes de estudio de inglés como lengua extranjera (EFL) para abordar desafíos comunes y mejorar los resultados en la producción escrita.

Palabras clave: escritura académica, representaciones visuales, mapas mentales, estudiantes universitarios, EFL.

Abstract

This study investigates the impact of self-generated visual representations as a pre-writing technique to enhance writing competences in undergraduate students enrolled in the Pedagogy of National and Foreign Languages program at Universidad Estatal de Milagro. Recognizing the critical importance of English language proficiency in academic and professional settings, the study focuses on the challenges faced by first-semester students when developing writing skills, such as limited time, lack of motivation, and writer's block. By introducing visual tools such as mind maps, diagrams, and concept maps prior to the writing process, the study aims to facilitate idea generation, improve content organization, and increase students' confidence. The research was conducted over one academic semester, and students' writing performance was assessed using a rubric aligned with A2–B1 levels of the Common European Framework of Reference for Languages (CEFR), evaluating grammar accuracy, spelling, punctuation, and sentence structure. Findings show that visual pre-writing techniques significantly contribute to improving fluency, accuracy, and coherence in student writing. The article concludes by advocating for the integration of visual pre-writing strategies into EFL curricula to address common challenges and enhance writing outcomes.

Keywords: academic writing, visual representations, mind maps, undergraduate students, EFL.

Introduction

In today's globalized world, English language proficiency has become a fundamental skill for academic success and professional advancement. Writing, in particular, plays a pivotal role in this context, as it serves as a medium for expressing ideas, demonstrating knowledge, and engaging with diverse academic disciplines. However, achieving writing competence remains a challenge for EFL students who often battle with limited exposure to authentic English contexts, insufficient practice time, and a lack of motivation. According to Nation (2009), writing in a second language demands higher-order cognitive processes, including planning, organizing, and articulating thoughts in a coherent manner.

In EFL contexts, writing is frequently perceived as a daunting task due to time constraints, low motivation levels, and writer's block that prevent students from initiating and sustaining the writing process. Moreover, many learners encounter difficulties in brainstorming ideas and structuring their thoughts effectively, which leads to poorly organized and underdeveloped compositions (Hyland, 2019). As a result, EFL instructors must explore innovative and student-centered approaches that empower learners to overcome these challenges.

One effective way to help students improve their writing is by encourage them to use a self-improvement program as a tool to make them realize the mistakes the learners may have when writing and how to improve them. This programs that correct students' errors in writing, not only highlight when some words or sentences are incorrect, what is more, they provide students feedback on how to correct everything, and also, they give clear explanations on what was wrong. Also, when incorporating visual programs to practice spelling enhance the students' cognitive system in the target language by making the learners be involved on the accuracy of the second language. According to Mayer (2021), incorporating visual tools in the classroom improves cognitive processing, encourages critical thinking, and boosts creativity in writing tasks. These visual strategies provide several benefits. They help generate ideas by allowing students to

brainstorm and explore different perspectives. They improve organization by enabling students to arrange their content logically before starting to write. Additionally, they enhance coherence by establishing connections between ideas, resulting in smoother transitions between paragraphs. Visual tools can also reduce writer's block by offering a clear guide for content development and boost student confidence by giving them a structured approach to writing.

Given these advantages, it is important to explore how these techniques can impact student performance in real classroom settings. This study, therefore, aims to investigate how self-generated visual representations as a pre-writing technique can improve the writing competences of first-semester undergraduate EFL students.

Literature Review

Writing in the EFL Context

Writing in EFL (English as a Foreign Language) environments presents unique challenges that go beyond basic linguistic knowledge. Students are required to simultaneously develop fluency, accuracy, and organization to produce competent written work. Fluency refers to the ability to express ideas smoothly and continuously without frequent pauses or interruptions, allowing for a natural flow of ideas (Richards & Renandya, 2020). Accuracy, on the other hand, emphasizes the correct use of grammar, punctuation, and vocabulary, ensuring that the message is conveyed clearly and appropriately (Harmer, 2015). Organization involves arranging ideas logically and maintaining coherence throughout the text by using appropriate discourse markers and transitions (Hyland, 2019).

According to the Common European Framework of Reference (CEFR), at B1 and B2 levels, students are expected to produce coherent, well-structured texts that demonstrate a good command of language forms, discourse markers, and an understanding of different text types. At the B1 level, students should be able to write simple, connected texts on familiar topics,

expressing opinions and describing experiences clearly. At the B2 level, learners are expected to produce more complex and cohesive texts that reflect a higher degree of linguistic control and a better understanding of rhetorical structures (Council of Europe, 2020).

Despite these expectations, many EFL learners face difficulties in meeting these standards due to limited exposure to authentic writing environments, lack of practice, insufficient feedback, and the unawareness of how to use online programs as tools to help them writing better. As highlighted by Ferris and Hedgcock (2014), EFL students often face difficulties in achieving fluency due to inadequate vocabulary and insufficient opportunities to practice writing. Moreover, they tend to focus more on grammatical accuracy at the expense of coherence and organization, leading to fragmented and disorganized texts. These challenges highlight the need for effective pre-writing strategies that can help students bridge the gap between idea generation and text production.

The Use of Online Programs to Improve Writing in Beginners' Levels

When learning a second language, some students take time to learn how to write correctly due to the lack of personalized feedback given by their instructors. However, the implementation of online programs to correct accuracy in writing seems to be a good alternative when it is used as a tool for learning. According to Duong et. al. (2024), "AI technology can improve writing feedback quality, time, and flexibility for first-year students". When people start to study a second language, they may need a lot of guidance and preparation, especially in accuracy and spelling, which leads them to write better. Some programs such as Grammarly or Quillbot seem to be good alternatives for learners to help in their writing skills. "Grammarly provides reliable feedback on grammar, spelling, and sentence structure, improving students' writing by identifying mistakes and providing a resource for becoming better writers and grammar experts" (Trank, 2025). Using these programs not only gives the learners alternatives and advice on how to improve their writing

but also helps the instructors practice other skills rather than spending hours only checking the students' mistakes.

Visual Representations in Language Learning

Visual representations refer to the process of transforming abstract concepts into visual formats such as mind maps, diagrams, concept maps, and graphic organizers, which help learners establish meaningful connections between ideas. These tools enable students to visually organize and structure their thoughts, allowing for a more systematic and coherent approach to content development (Novak & Cañas, 2008). Visual representations are grounded in constructivist learning theories, which emphasize the importance of building knowledge through active engagement and reflection. According to Novak and Gowin (2012), concept maps, in particular, facilitate meaningful learning by encouraging students to link new information to prior knowledge, enhancing their ability to categorize, compare, and synthesize ideas effectively.

Benefits of Visual Representations in EFL Contexts

In EFL learning environments, visual representations offer numerous advantages that extend beyond simple content organization. Visual tools serve as cognitive scaffolding, supporting learners as they move through various stages of the writing process. For instance, mind maps allow students to brainstorm ideas freely and explore multiple perspectives, fostering creativity and divergent thinking (Aljaser, 2017). Graphic organizers such as Venn diagrams or flowcharts assist students in identifying relationships between concepts, promoting a deeper understanding of the subject matter (Hyland, 2019). Moreover, visual aids encourage metacognitive reflection, enabling learners to assess their knowledge gaps, refine their understanding, and plan their writing tasks more effectively (Chamot & O'Malley, 1994).

Visual representations also promote active engagement and learner autonomy. When students create their own visual models, they take ownership of their learning process, which

strengthens their motivation and increases their confidence in approaching writing tasks. According to Jiang and Grabe (2007), visual aids foster a sense of control over the writing process by reducing the cognitive load associated with idea generation and content organization. This reduction in cognitive load allows learners to focus more on producing coherent and well-structured texts, ultimately enhancing their writing performance.

Role of Visual Representations in Writing Competences

Visual representations are particularly beneficial in improving writing competences, as they help learners address critical aspects such as fluency, accuracy, and organization. When learners use visual aids to brainstorm and plan their writing, they can generate ideas more fluidly, reducing the time spent thinking about what to write. Diagrams and flowcharts provide a clear visual guide for organizing ideas logically, ensuring that the content flows smoothly and remains coherent. Furthermore, as visual organizers encourage critical thinking and problem-solving, they help learners identify gaps in their knowledge and refine their content, leading to improved accuracy in grammar and vocabulary usage (Shin, 2020).

Visual Representations and Pre-Writing Techniques

In the context of pre-writing techniques, visual representations provide a structured approach to idea generation and content organization. Pre-writing is a crucial phase in the writing process, where students conceptualize ideas, plan their content, and establish a logical sequence for their writing. Visual tools such as mind maps and concept diagrams guide learners through this phase, encouraging them to identify key ideas, create hierarchies of information, and develop coherent outlines for their compositions (Alves et al., 2021). This structured approach enhances the quality of the final written product, as students can maintain a clear focus on their main arguments and ensure that supporting details align with the overall thesis.

Additionally, visual representation techniques contribute to reducing writer's block, a common challenge faced by EFL students. By allowing learners to brainstorm and visualize different perspectives, visual tools create a roadmap that guides the writing process and minimizes the anxiety associated with generating content (Ferris & Hedgcock, 2014). As highlighted by Hyland (2019), pre-writing techniques that incorporate visual elements significantly enhance students' ability to structure their thoughts and maintain a logical flow of ideas throughout their texts.

Empirical Evidence Supporting Visual Representations

Several studies underscore the effectiveness of visual representations in enhancing EFL writing competences. For example, a study conducted by Ojima (2006) found that Japanese EFL students who used concept mapping techniques during the pre-writing phase produced more coherent and organized essays compared to those who relied solely on traditional brainstorming methods. Similarly, Jiang and Grabe (2007) reported that visual tools improved the writing fluency and accuracy of Chinese university students by enabling them to generate ideas and structure their texts more effectively. These findings highlight the potential of visual representations to bridge the gap between idea generation and content production, ultimately leading to improved writing outcomes in EFL contexts.

In summary, visual representations offer a powerful and effective pre-writing technique that enhances the writing process by fostering idea generation, improving content organization, and promoting metacognitive reflection. By integrating visual tools into writing instruction, educators can equip EFL learners with the skills and confidence needed to excel in academic writing tasks.

Now, to provide a comprehensive understanding of the theoretical foundation underlying this study, a strong systematic review of the literature was conducted, focusing on key aspects

related to writing in EFL contexts, visual representations, and pre-writing techniques. The reviewed literature highlights the challenges faced by EFL learners in developing fluency, accuracy, and organization in their writing, emphasizing the importance of employing effective strategies to address these difficulties. Visual representations, including mind maps, diagrams, and concept maps, have been shown to facilitate meaningful learning by promoting cognitive engagement, enhancing metacognitive awareness, and enabling students to organize their ideas effectively before the drafting phase (Novak & Cañas, 2008; Shin, 2020). Moreover, incorporating these visual tools as pre-writing techniques can help reduce writer's block, improve coherence, and foster a more structured approach to content development.

Methodology.

Participants

This research aims to prove that the use of online platforms that self-correct accuracy in writing and the use of visual representations to teach spelling, grammar, and vocabulary helps students in the first level of the university to enhance their writing skills and become more proficient. This study involves fifty-two- undergraduate students in their first semester enrolled in the Bachelor's degree program in Pedagogy of National and Foreign Languages at a university in Milagro, Guayas, Ecuador. All students hold an A.2 level of English according to the pre-requirements they must have a course that semester.

The participants were between 18 to 35 years old, and all of them had good skills in managing technology independently. Also, all of them have technological gadgets such as laptops, smartphones, or computers and internet access at home. In addition, the university also provides free internet connection and the students can borrow laptops from the library in case they need them to use for educational purposes. All the data live in the same region, taking into consideration the university was public and situated in a small city in Ecuador. All the researchers

are very active in class, and they also are very competitive which makes this research meaningful and actionable.

Instruments

This study used a quantitative instrument and lasted one semester of a university career. A pre-test based on writing skills and spelling was applied to the students in the first week of classes. It lets the researchers analyze the students' proficiency and the weaknesses the learners may have in their accuracy when writing. Furthermore, the researchers explained to the students that the results obtained would not affect their grades since all the data obtained during the whole process would be used for research purposes.

During this process, the participants did not have any guidance from the instructor and had one hour to work on a standardized test that was created based on mixing topics in A.2. and B.1. according to the Common European Framework. After four months of introducing the use of online writing correctors and visual representations to the participants. They had to take a post-test, which was modified, making it more complex and more difficult. The students also had one hour to take the test, but this time they were divided into two groups. So, they could be more concentrated.

Design, procedure, and data analysis

Over a study period of one semester, the students from the first semester of the career Pedagogy of National and Foreign Languages freely volunteered participate in this research. In addition, the assigned English teacher agreed to let the learners experience a methodology that would help them improve their writing skills. The participants have six hours of English a week, and the professor assigned three hours weekly to the researchers to work with the students. There

were two sessions during the week, one lasts two hours, and the other lasts one hour which means the data have a total of 42 writing lessons.

During the first month, the researcher used visual representations to enhance the students' spelling and reinforce grammatical patterns. The visual representations used were images, graphic organizers, infographics, charts, etc. For this part the instructors used technology, the classroom was equipped with technological gadgets, and it also had a good internet connection. There were also times where the researcher prepared tangible material or asked the students to work on paper or the board to not be repetitive in the class and to make the students experiment with ludic exercises on paper.

Once the spelling and grammar were reinforced, it was time to work on the writing accuracy. During the second, third, and fourth months, the researcher works on writing exercises by introducing programs such as Grammarly or Quillbot as a tool to help the students' writing skills. They showed the participants how to take advantage of these programs by taking advantage of the feedback given because it explains to the students where the mistakes were, why they are considered errors, and how to improve.

The researchers took time to check how the students were using these programs, and there were times to ask the students to expose the recommendations the online tools provide to correct their failures in their writing exercises. These months were crucial for the students to take the post-test because they had to apply everything learned, and one of the challenges of the researchers was that while the students using the self-grammar corrector programs, they would not forget what was gained in the first month. For this reason, they tried to use spelling and grammatical exercises as warm-ups in some classes.

Analysis of results

This research uses a quantitative instrument to carry out the data analysis. All the data collected was examined using the SPSS program to show the results obtained from the pre-test and post-test. The statistical values were represented in tables by showing the mean in the pre and post-test. It also shows that this research has a positive impact on the students' learning process of a second language by improving their writing skills.

Tabla 1.

Pre-test and Post test.

Criteria	Pre-test Mean	Pot-test Mean
Grammar Accuracy	1.06	2.08
Spelling Proficiency	2.02	4.01
Punctuation Use	1.01	3.09
Sentence Structure Awareness	1.05	4.03
Vocabulary Precision	2.09	4.05
Writing Confidence	1.03	2.07
Autonomous Learning	1.08	3.06
Metalinguistic Awareness	2.01	4.06

Source: Angulo, D., Fabre, P. 2025

Table one shows the media of the results obtained during the pre-test and the post-test. It is evident that after the methodology was applied in the sample, there was an improvement in the way the students write and spell words. For example, the students enhanced their grammar accuracy by having a mean of 1.06 in the pre-test and a mean of 2.08 in the post-test. Another aspect improved was the punctuation use, in the pre-test the students had a mean of 1.01, and

in the post-test, they had a mean of 3.09. The participants also boosted sentence structure awareness by having a mean of 1.05 in the pre-test and 4.03 in the post-test. There was a significant enhancement in how the students used the language in context and the correct words when writing. In particular, the learners got better in vocabulary precision by having a mean of 2.09 in the pre-test and a mean of 4.05 in the post-test. All presented in the table demonstrated that using a well-structured and designed methodology based on the students' context will help the students to have positive results in their writing skills

Conclusions and recommendations

During this research, it was evident that many students improved their spelling when writing because the instructor was a facilitator during the first sections allowing them to correct and understand their mistakes. Also, he guides the learners to pay attention to their writing styles. In addition, the use of visual representations not only allowed the participants to improve their spelling and gain vocabulary but also used ludic activities while using this technique that made the lessons more interesting, dynamic, and interactive.

While introducing the online programs to self-correct writing, the participants seemed to understand better how to improve their mistakes when writing due to the fact the programs themselves provide some ways to do it and explain their reasons why the errors need to be enhanced. Also, the instructors have more time to concentrate and help the students who may need more assistance to boost their skills. Using this kind of tool also creates independent learning in the students, and the vast majority of them need less help as time passes to work on their writing exercises by showing improvement not only in writing but also in grammar patterns and accuracy.

Future researchers should take into consideration that working in these kinds of programs during a study period, the students could be nervous and anxious because they may think it is

about having good grades rather than getting knowledge to improve their weaknesses. For that reason, it is important to explain the focus of the research to the participants. So, they can benefit and acquire knowledge meaningfully. In addition, the professor must have a good attitude when the learners make lots of mistakes in their first sessions and try to work in groups to provide feedback, so more people can benefit from it.

Teachers must take into account that working with writing in the first levels can be demanding and repetitive. For that reason, they must prepare dynamic activities such as warm-ups or closing in all the lessons to have the students active while learning. In addition, when applying this kind of methodology, the researchers must check if the institution has good internet access for the students due to the online programs used during this study. Moreover, they must encourage the students to be curious and create activities in which all the learners can show that they benefit from the feedback given by the educational self-corrector programs.

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