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## **Enhancing ESL Students' Writing Skills through Natural Language Processing Model Chat GPT**

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**Abstract:** This research paper describes an experimental study to determine the effectiveness of using Chat GPT based natural language processing (NLP) model to improve the writing proficiency of ESL students. The study shows how such approach can be integrated into the teaching process to improve the quality of writing skills. The paper provides an overview of methods of teaching writing according to certain criteria for assessing writing skills. The effectiveness of the model is assessed in comparison with traditional teaching methods. Recommendations are given for optimizing the learning process using NLP technologies. The conclusion highlights the significance of the technology used in improving writing skills and discusses the prospects for using the Chat GPT model to optimize these skills in ESL students.

**Keywords:** Chat GPT technologies, Methods of teaching writing, ESL students

### **Introduction**

When teaching a foreign language, as it is known, it is necessary to develop four skills simultaneously: listening, reading, speaking and writing. In the contemporary digital age, efficient writing skills undeniably play an integral role in daily communication and are considered the key to success (Graham & Harris, 2023). Their development is necessary for students to communicate in remote settings, starting with social platforms and networks. Competent written communication helps to avoid misunderstandings in both personal and business contexts, which can generally have a positive impact on the future of students.

Moreover, regular writing practice significantly improves oral speech skills, forcing to think about spelling, grammatical phenomena, sentence structure and overall textual coherence. For ESL students the refinement of writing skills tends to trail behind as this skill requires extended vocabulary and involves stylistic flair when necessary to compose a letter or write an essay or article. If speaking skills are possible to develop within the time frame of classes, then writing skills, as a rule, require more time outside the allocated class time as they involve meticulous review of the work, accompanied by comments, analyzing shortcomings and errors, and finally, the assessment in accordance with certain criteria.

### **The Review of Existing Technologies and Methods of Teaching Writing**

High information technologies are a consequence of the inevitable processes of globalization. Modern didactics have long used various innovative forms of teaching such as role-playing game, project method, ICT, critical thinking techniques, etc. Previously, methods for enhancing writing skills included creative writing, project-based learning, problem-based learning method, theory of project learning, discussion methods, in particular, brainwriting as a written form of brainstorming. All *innovative teaching methods* involve interactive and

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computer technologies. *Interactive technologies* encompass scientific, social, professional, integrative and other forms of classes, as well as seminars structured around brainstorming sessions and educational discussions. Computer-assisted learning technologies involve the selection, processing, storage and transmission of information to students. Chat GPT, an artificial intelligence model based on generative pre-trained transformers, which represents one of the pioneering products developed by Open AI artificial intelligence research laboratory established in 2015.

The integration of advanced language models like Chat GPT versions GPT-3.5, GPT-4 and others (Generative Pre-trained Transformer) into language education, contributes to modernizing pedagogical transformations and opens up new technological opportunities in language education. Numerous researchers (Alexander et al., 2023; Baskara & Mukarto, 2023; George et al., 2023; Perkins, 2023.) highlight the benefits associated with the utilization of Chat GPT. Ongoing research endeavors are focused on exploring practical implementation of Chat GPT in the context of foreign language teaching (Kukulka-Hulme, Bossu et al., 2023; Luckin, Cukurova et al., 2022). The positive impact of Chat GPT on language learning lies in its capacity to enhance various aspects of the learning experience, such as improving speaking skills, reading, writing, grammar and pronunciation accuracy (Kohnke et al., 2023).

One of the key focal points in the integration of Chat GPT within language education revolves around to the potential for enhancing students' writing skills through using Chat GPT (Ahmed, 2023). Concurrently, the author highlights a higher level of satisfaction among EFL students with the outcomes achieved through teacher-mediated instruction as opposed to writing assistance provided by Chat GPT. Researchers Y. Xiao and Y. Zhi have reported improved writing quality and language competence using Chat GPT (Xiao & Zhi, 2023). In a separate study D. Yang conducted a study showcasing the extensive application of Chat GPT across various educational tasks, in particular text editing, in which students took help from Chat GPT regarding the structural and content aspects of their essays. Furthermore, Chat GPT has proven useful in providing examples and ideas for strengthening argumentation in written compositions. This feature proves particularly beneficial in large groups, where the number of students constrains personalized attention from the teacher. By offering personalized feedback and suggestions, Chat GPT thereby improves students' learning efficiency, fosters comprehension of linguistic subtleties, and boosts students' capacity to construct coherent and complex texts (Yan, 2023). This tailored approach holds particular significance in language learning, given students' diverse needs and varying learning paces. Notwithstanding the manifold advantages that Chat GPT offers in language learning, a number of challenges have arisen. As pointed out in various studies, despite its advanced capabilities, Chat GPT also does not consistently cater to the different language levels of students (Liu, 2024).

Scientists unanimously still consider Chat GPT as an assistant and a valuable source of learning that can help in the analysis of written work (Marzuki et al., 2023). As a result, it has been argued that the combination of artificial intelligence and human interaction represents a promising approach to improving language teaching learning experiences (Li et al., 2023). It is commonly recognized that conducting a comprehensive analysis of every written work presents a challenge in a sizable group of students. The GPT chat emerges as a viable solution to this issue, given its capability to offer a detailed assessment of all aspects of the written work of each student within the group. Hence, **the objective** of our study is to describe the integration of Chat GPT and its instructional application in learning process aimed at enhancing writing proficiency. The areas of application of Chat GPT for developing writing skills may encompass such activities as vocabulary enrichment, grammar refinement, analyzing written work, writing texts of various styles, fostering independent student work for self-assessment and skill development and, finally, facilitating spelling and grammar checks by teachers of students' essays.

## **Methodology**

### **Participants**

Two groups of undergraduate intermediate level students at the Tourism Department were selected randomly: a controlled group and an experimental group. Each group consisted of ten individuals studying English General Course. Randomization was employed to ensure unbiased presentation. We hypothesized that students who participated in experimental group showcase a greater increase in improvement of their writing skills in terms of formulating their thoughts and structuring texts, creativity and diversity in their written work.

### **Methods of Learning Using Chat GPT**

The teaching method involved feedback from the Chat GPT model, learning through examples using Chat GPT, as well as generating ideas for written text and correcting errors with Chat GPT. The description of the methods includes students learning to analyze and interact with text examples created by the Chat GPT.

## Results and Discussion

Evaluating the level of writing among English as a Second Language (ESL) students has been conducted using a diverse set of criteria. The devised general criteria serve to assess the level of writing skills of ESL students aiding in pinpointing areas requiring improvement, and enabling the educator to objectively evaluate students' work. The experiment was conducted with 20 second-year Tourism Department intermediate (B1 level) ESL students, during which the group was divided into control and experimental groups. The experiment took place over the course of two weeks. We used the following criteria to assess students' works.

**Grammar and spelling:** grammar, accuracy and spelling proficiency encompasses the correct application of verb tenses, subject-predicate agreement, and the appropriate use of articles, prepositions, and other linguistic elements.

**Vocabulary:** Evaluating vocabulary entails the use of a range of lexical items and precision of word usage. Students have to demonstrate the ability to use a variety of words and expressions to articulate their thoughts and ideas effectively.

**Text organization of the text:** Assessment of the ability to structure a text and express thoughts cohesively and logically. This criterion includes the use of paragraphs and connecting words and phrases to ensure a coherent flow of ideas throughout the text.

**Clarity and accuracy of thought expression:** Assessment how accurately and clearly a student expresses his or her thoughts and ideas. This requires clear language and reasoning.

**Punctuation:** Assessment for proper punctuation usage in the written work.

While studying English grammar and developing grammar proficiency in writing, the students were given the following types of tasks generated by Chat GPT:



Here are some grammar exercises focusing on the passive voice related to the topic of social media impact on society:

**Exercise 1:**  
Rewrite the following sentences using the passive voice:

1. Social media influencers shape consumer behavior.
2. Users share news articles on social media platforms.
3. Companies use social media for marketing their products.
4. Researchers have studied the impact of social media on mental health.
5. People often discuss important issues on social media.

**Exercise 2:**  
Fill in the blanks with the correct passive voice form of the verbs:

1. Many online campaigns \_\_\_\_\_ (organize) by social media users.
2. The new social media policy \_\_\_\_\_ (implement) by the company last month.
3. Important information about the event \_\_\_\_\_ (share) on various social media platforms.
4. Studies on social media trends \_\_\_\_\_ (conduct) by researchers every year.
5. The impact of fake news on society \_\_\_\_\_ (discuss) in many online forums.

Figure1. Grammar exercises generated by Chat GPT

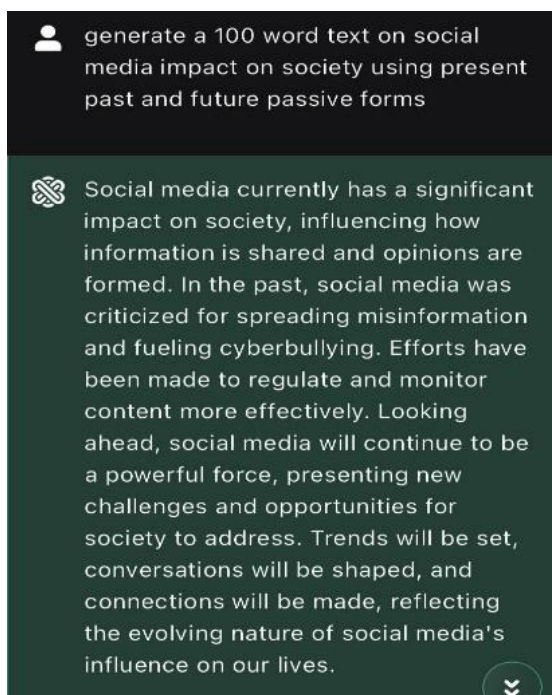


Figure 2. Grammar-based text generated by chat gpt

Provided exercises (Fig.1) aimed at reinforcing passive voice structures. The answers were generated later for the self-test purposes. In comparison to practicing certain grammar structures within sentences, Chat GPT - generated English texts (Fig.2) were also used to allow students to observe their application in a broader context.

In the process of working with **vocabulary**, we compiled a list of words based on the previously given text to practice contextual learning relevant to the topic. Subsequently, exercises (Fig.3) with missing words in the sentences were generated.

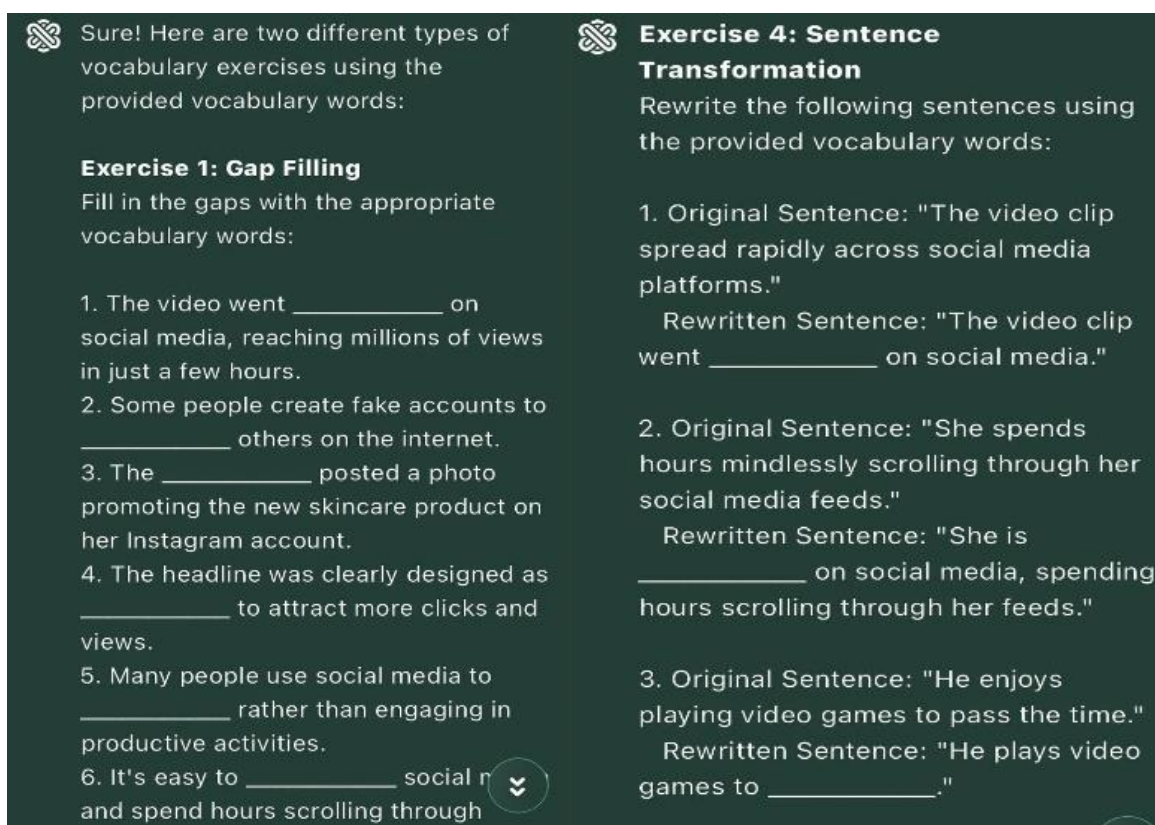
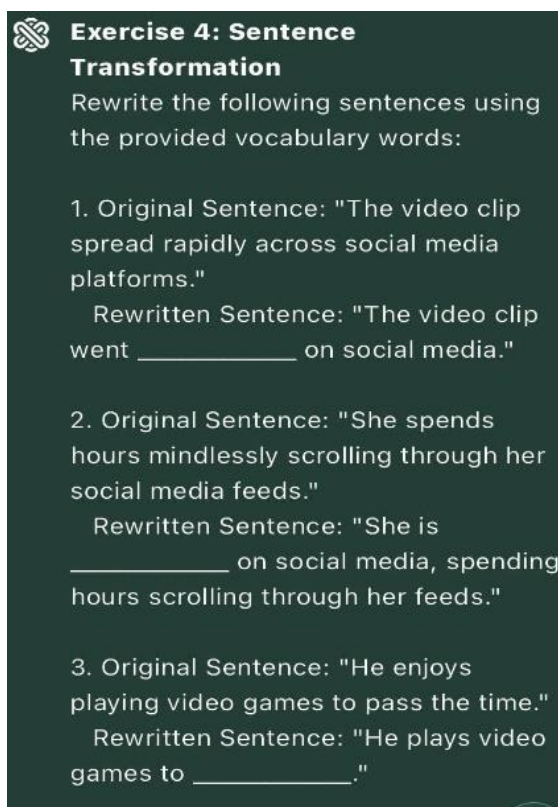


Figure 3. Vocabulary exercises generated by Chat GPT



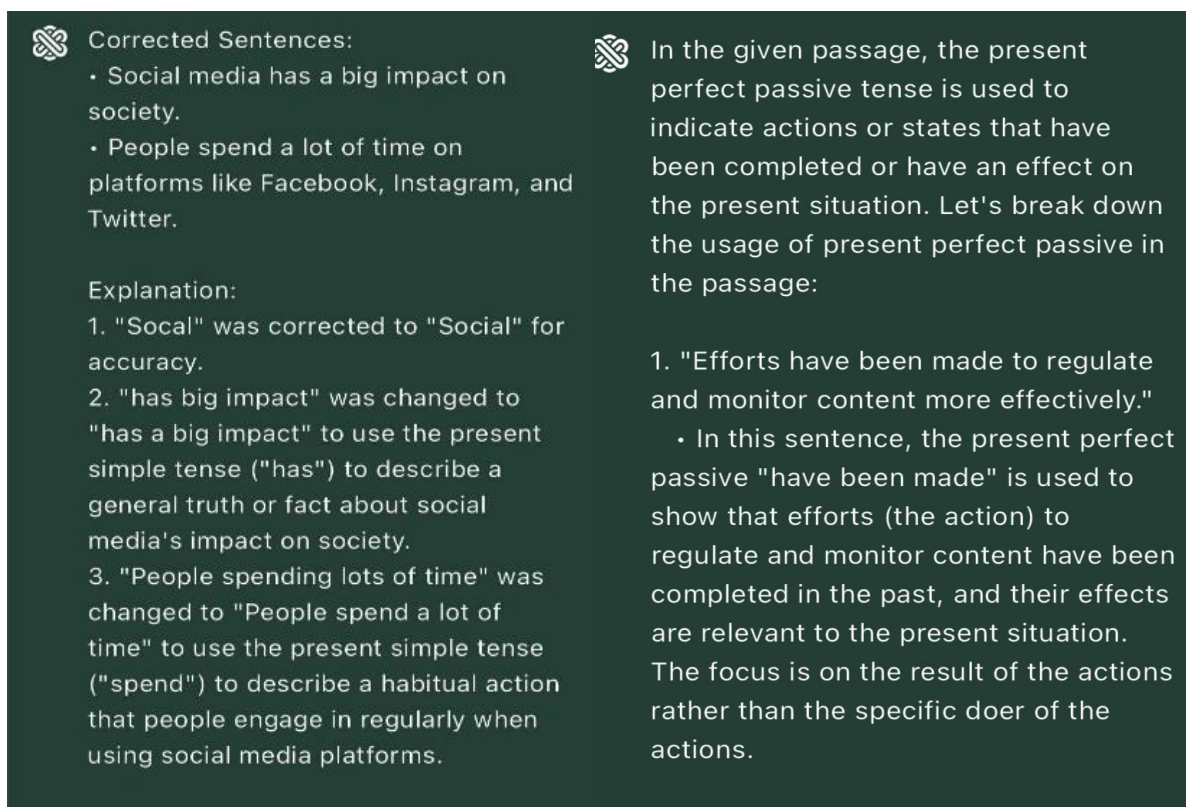


**Exercise 4: Sentence Transformation**  
Rewrite the following sentences using the provided vocabulary words:

1. Original Sentence: "The video clip spread rapidly across social media platforms."  
Rewritten Sentence: "The video clip went \_\_\_\_\_ on social media."
2. Original Sentence: "She spends hours mindlessly scrolling through her social media feeds."  
Rewritten Sentence: "She is \_\_\_\_\_ on social media, spending hours scrolling through her feeds."
3. Original Sentence: "He enjoys playing video games to pass the time."  
Rewritten Sentence: "He plays video games to \_\_\_\_\_."

Figure 4. Sentence transformation exercises generated by Chat GPT

Using the GPT chat, students were able not only to check their sentences for errors but also to receive the corrected versions along with a brief explanation (Fig.5). In addition, GPT addressed challenges (Fig.6) encountered when using various grammatical structures.



**Corrected Sentences:**

- Social media has a big impact on society.
- People spend a lot of time on platforms like Facebook, Instagram, and Twitter.

**Explanation:**

1. "Socal" was corrected to "Social" for accuracy.
2. "has big impact" was changed to "has a big impact" to use the present simple tense ("has") to describe a general truth or fact about social media's impact on society.
3. "People spending lots of time" was changed to "People spend a lot of time" to use the present simple tense ("spend") to describe a habitual action that people engage in regularly when using social media platforms.

**In the given passage, the present perfect passive tense is used to indicate actions or states that have been completed or have an effect on the present situation. Let's break down the usage of present perfect passive in the passage:**

1. "Efforts have been made to regulate and monitor content more effectively."
  - In this sentence, the present perfect passive "have been made" is used to show that efforts (the action) to regulate and monitor content have been completed in the past, and their effects are relevant to the present situation. The focus is on the result of the actions rather than the specific doer of the actions.

Figure 5,6. Chat GPT corrections along with the explanations.

An additional task was assigned to ESL students of the tourism department aimed at enhancing their writing skills through chat GPT. The task involved composing an essay on the topic of “The Impact of Social Media on Society” students exploring the ways of how social media facilitates the formation of public opinion. Subsequently students had to submit their essays to the chat GPT for error identification, analysis and correction. Following this process, students were to collaboratively analyze and discuss their errors within groups and share the corrected versions with their peers accompanied by reflections on their errors.

Before conducting the main experiment, we collected average data from the control and experimental groups and identified the average outcome of both groups. The works were evaluated based on the following aspects: grammar, vocabulary, text organization, spelling, clarity, and punctuation. The visualization of the prior-experiment's results using a graph allows for the comparison of the writing skill outcomes in both groups before the experiment. Each aspect was assessed on a scale of up to 10 points, following which the group's average statistical data was collected. The final results indicate an average score of 38% (Fig.7) for the control group and 39% for the experimental group (Fig. 8), reflecting the aggregated performance achieved by students in each group across various aspects of written work.

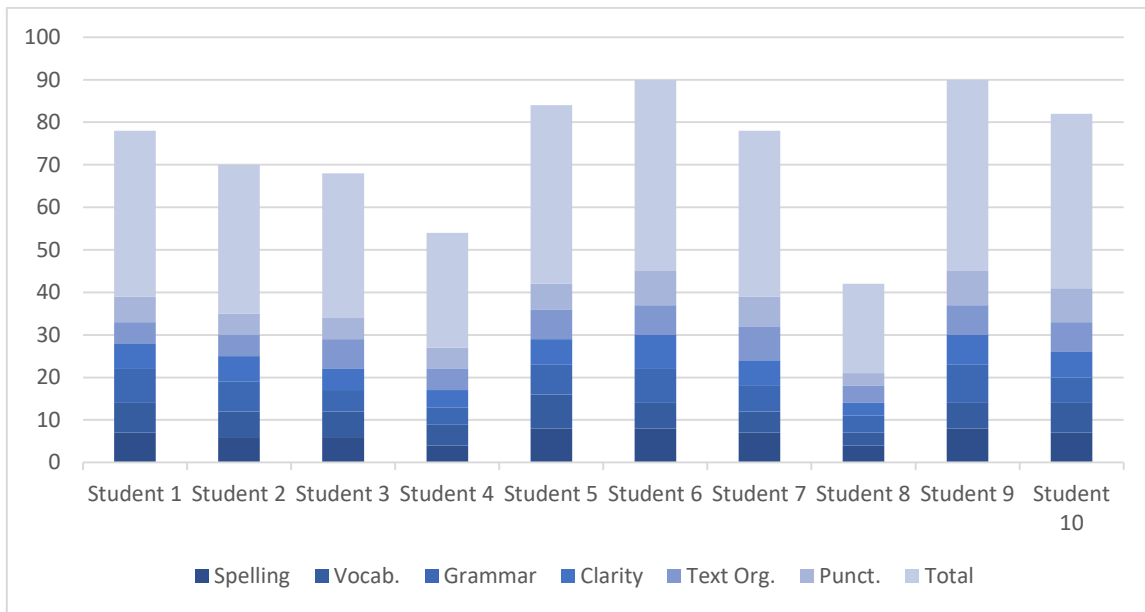


Figure 7. Controlled group pre-experiment data

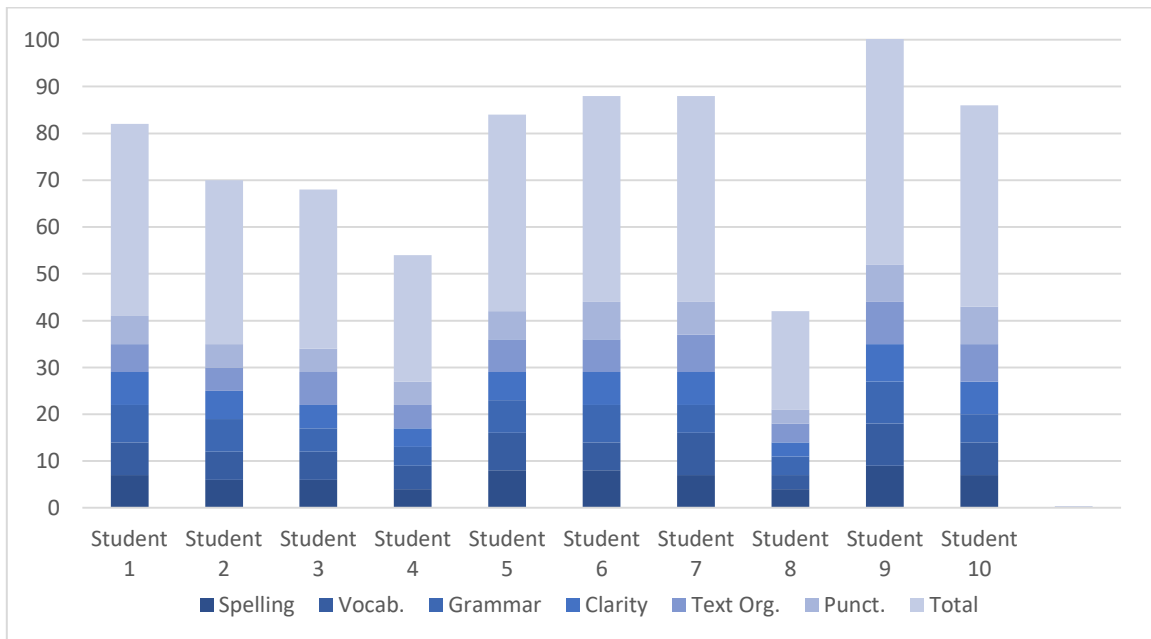


Figure 8. Experiment group pre-experiment data

The comparison of the results of the experimental group's works before and after the experiment, allows us to conclude that the use of the Chat GPT natural language processing model is capable of effectively influencing the development of written language skills across all specified aspects, particularly in the areas of grammar and vocabulary enrichment. After using a textbook and summarizing the work using traditional methods, the data shows 3% result which is less effective than the results of the experimental group.

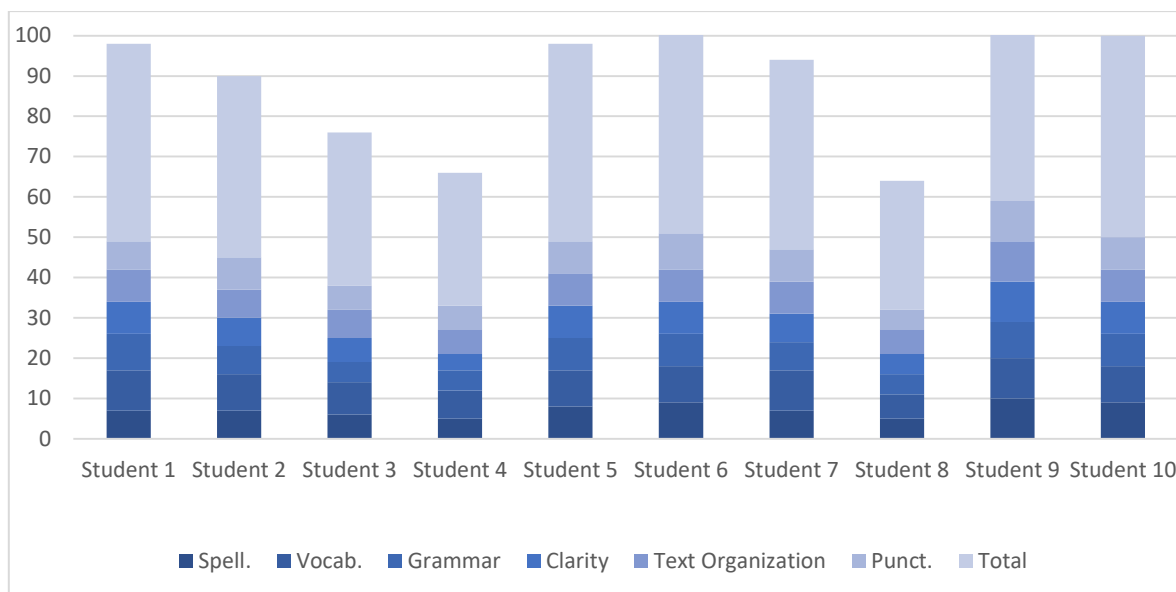


Figure 9. Experiment group post-experiment data

The initial indicator in the control group was 38%, while it was 41% in the average group scores in the same group after the experiment. In the experimental group, before applying Chat GPT, the initial results were 39%, which increased to 45% after the Chat GPT application. This represents a significant increase of 6% in comparison with 3% respectively in the controlled group, indicating the effectiveness of using Chat GPT. The improvement in the performance can be attributed to the heightened motivation and interest of students when engaging with artificial intelligence technology. During the experiment, students had the opportunity to analyze and interact with text examples generated by the model. This interactive learning experience helped them enhance their skills in formulating thoughts and structuring texts, thereby fostering creativity and diversity in their written work. The quality of students' written assignments improved notably, thanks to the prompt feedback and personalized learning provided by the AI technology. Overall, the results demonstrate that integrating artificial intelligence tools like Chat GPT into the learning process can lead to substantial improvements in students' academic performance and skills development.

The difficulties encountered during work can be grouped as follows: adapting to new technologies for some students required some time to adjust. In the context of utilizing chat GPT models, the quality of feedback provided to students plays a pivotal role in their learning outcomes. Ensuring that the feedback generated by the model is accurate, relevant, and clear is crucial for students to make meaningful improvements in their writing skills. Inaccuracies in feedback may arise at times, potentially due to unclear or imprecise instructions given to the model, highlighting the importance of providing detailed and precise input to the system. Moreover, interpreting the feedback generated by chat GPT models can sometimes pose challenges for students. Understanding and applying the feedback effectively require critical thinking and analytical skills. It is essential to address these challenges and provide necessary guidance to students. Ethical considerations also come into play when integrating technology into education. Fairness in evaluating students' work, ensuring data privacy and security, and promoting digital literacy are important aspects to consider when using advanced technologies like chat GPT in educational settings.

Technical issues, such as software malfunctions or limitations in the model's operation, can hinder the learning process and impact students' results. Therefore, proactive measures should be in place to monitor and address technical issues promptly to minimize disruptions and ensure a seamless learning experience for students. To ensure the successful implementation of technology in education, educators should provide comprehensive training and support to students, establish clear guidelines for using the technology, monitor progress regularly, and be ready to adapt strategies based on feedback and outcomes. By addressing these aspects thoughtfully and

proactively, educators can maximize the benefits of integrating technologies like chat GPT into the learning environment

## **Conclusion**

Thus, Chat GPT is a new phenomenon, and yet, despite the emerging novelty of this teaching tool, it is already finding more and more active use in teaching foreign languages. As the experiment has shown, the use of Chat GPT in the practice of teaching writing brings positive results. The potential of an artificial intelligence model in education requires an empirical study of all its capabilities. At the same time, we note that Chat GPT should be considered only as a modern high-tech tool for learning English, which cannot completely replace the interaction with a real teacher.

## **Scientific Ethics Declaration**

The authors declare that the scientific ethical and legal responsibility of this article published in EPESS journal belongs to the authors.

## **Acknowledgements or Notes**

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## **References**

- Ahmed, M. A. (2023). Chat GPT and the EFL classroom: supplement or substitute in Saudi Arabia's eastern region. *Information Sciences Letters*, 12(7), 2727–2734.
- Alexander, K., Savvidou, C., & Alexander, C. (2023). Who wrote this essay? Detecting AI-generated writing second language education in higher education. *Teaching English with Technology*, 23(2), 25–43.
- Baskara, FX. R., & Mukarto, FX. (2023). Exploring the implications of ChatGPT for language learning in higher education. *Indonesian Journal of English Language Teaching and Applied Linguistics*, 7(2), 343–358.
- George, A. S., & George, A. H. (2023). A review of ChatGPT AI's impact on several business sectors. *Universal International Innovation Journal*, 1(1), 9–23.
- Graham, S., & Harris, K. R. (2023). The role and development of self-regulation in the writing process. In D. H. Schunk, & B. J. Zimmerman (Eds.), *Self-regulation of learning and performance issues and educational applications* (pp. 203–228). Routledge.
- Kohnke, L., Moorhouse, B. L., & Zou, D. (2023). ChatGPT for language teaching and learning. *Relc Journal*, 54(2), 537-550.
- Kukulka-Hulme, A., Bossu, C., Charitonos, K., Coughlan, T., Ferguson, R., FitzGerald, E., ... & Whitelock, D. (2022). Innovating pedagogy 2022: exploring new forms of teaching, learning and assessment, to guide educators and policy makers. <https://eduq.info/xmlui/handle/11515/38577>
- Liu, W. (2024). The integration of ChatGPT in language education: Exploring contexts, assessing impacts, and unpacking implications. In *AI in Language Teaching, Learning, and Assessment* (pp. 1-21). IGI Global.
- Li, B., Bonk, C. J., & Kou, X. (2023). Exploring the multilingual applications of ChatGPT: Uncovering language learning affordances in YouTuber videos. *International Journal of Computer-Assisted Language Learning and Teaching (IJCALLT)*, 13(1), 1-22.
- Luckin, R., Cukurova, M., Kent, C., & Du Boulay, B. (2022). Empowering educators to be AI-ready. *Computers and Education: Artificial Intelligence*, 3, 100076.
- Marzuki, Widiati, U., Rusdin, D., Darwin, & Indrawati, I (2023). The impact of AI writing tools on the content and organization of students' writing: EFL teachers' perspective. *Cogent Education*, 10(2), 1–17.
- Perkins, M. (2023). Academic Integrity considerations of AI Large Language Models in the post-pandemic era: Chat GPT and beyond. *Journal of University Teaching & Learning Practice*, 20(2), 07.
- Xiao, Y., & Zhi, Y. (2023). An exploratory study of EFL learners' use of ChatGPT for language learning tasks: Experience and perceptions. *Languages*, 8(3), 212.



Yan, D. (2023). Impact of ChatGPT on learners in a L2 writing practicum: An exploratory investigation. *Education and Information Technologies*, 28(11), 13943-13967.

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