

The Effect of AI-Based Chat GPT website on developing Secondary school students' EFL Writing performance

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Abstract:

Teaching English as a Foreign Language (EFL) writing skills presents unique challenges, from developing students' language proficiency to providing personalized feedback and support. This research explores how ChatGPT can help secondary school students in their EFL writing tasks. It delves into ChatGPT's characteristics, highlighting its ability to generate text and provide language assistance. The research investigates the benefits of integrating ChatGPT into EFL writing tasks, such as enhancing vocabulary and grammar proficiency and fostering creativity. However, it also examines potential drawbacks, like over-reliance leading to reduced critical thinking and authenticity issues in students' work. By analyzing these aspects, the research aims to provide insights into effectively incorporating ChatGPT in EFL education while mitigating its limitations to promote balanced and beneficial learning outcomes.

Keywords: Chat GPT, AI, EFL writing

تأثير موقع الدردشة القائم علي الذكاء الاصطناعي Chat GPT في تطوير الاداء الكتابي للغة
الانجليزية كلغة ثانية لدي طلاب المرحلة الثانوية

اسراء مصطفى فضل عبد المجيد
معلمة لغة انجليزية

الملخص:

يمثل تدريس مهارات الكتابة باللغة الانجليزية كلغة اجنبية مجموعة فريدة من التحديات بدأ من تطوير الكفاءة اللغوية للطلاب وحتى تقديم الملاحظات والدعم الشخصي. يستكشف هذا البحث كيف يمكن ل Chat GPT مساعدة طلاب المدارس الثانوية في مهام الكتابة باللغة الانجليزية كلغة اجنبية. وهو يتعمق في خصائص Chat GPT ويسلط الضوء علي قدرته علي انشاء نص وتقديم المساعدة اللغوية. ويبحث في فوائد دمج Chat GPT في مهام الكتابة باللغة الانجليزية كلغة اجنبية مثل تعزيز كفاءة المفردات والقواعد وتعزيز الابداع في الكتابة. ومع ذلك فانه يدرس ايضا العيوب المحتملة مثل الاعتماد المفرط الذي يؤدي الي تقليل التفكير النقدي وقضايا الاصاله في عمل الطلاب . ومن خلال تحليل هذه الجوانب يهدف البحث الي تقديم رؤي حول الدمج الفعال ل Chat GPT في تعليم اللغة الانجليزية كلغة اجنبية وتخفيف القيود وتعزيز نواتج التعلم المفيدة.
الكلمات المفتاحية: دردشة GPT الذكاء الاصطناعي - الكتابة باللغة الانجليزية

1. Introduction

English as a second or foreign language (ESL/EFL) is one of the most widely taught languages in the world. Nevertheless, with the rapid advancement of technology, Artificial Intelligence (AI) has begun to play an increasingly important role in language learning. In recent years, the emergence of artificial intelligence (AI) technologies has presented promising opportunities to enhance ESL instruction. The emergence of AI is rapidly changing the landscape of education, and online teaching is no exception. Both teachers and their students can benefit from using AI to become better teachers and more informed learners. AI provides fantastic opportunities for the English classroom such as more personalized learning journeys, fast content creation, and genius ways of supporting teachers.

One of the primary advantages of using AI in language learning is its ability to adapt to the individual needs of each student. AI offers real-time feedback on pronunciation, grammar, and vocabulary usage. With AI-powered language apps and tools, learners can confidently practice speaking and writing skills, knowing they will receive instant corrections and suggestions for improvement. Language learners often hesitate to speak in front of others due to the fear of making mistakes. AI also eliminates this fear by providing a non-judgmental learning environment.

Among these technologies, Generative Pre-trained Transformers (GPT) have garnered significant attention for their potential to revolutionize language learning experiences. GPT, a

deep learning model developed by OpenAI, has demonstrated remarkable natural language understanding and generation capabilities. Trained on vast corpora of text data, GPT excels in generating coherent and contextually relevant text, making it a powerful tool for various language-related tasks. Its ability to understand and generate human-like text has sparked interest in its application within ESL contexts, where language proficiency and communication skills are central objectives.

2. Context of the problem

In recent years, Egyptian researchers have become increasingly interested in EFL writing. Attempts are often made to change the teaching and learning of language in the Egyptian context, but these are always monitored, especially at the classroom level. (Darwish, 2016)

EFL writing is very important for secondary school students as it prepares them for academic writing which is the medium of written communication in most universities in Egypt. Proficient writing skills enable secondary school students to effectively communicate with people from diverse linguistic and cultural backgrounds. Strong EFL writing skills are essential for secondary school students to access and comprehend academic resources and materials which are available primarily in English. (Darwish, 2016).

Ahmed (2010) studied some challenges facing students and he stated that The Egyptian educational system whether at the pre-university level or the university level encourages a competitive learning environment. This relates to the culture of competitiveness

in which students race to get higher scores than each other. Students are competitive because of some socio-cultural factors affecting them such as teachers' encouragement of competitive learning inside the classroom, parents' encouragement of this competitive learning at home and the society's encouragement of learning competitively at large. The learning of essay writing in such a competitive learning environment justifies the lack of peer review because students are very competitive and racing for better marks in their written essays. They think that sharing their essays might lead to their ideas being stolen and losing their unique ideas.

Mohammed, et al (2022) worked as teachers of English language at Tema AL-Azhar Secondary Institute for Boys, they noticed that most of the students had some difficulties in expressing what they wanted to write simply when they were asked to write simple paragraphs. They couldn't write either a simple coherent sentence or a paragraph.

In Egypt, English is taught in a typical foreign language situation where it is taught in formal school settings. Egyptian EFL classrooms are often crowded with students ranging in number from 40 to 70. These classes are mostly teacher-dominated and a learner-centered approach required by communicative classroom activities is not easy to implement. Moreover, most secondary school assignments require little writing; it is usually limited to a paragraph or two. The primary purpose of most secondary school writing tasks is content; students rarely write to entertain, inform or convince. (Mohammed.E, Mohammed.T&Mohammed.S, 2019).

The Effect of AI-Based Chat GPT website on developing Secondary school students' EFL Writing performance
Esraa Mostafa Fadl Abdel-Mageed

In Egypt, work in an exam-driven system. They aim to finish the syllabus in a specified time. Limitations of time make them specify a few class period for writing exercises. They know nothing about what specifically to teach, what aspect to evaluate in students' performance, and care only about the final product which students do in their written work notebooks. Furthermore, the evaluation method they use needs reconsideration, as the teacher is the only source of feedback, mostly through the red marks which students do not often read. As cited in (Mohammed. E, Mohammed.T&Mohammed.S, 2019).

The AI-based Chat GPT was chosen for this research because of its availability and easy accessibility. There is a free website of Chat GPT which students can easily access and freely use for several times of writing corrections.

Taking the research aims into account, it is an attempt to address the following main question:

How does the AI-based Chat GPT website affect developing Secondary school students' EFL Writing performance?

This main question can be subdivided into the following sub-questions:

1. What is Chat GPT?
2. What are the advantages of incorporating it in EFL writing tasks?
3. Are there any negatives of relying on Chat GPT in writing tasks?

One of the aims of EFL writing tasks is to help students write different types of texts, varied in length, on familiar themes and topics, take notes through speech or from a text, and translate from Arabic to English and vice-versa. (Darwish, 2016).

Darwish (2016) conducted a study to investigate challenges facing secondary school students in writing classes and he mentioned that teachers' use of time for marking, planning, and assessment is a problematic issue in large classes. Furthermore, teachers find motivating and involving students in these classes difficult. Thus the purpose of this research is to check Chat GPT as a writing assistant helping students in their writing tasks.

3. Method

This research uses a descriptive qualitative method which emphasizes more on observing phenomena and examining the substance of the meaning of these phenomena. In this research, the researcher describes the use of ChatGPT in the teaching and learning process. Besides, the research also uses simulation.

Research Question1: Chat GPT

In November 2022, a private company called Open AI launched its application Chat GPT (GPT meaning Generative Pre-Trained Transformer). As Chat GPT has been unveiled recently, the number of studies on its use in language learning remains relatively limited. Chat GPT is an AI-powered chatbot developed by Open AI and has sparked a huge interest for its

exceptional quality of response compared to other contemporary chatbots. (Sun Young, JA. Shim&JO. Shim, 2023). They also concluded some uses of Chat GPT like text generation, machine translation, content correction, problem-solving, summarization, grammar correction, and answering questions. Baskara (2023) defined Chat GPT as an extensive language model trained by Open AI that can generate human-like text based on the input it receives.

Chat GPT can engage in dialogues with users naturally and responsively. Chat GPT can produce text responses that are similar to human language, answer follow-up questions, admit its mistakes, and reject inappropriate requests. Furthermore, it can generate texts in various forms such as essays, jokes, and poetry with continuous input from users and it can improve its performance in similar tasks. (Hong, 2023)

Fitria (2023) stated that chatbot technology can be an interactive learning media solution as users can practice both spoken and written conversations with the existing error correction and self-evaluation features. The word chatbot is essentially described as a computer program that converses with a human being, usually through the internet. (Oxford Dictionary Online, 2020).

Sun Young, JA Shim, and JO Shim (2023) detailed GPT models as follows:

The first model GPT-1 was introduced in 2018 with a new approach to the learning process of unsupervised pre-training followed by supervised fine-tuning. The new process enabled the model to overcome the chronic limitation of deep learning

models, which is the lack of pre-tagged data. It employed a 117M parameter model with a variation of the Transformer architecture, trained on Common Crawl and Books Corpus, achieving improved performance in natural language inference, question answering, semantic similarity, and classification tasks.

In 2019, GPT-2 was released, building upon the foundation laid by GPT-1. GPT-2 utilized a larger model and more data, which was collected from millions of web pages called Web Text. This model used Byte Pair Encoding for input representation and had 1.5B parameters. GPT-2 demonstrated enhanced zero-shot performance in tasks such as reading comprehension, summarization, translation, and question answering.

GPT-3, introduced in 2020, represented a significant advancement by assimilating few-shot learning. The model could be fine-tuned for specific tasks with just a few examples without gradient updates. With 175B parameters, GPT3 showed exceptional performance in tasks such as code and sentence auto-completion, grammar assistance, and game narrative generation.

GPT-3.5 was released in 2022. This model was improved over GPT3 by incorporating human feedback and reinforcement learning. The learning data included data collected from the OpenAI API, and human evaluations were used to construct the reward model. The most notable aspect of GPT-3.5 is that it

generates text based on the user's instruction. This means that the desired answer can be gradually derived such as users requesting the response to be more detailed or succinct. The model produces more sophisticated answers as the conversation progresses, taking into account the entire context of the conversation. Fitria (2023) stated that this platform is considered to be able to replace Google because it can answer any problem.

We can log in easily via Google or Microsoft account. We can use a chat box service on the Chat GPT site freely. We can ask several questions from various aspects the answer will appear quickly in a split second.

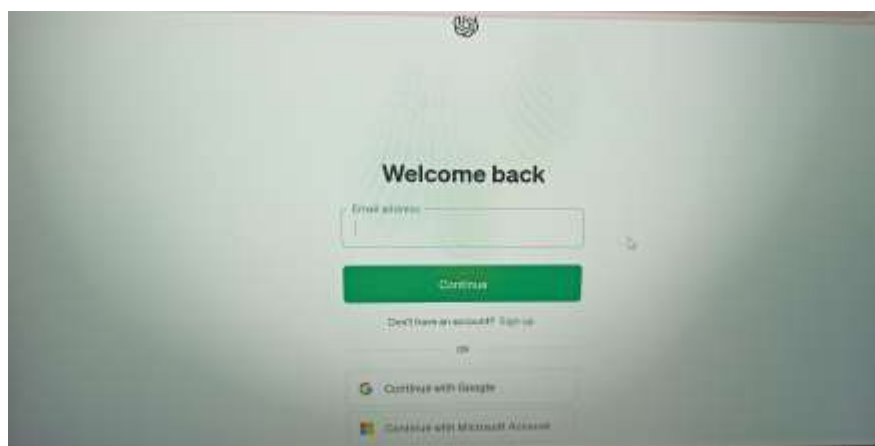


Figure 1: Chat GPT log-in

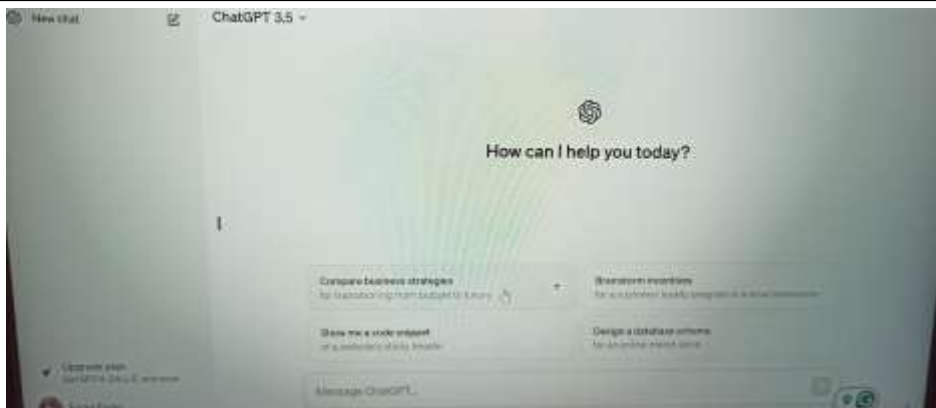


Figure 2: The chat box service in Chat GPT

The researcher as a user of Chat GPT asked the chatbot to give a lesson plan for the present simple tense and the chatbot quickly replied with a detailed one giving the chance to adjust the time and activities that suit learners' level and needs. Figures 3 to 7 show the reply of the chatbot.

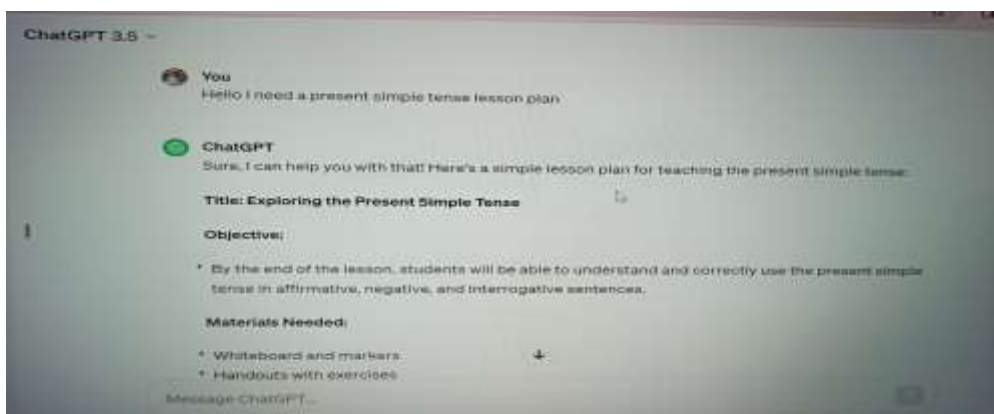


Figure 3: asking the chatbot

The Effect of AI-Based Chat GPT website on developing Secondary school students' EFL Writing performance

Esraa Mostafa Fadl Abdel-Mageed

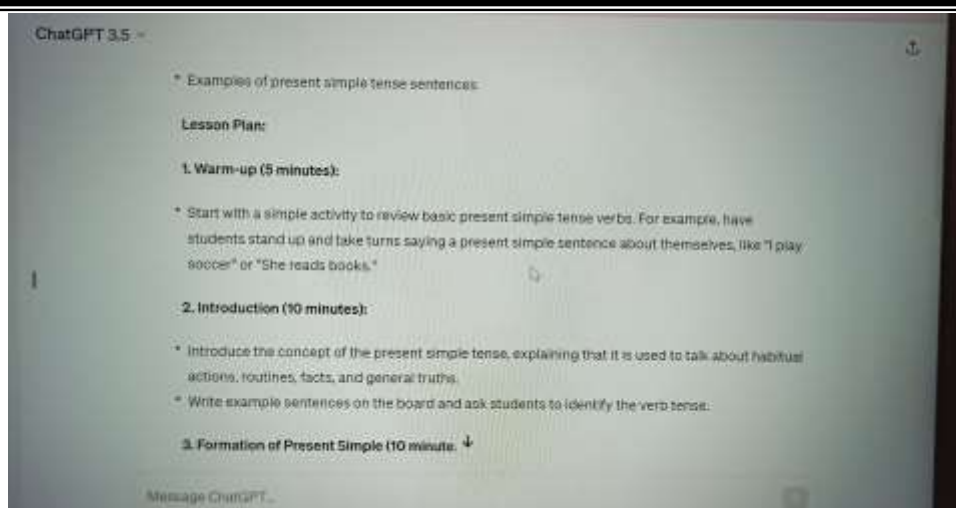


Figure 4

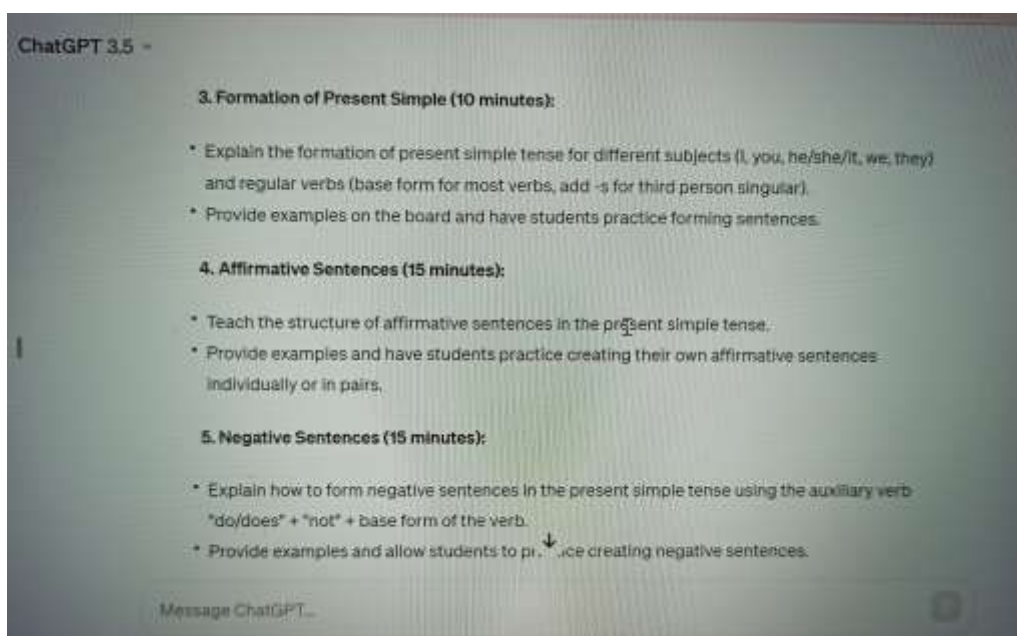


Figure 5

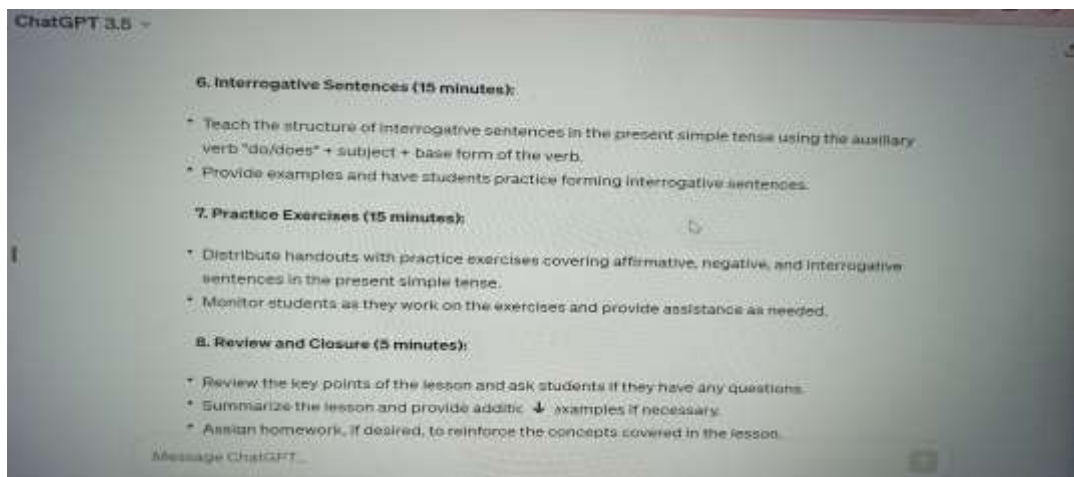


Figure 6

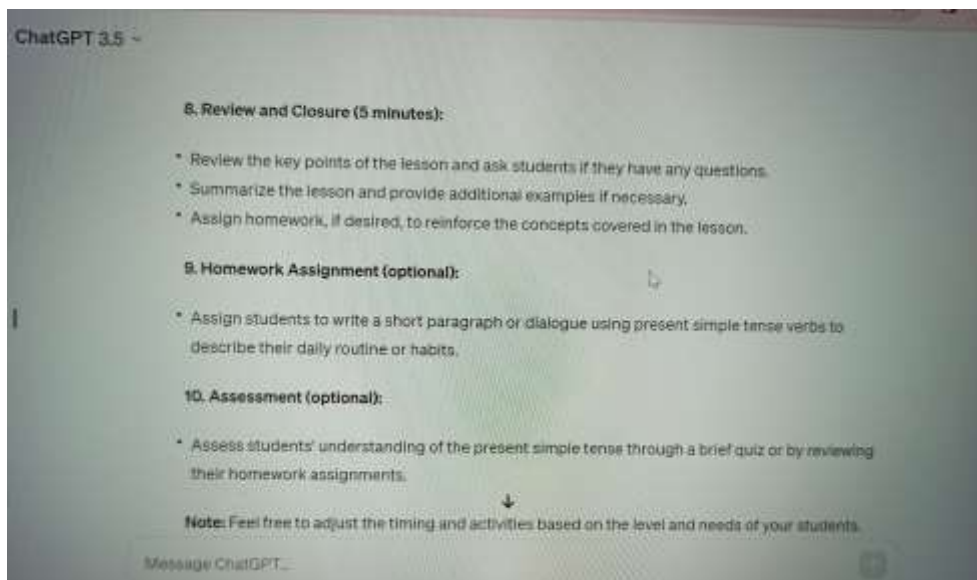


Figure 7

ChatGPT is a chatbot based on GPT-3.5, a natural language model that uses deep learning processes. Natural here means the text style produced by OpenAI's chat robot, which is similar to a natural human writing style, not rigid like a machine or bot. (Fitria, 2023). The development of Artificial Intelligence (AI) in the field of education helps process daily activities including teaching and learning. Good English skills will certainly be a competitive capital, both in the fields of education and work. Chatbot technology is a technology that can be used as a solution to problems in the educational sphere. This artificial intelligence (AI) based conversation platform has attracted the admiration of many netizens because of its ability to answer questions automatically, quickly, and in detail. Fitria (2023) mentioned that after just one month of Chat GPT launching, the number of users has reached more than one million. ChatGPT is capable of producing text in various formats—be it formal, informal, or creative writing. Its ability to write is human-like in terms of content, coherence, and style of language. This will lead us to the next section of this research and move to question 2 which we will discuss the benefits of Chat GPT in writing instruction.

Research Question 2: advantages of Chat GPT in writing tasks

EFL writing skills present educators with unique challenges. These challenges include developing students' language proficiency, providing personalized feedback and support, and engaging and motivating learners. (Baskara, 2023)

This can be time-consuming and labour-intensive, especially in larger classes or with diverse learners. Developing language

proficiency involves skills including vocabulary, grammar, syntax, and the ability to express ideas clearly and accurately. Baskara (2023) illustrated that to support students in developing their language proficiency, EFL writing instruction should include activities and exercises focusing on specific language skills such as vocabulary building and grammar practice and to support students struggling with certain aspects of EFL writing.

Fitria (2023) experimented with the chatbot and asked it to give an English essay about (my family) and the chatbot quickly replied and gave the essay. The 1st paragraph tells about the family members which consists of parents, younger brother, and herself/himself. The 2nd paragraph tells about the parents (mother and father), the 3rd paragraph tells about the younger brother, and the 4th paragraph tells about the writer's pride in her/his family. In this paragraph, ChatGPT also considers the writing order such as using main and explanatory sentences, and the last paragraphs ended with a conclusion. It also uses two different voices such as active and passive voice. Besides, it considers tenses use, such as using the simpler present tense.

The researcher checked the chatbot's ability to generate texts and asked it to generate a text about the pyramids of Giza and asked it to highlight new words for the students to learn and the reply was amazing as shown in figures 8 and 9. Furthermore, the chatbot gives the chance to practice the highlighted words in sentences.

The Effect of AI-Based Chat GPT website on developing Secondary school students' EFL Writing performance

Esraa Mostafa Fadl Abdel-Mageed

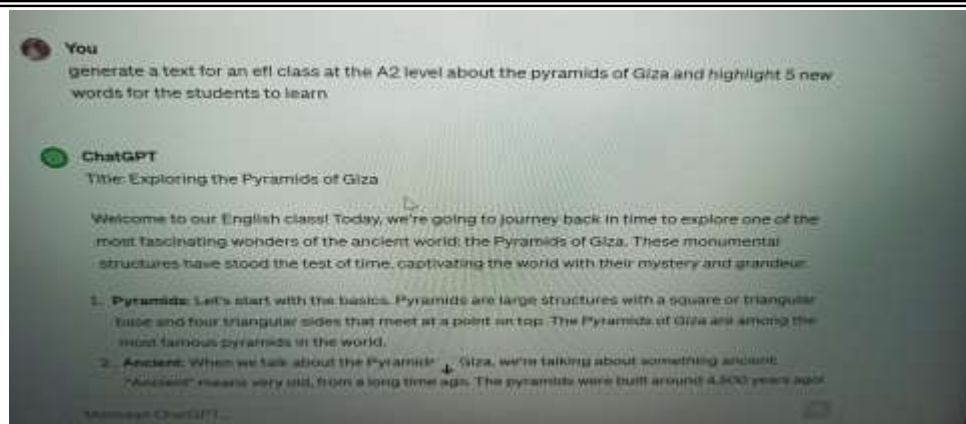


Figure 8

The chatbot generated the text, gave the appropriate title, and highlighted the words.

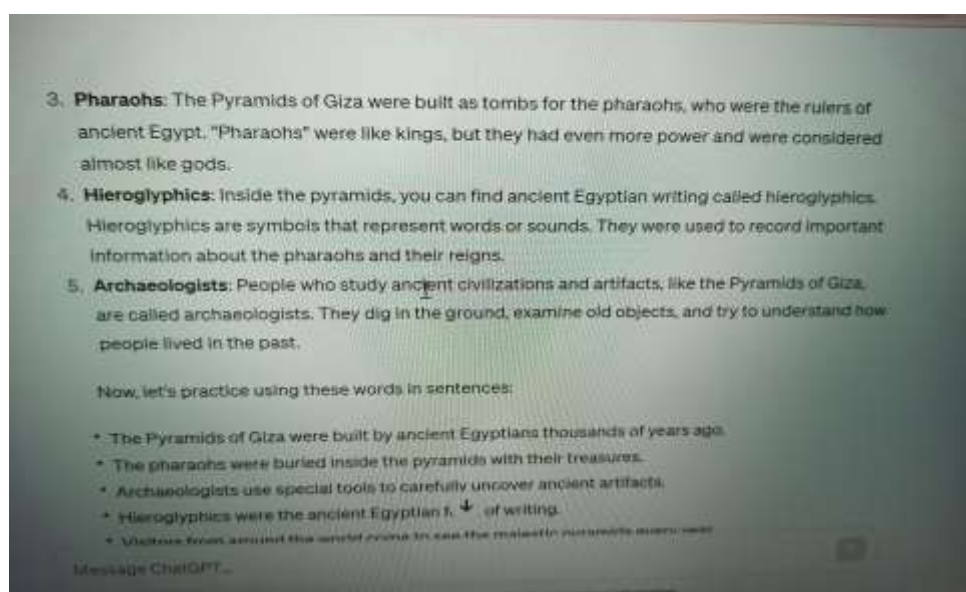


Figure 9

After the chatbot highlighted the words it practiced using these words in sentences, the figure above indicates that students can receive personal tutoring from Chat GPT.

The researcher also wanted to examine error recognition ability and asked the chatbot to find the mistakes in a text and correct them and the reply was as follows in figure 10. It could easily find grammar and spelling mistakes.

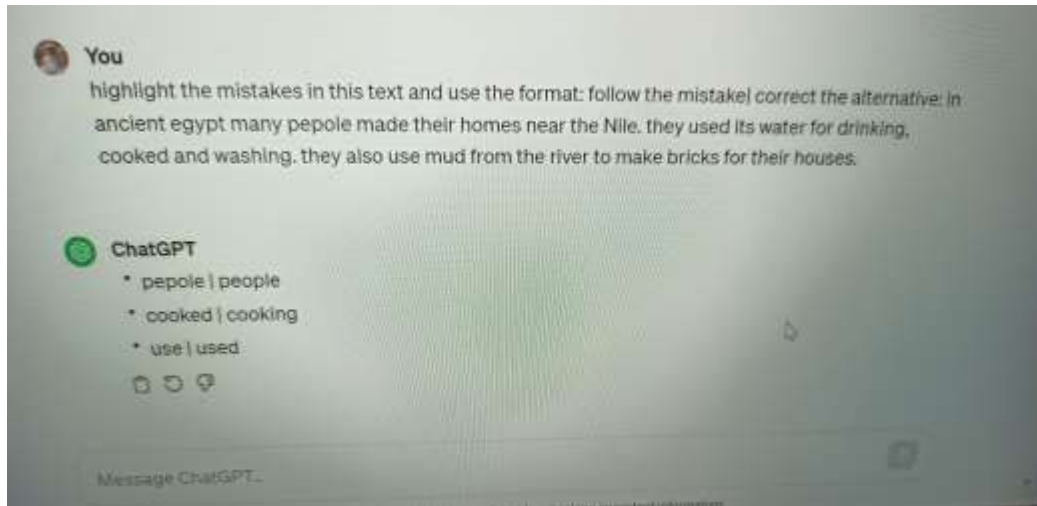


Figure 10: error recognition

Chat GPT can also generate texts or stories from a set of vocabulary, a point of creative writing that is also found in the chatbot. Figures 11 and 12 show that.

The Effect of AI-Based Chat GPT website on developing Secondary school students' EFL Writing performance

Esraa Mostafa Fadl Abdel-Mageed

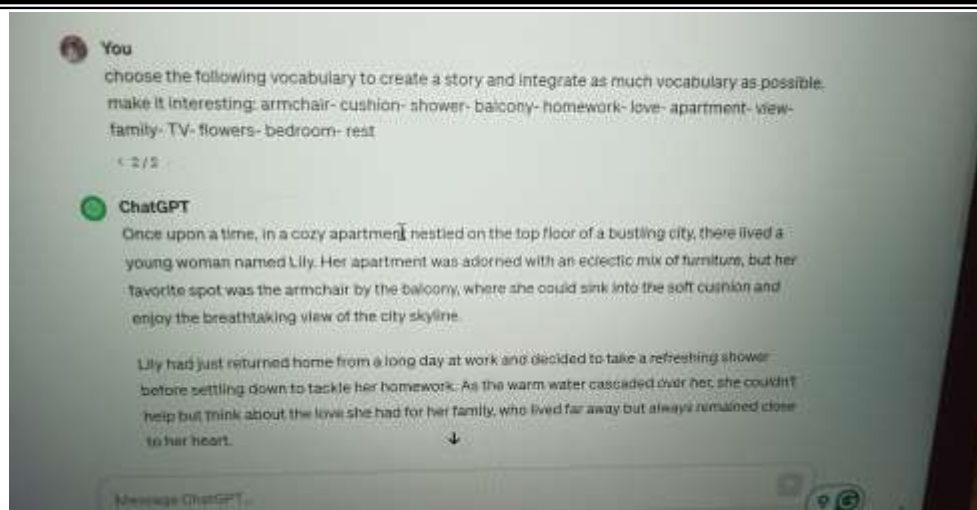


Figure 11

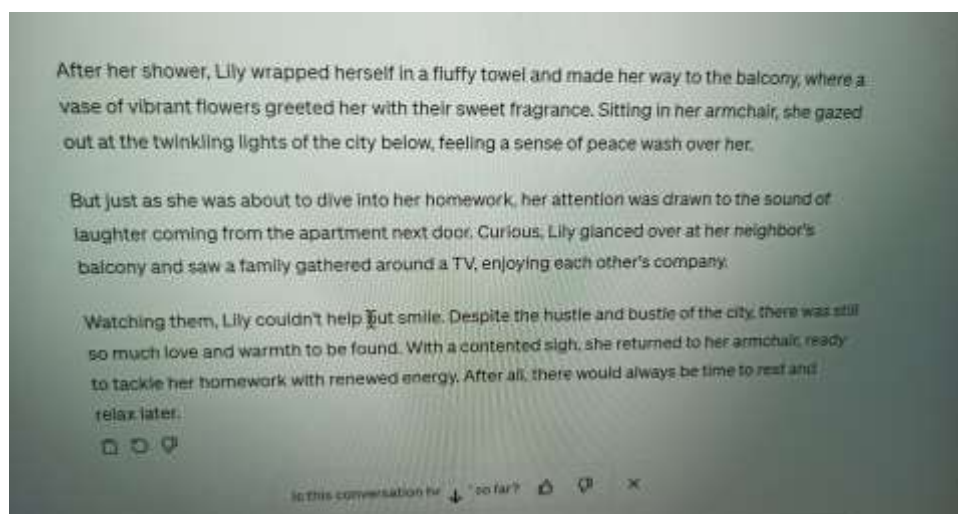


Figure 12

Koraishi (2023) sees that the randomness of vocabulary knowledge among EFL learners, though it might be on-level, often results in distinct gaps in their linguistic proficiency, necessitating an

individualized focus on specific sets of target vocabulary or even sets that are more relevant to them in terms of profession or interest. For the longest time, addressing this issue required teachers to invest considerable time and effort in identifying appropriate strategies to incorporate these target words into the instructional materials, or even create new texts from scratch. However, with ChatGPT, EFL teachers can now streamline this process significantly as well. By designing the right prompt and providing the necessary parameters i.e. vocabulary set, educators can leverage the capabilities of AI and integrate numerous target vocabulary words into generated texts, even when dealing with extensive lists containing tens or hundreds of words. This innovative approach not only reduces the time and effort previously associated with material customization but also allows teachers to efficiently cater to the diverse vocabulary needs of their students, ultimately enhancing the overall learning experience.

Sun Young, JA Shim, and JO Shim (2023) in their study evaluated the suitability of Chat GPT as a second language learning tool. Chat GPT offered a detailed learning goal and objectives for the business English writing course and it illustrated what kinds of capabilities learners would obtain after learning. Furthermore, GPT formulated a comprehensive curriculum that enables learners to engage in practical writing experiences. Chat GPT also adjusted the schedule and amount of learning based on the number of days. It divided the lesson into four sections: introduction, presentation, activities, and conclusion. It also outlined what would be covered in each section.

Koraishi (2023) examined the chatbot in the context of the independent writing task in the IELTS, underscoring its potential to streamline the assessment process and facilitate a more efficient and accurate evaluation of students' work in alignment with the demands of international proficiency exams. The feedback generated aligns with the IELTS rubric in key aspects such as organization and task achievement. It provided an approximate score band in addition to offering insights and a rationale behind the assigned score. Furthermore, the example highlights the nuanced understanding that an accurate score band estimation cannot be solely based on Task 2, as the IELTS writing section combines the scores of both Task 1 and Task 2. This level of detail showcases the potential of ChatGPT in offering meaningful, context-specific feedback by established assessment criteria. To generate some sort of feedback report about the text to the learner, a teacher can collaborate with ChatGPT by enquiring further to reveal more details about the areas of interest as well as providing potential fixes for each.

Fajlik (2023) compared Grammarly, Pro-Writing Aid and Chat GPT. Grammarly, Pro-Writing Aid and Chat GPT all offer opportunities for learners to have their writing checked for grammatical mistakes and improve their writing.

Grammarly, Pro-Writing Aid and Chat GPT can check errors in grammar, punctuation and spelling. Grammarly and Pro-Writing Aid give explanations and advice, which are short, but helpful, with Pro-Writing Aid being less direct and clear than Grammarly and Chat GPT.

Fajlik (2023) also indicates that the visual interfaces of Grammarly and Chat GPT are straightforward and intuitive. Chat GPT provides far more detailed and clearer explanations than Grammarly or Pro-Writing Aid. The results of a short questionnaire showed that most students found grammar checkers helpful and easy to use. They allow them to correct their own mistakes before submission. This allows them to engage in a deeper learning experience and teachers save time by not having to correct basic grammar and spelling mistakes.

Baskara (2023) showed that one of the potential benefits of Chat GPT in EFL writing instruction is its ability to engage and motivate students through natural language capabilities. It can provide a more authentic and realistic writing experience. When students become disinterested or frustrated with their writing practice this can hinder their projects.

The feedback given by Chat GPT might include explaining the meaning and usage of a specific vocabulary, providing examples of correct grammar and syntax and effectively offering guidance on structuring sentences and paragraphs.

Hong (2023) stated that Chat GPT can generate topics for discussion and creative writing prompts for students to write creatively. It can pinpoint language and organizational issues in students' writing, offer writing ideas and suggest corrections. It can also explain the use of vocabulary in great detail and offer examples. Best of all the feedback is instant, unlike teachers' feedback.

Research Question 3: negatives of relying on Chat GPT in writing tasks

Ghafar (2023) mentioned some reservations about Chat GPT saying that some educational institutions have declared prohibitions on the utilization of this recently developed conversational AI system. Some educators see Chat GPT as a potential catalyst for negative consequences, since it may impede students' progress in cultivating essential skills such as analytical thinking and written proficiency.

He continued to discuss the Google search engine, for example, impedes cognitive functioning and diminishes intellectual capacity and smartphones have hindered students' ability to construct coherent and comprehensive sentences. He added, that the faculty members at his institute universally express their disapproval of students' relying on Chat GPT for their writing tasks.

Hong (2023) declared that there is extensive media coverage of cases of cheating and misconduct following the worries over the use and misuse of Chat GPT, educational institutes one after another have announced bans on the use of the months-old chatbot. School administrators see Chat GPT posing threats to students' critical thinking and writing and they also agree that smartphones crippled students' ability to write a complete sentence. He continued to explain that texts written by a large-language model chatbot are not hard to spot and for teachers' inspection, the content of AI writing is typically shallow and at times comes with false facts and made-up references.

Baskara (2023) discussed AI and NLP technologies, including ChatGPT, can be subject to bias, affecting the quality and accuracy of the text they generate. This can be a concern in language education, impacting students' learning and development. To address this concern, it is essential to carefully consider the potential sources of bias in ChatGPT and develop strategies to mitigate or eliminate these biases. The use of ChatGPT in EFL writing instruction raises several ethical considerations, such as the use of personal data and the potential impact on students' privacy and rights. These ethical considerations must be carefully considered, and appropriate measures must be put in place to ensure that the use of ChatGPT is ethical and responsible.

One of the challenges of using ChatGPT in EFL writing instruction is identifying the types of writing tasks that are well-suited to this technology. As a large language model trained by OpenAI, ChatGPT can generate human-like text based on the input it receives. However, not all writing tasks are equally well-suited to ChatGPT. For example, writing tasks that require a high level of creativity or originality may be complex for ChatGPT to support. This is because ChatGPT cannot generate completely original or creative text and is limited to generating text based on the input it receives. On the other hand, writing tasks that involve more structured and formulaic language may be more suitable for ChatGPT. This might include writing tasks that require students to fill in the gaps in a sentence or paragraph or tasks that involve writing responses to prompts or questions that are provided in advance.

The users of AI and NLP technologies, including ChatGPT, can also introduce bias into the generated text. For example, if the technology users are not diverse or representative of the population, this can introduce bias into the generated text. This can happen if the technology users are not representative of different genders, ages, or other demographic factors. In addition, if the technology users are not representative of different dialects or regional variations in language, this can also introduce bias into the generated text. This can be a particular concern in language education, as it can impact students' learning and development. To address this concern, it is essential to carefully consider the diversity and representativeness of the users of AI and NLP technologies, including ChatGPT. Ensuring that the technology users are diverse and representative of the population makes it possible to reduce the potential for bias in the generated text. This can help to ensure that the use of ChatGPT in language education is effective and fair. (Baskara, 2023)

4. Discussion of findings

As demonstrated throughout the research ChatGPT, a state-of-the-art language model, can serve as a tool for scaffolding writing tasks, providing feedback, and fostering language production in EFL contexts. By examining the ability of the chatbot as a writing assistant we found the following:

- **Enhanced language production:** ChatGPT facilitates continuous language production by providing a responsive environment for students to engage in written communication. Through interactive dialogue, students

have opportunities to practice generating sentences, expressing ideas, and refining language structures.

- Individualized feedback: Chat GPT offers personalized feedback tailored to students' writing needs. Analyzing students' input and generating contextually relevant responses, helps identify language errors, suggest corrections, and offer explanations, thus promoting self-correction and language awareness.
- Vocabulary enrichment and language expression: ChatGPT contributes to the expansion of students' lexical resources and facilitates language expression in writing. By exposing learners to diverse vocabulary through interactive dialogue, ChatGPT encourages the incorporation of varied lexical items into students' compositions. This exposure not only enhances the richness and sophistication of their writing but also promotes lexical precision and nuance, leading to more nuanced and expressive language use.
- Organizational structure and cohesive writing: Interaction with ChatGPT supports students in developing organizational skills and creating cohesive written texts. Through dialogue-based exchanges, students are prompted to structure their ideas coherently, organize their thoughts logically, and establish smooth transitions between paragraphs and sections. This scaffolding fosters the development of clear, well-structured compositions,

enhancing the overall coherence and readability of students' writing.

- Limitations and challenges: Despite its potential benefits, the use of ChatGPT in EFL writing instruction poses challenges such as the risk of overreliance on AI feedback, potential biases in generated responses, and the need for human oversight to ensure accurate language modelling and pedagogical relevance.

Conclusion and Recommendations

The findings of this paper highlighted several important directions for future research and practice in the area of EFL writing instruction and the use of Chat GPT. Further research needs to explore the potential benefits and challenges of using Chat GPT in EFL writing and to develop strategies to address these challenges and maximize the benefits of the technology. Further research should focus on exploring the ethical implications of using Chat GPT in EFL writing.

We should provide clear instructions and guidance for students on how to use Chat GPT for writing practice. Choosing tasks that cannot be easily assisted by AI chatbots such as writing daily journal entries and summarizing the content of a lecture can help teachers if they are not sure about their student's level of writing and if they are afraid of completely relying on Chat GPT by their students.

Therefore, it can be argued that the education field needs a game-changer more than any other professional arena. For example, before COVID-19, most educators never imagined

needing online classes and were less likely to prefer them. Not long before people started discussing the advantages and benefits of online teaching and blended learning. Chat GPT is a free and more efficient alternative to human tutors.

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