

Reviewing the Usage of ChatGPT on L2 students' English Academic Writing Learning

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Abstract. This paper reviews previous literature to explore the usage of ChatGPT in helping L2 students with English academic writing. There are several types of views on the usage of ChatGPT in assisting writing. Generally, researchers regard ChatGPT as beneficial for it can maximize the efficiency and accuracy of writing, which can facilitate students' learning. There are also previous empirical studies showing that ChatGPT is a useful tool in English academic learning, especially in the writing area. This paper concludes that 1) Proofreading is one of the most crucial functions to support English writing. It can help with spelling, grammar, word precision, and sentence cohesion. 2) Brainstorming is another application of ChatGPT which is useful for coming up with ideas for writing topics, suggesting an outline, and searching appropriate literature evidence. 3) Translating is one of the most widely used functions of ChatGPT, because it can automatically translate and paraphrase with a high standard of accuracy. The significance of this paper is that it can be adopted in the students' independent writing process, and in the classroom to help students better complete the writing task under teachers' guidance.

Keywords: ChatGPT, proofreading, brainstorming, translating, EFL students, English academic writing

1. Introduction

With the AI (Artificial intelligence) boom, ChatGPT (Chat Generative Pre-trained Transformer) is a prevailing chatbot that was generated by the company of Open AI. A recent article has revealed that ChatGPT can enhance scientific writing performance by not only correcting potential grammar and lexical errors, but also improving coherence and cohesion [1]. Although previous studies have shown its help to English academic writing, there is no systematic review of how ChatGPT helps students write, especially for EFL (English as a foreign language) learners, and discuss ways for teachers to better guide students in writing. The main contribution of this work is to supplement the above deficiencies. This review covers three main usages of ChatGPT in helping English academic writing, including proofreading, brainstorming, and translating. Also, this study gives suggestions to teachers and students for improving students' writing.

2. Three Main Usages of ChatGPT

2.1. Proofreading

The first usage of ChatGPT to help EFL students' academic writing is proofreading. After observing students' behaviors with using ChatGPT in the writing classroom, Yan states that ChatGPT could maximize the efficiency in composing grammatically accurate writing [2]. Human feedback has flaws: on the one hand, teachers' grammatical feedback is limited and inefficient; on the other hand, these kinds of feedback comments might not be accurate because of teachers' subjectivity in understanding the context. Most of the EFL teachers are non-native speakers as well, which might result in some grammatical errors in their writing or feedback. With its large database support, ChatGPT can provide learners with immediate feedback with indicating the location and type of mistakes. Lela refers that language acquisition occurs when learners are exposed to language input [3]. Su et al's research indicates that ChatGPT is helpful in correcting learners' grammatical errors such as modal verbs, tense and typos. Below is an example from Su [4]:

*Example 1: the proofreading of **modal verbs***

*Original Sentence: Longer school **time might** lead to fatigue.*

*Revised Sentence: Longer school **hours may** lead to fatigue.*

*Example 2: the proofreading of **tense***

*Original Sentence: If we **have** longer school days.*

*Revised Sentence: If we **were to have** longer school days.*

*Example 3: the proofreading of **typos***

*Original Sentence: We should **shorter** school days.*

*Revised Sentence: We should **shorten** school days.*

Except for grammatical accuracy, EFL learners often wish to create a passage with precise vocabulary, cohesive sentences, and proper tones. These are also realistic functions of proofreading in ChatGPT. Su et al argued that when they gave ChatGPT full text, it modified its lexical and syntactic level that ensured accurate wording, enhanced the conciseness of the text, and improved the academic tone [4]. According to Ningrum, with the capability to do contextual conversations and generate text, ChatGPT can hold contextually aware dialogues and preserve coherence and understanding over different natural languages, while also providing engaging and informative content [5]. Below are examples developed from ChatGPT:

*Example 4: the proofreading of the **sentence's cohesion***

Original Sentence: The team worked on the project individually. They presented their findings at the meeting.

Revision: The team individually worked on the project and later presented their collective findings at the meeting.

*In this case, by using the connecting phrase "**and later**," the revised sentence flows more smoothly, clarifying the relationship between the two actions.*

*Example 5: the proofreading of the **word's precision***

Original Sentence: The movie was good.

Revision: The movie was captivating.

*In this case, by replacing "**good**" with "**captivating**" ChatGPT makes the expression more specific, conveying the film's allure more accurately.*

According to Barrot, ChatGPT is a useful tool for improving students' writing skills in a variety of language learning courses [6]. Although there were few strong experiments for proving this argument, previous researchers still think positively that using ChatGPT as a tool is a good idea for studying the L2 language [2][3][7].

However, there are still some dissenting voices. Using ChatGPT to form essays can be tricky and risky. Su et al state that the potential bias in the training data might cause ChatGPT to generate some improper content and need to be refined by user's feedback, which means the sentences generated by ChatGPT have the possibility to be faulty [4]. Another significant drawback is that learners may become overly dependent on ChatGPT's suggestions and corrections; Also, it is a path leading to a passive approach to writing and a reduction of problem-solving skills [1].

2.2. Brainstorming

Admittedly, proofreading is regarded to be the most important and effectual way of helping English writing, but its necessity of ChatGPT is recognized in the field of writing preparation, that is, the inspiration of writing directions, proposing an outline, and generation of specific evidence.

According to Ningrum, with the content creation ability, ChatGPT can help learners with writing tasks through providing creative prompts, suggesting improvements, and generating ideas [5]. This thought was reconfirmed in the research of Utami et al. They tested 58 Indonesian boys and girls from three senior high schools, collecting their responses after using AI-based learning tools for English writing. Participants gave high remarks on it in helping their behaviors in their L2 academic writing. Especially when learners want to figure out the topics, ChatGPT can help them deal with the difficulties they've met [7]. Below is an excerpt from one of the responses:

“We utilized the function of idea exploration feature. We got more specific options for the ideas. Then, we deemed the topic based on the agreement of the group members.”

Besides giving instructions on choosing the topic, it can also propose an outline. According to Huang and Tan, when the users input the topic, ChatGPT can generate subtopics [1]. Below is an example from their research:

Inputting the topic: “The role of epigenetics in cancer development and treatment”.

Generating subtopics: “Epigenetic modifications in cancer cells”

Su et al argued that ChatGPT can also review the informal outline provided by the user and give feedback to improve this outline draft. [4]. Although most of this kind of informal outline is too brief, users can utilize ChatGPT as a tool to elaborate more specific details, which leads to the other functions—generating specific evidence. Here is an example from Su et al:

The Question asked to ChatGPT: I don't know how to provide specific evidence and reasoning to strengthen the subclaim: "longer school hours lead to students being "very tired"?"

One piece of evidence given by ChatGPT: Look for research studies or articles that explore the impact of longer school hours on students' well-being. You could cite specific studies that show how extended school hours can negatively affect students' physical and mental health, including increased stress, fatigue, and sleep deprivation.

Based on the above three examples in brainstorming, this function of brainstorming can be beneficial for L2 learners, but it still has its drawbacks. According to Su et al, the quality of the outline's feedback fluctuates and depends mainly on the evaluative rubrics. ChatGPT may fail to give the user missing details if the user only focuses on the quality of evidence and claims [4]. What's more, ChatGPT cheats. Ningrum argues that ChatGPT may produce the wrong content or make suggestions that do not follow the requirements [5]. This can result in an incorrect input for learners in both the language aspect and the fact aspect. Although this limitation has some similarities with inaccurate proofreading, these two should not be combined. One of the most significant reasons is that when using ChatGPT for proofreading, it does not need to bring any evidence or facts, leading to the inability to cheat. Except for the academic level, some researchers also criticized the moral level of using ChatGPT for brainstorming. Huang and Tan take seriously about the risk of plagiarism [1]. ChatGPT generates text based on its database, which is the resemblance to other published articles or online resources that may be judged as plagiarism. This needs to be intervened by human beings.

2.3. Translating

Translating is one of the most widely used functions of ChatGPT. Although it is a Large Language Model, it was not originally designed for translation. Lee states that it still has an undeniable quality that can match or even surpass the current translators such as “Google Translate” and “DeepL” [8]. Here translation means not only translating between languages such as Chinese to English, but also the translation of the language itself, the so-called paraphrase. Here is an example given by ChatGPT:

Example 6: Translation between languages: Chinese to English

Original Sentence: 千山鸟飞绝, 万径人踪灭.

Translated Sentence: The birds vanish in the thousand mountains, and the paths of men disappear in the myriad trails.

Example 7: Translation of the language itself: English to English

Original Sentence: The birds vanish in the thousand mountains, and the paths of men disappear in the myriad trails.

Translated Sentence: The birds disappear amidst the countless mountains, while the trails of men fade into the endless paths.

Using ChatGPT to translate has its pros and cons. In the short term, it can improve the productivity and quality of academic writing, especially for non-native English speakers. Also, it could help EFL students to confirm whether their input writing is grammatically correct in a limited time [8]. After comparing human-written argumentative essays with ChatGPT-generated argumentative essays, Herbold concludes that ChatGPT-generated quality is higher than humans when it comes to writing essays. However, ChatGPT's writing is well-structured, often aligning with a similar and easily recognized style of beginning and conclusion, which is very noticeable like a template [9]. Given the difference in writing styles, it can be indicated that ChatGPT outperformed in argumentative writing than the other types of writing.

In the long run, using ChatGPT can be more helpful when compared with using other forms of translators. According to Lucía, tested content translated by CGPT-3.5 produced 21.57% fewer errors, mistranslations, and untranslated sections than GNMT(Google Neural Machine Translation) [10]. Based on the comprehensible output hypothesis developed by Merrill Swain, learning occurs when learners encounter a gap in their linguistic knowledge of the second language. It is unrealistic if learners decide not to use any translation software but only learn translation from their teachers and textbooks. Hence, with a better-quality translation from ChatGPT, students can benefit from it. However, language input is not enough for learners to master the language, language output also plays a very crucial role. Therefore, it faces a common but essential problem that students may be too reliant on using ChatGPT, leading to a decline in writing ability, or even an inability to write independently [11].

Moreover, ChatGPT can offer feedback on students' translations, giving the mark and suggestions. This can alleviate students' anxiety and give a boost to their confidence when writing in another language [12]. Here is an example developed by ChatGPT TranslationRater:

Original sentence: 孤舟蓑笠翁, 独钓寒江雪

Student's translation: An old man wearing a straw hat and raincoat in a solitary boat is fishing in the cold river amid the snow.

Given marks and suggestions: The translation of the given text from Chinese to English is rated as "GOOD". It's based on several factors: Accuracy, Fluency, Consistency, and Appropriateness. Your translation meets these criteria well. It correctly expresses the meaning of the original sentences, maintains the style and tone, and reads naturally in English.

Although its suggestions are not fully comprehensive and focused, it can to some extent trigger students' interests and motivate students to learn English as a second language more actively.

3. Discussion

To summarize previous findings, this paper indicates that ChatGPT is beneficial for English academic writing. This can give an overall perspective to EFL students with its benefits can be analyzed from both students' and teachers' perspectives. From the students' perspective, it is an

efficient tool in helping their English learning in the aspect of time and quality [2]. Students can write an excellent paper in a limited time and can learn how to write in a relatively native way, which was quite costly before ChatGPT came up. However, what students should pay attention to is that they should know how to use it rationally instead of relying on ChatGPT only. Being overly dependent can affect the language learning process and the ability to write in the future [11]. In addition, with its huge database, ChatGPT can provide a variety of aspects of knowledge regardless of the restraints of time and space. Therefore, anyone, as long as they can approach to ChatGPT, can start learning without any limits of time and location. Therefore, the popularization and lifelong education have been promoted. From the teachers' perspective, ChatGPT can decrease students' anxiety in English writing classrooms, which means the students' interest in English, especially writing is highly increased [12]. Therefore, teacher's efficiency and progress in teaching will be improved. What's more, teachers can also use ChatGPT to deal with a lot of students' homework at a certain time. What the teachers should focus on is that they should give clear guidance and instructions to students on how to use ChatGPT as a supportive aid instead of a replacement when they write. In addition, it is also necessary for teachers to bring up the topics of moral standards, especially plagiarism and property rights. Overall, ChatGPT is a student-centered tool that can help students learn independently or with the assistance of teachers.

4. Conclusion

This review paper aims to understand how ChatGPT can help L2 students in English academic writing. Three main usages of ChatGPT in helping English academic writing are proofreading, brainstorming, and translating. Firstly, proofreading can efficiently correct existing errors, especially spelling and grammar. Subtle errors such as sentence cohesion and word precision can also be solved. Secondly, brainstorming can motivate students' writing direction, propose a writing outline, and generate specific details in a targeted goal. Thirdly, translating has the dual ability of translation and paraphrasing, and its translation result can demonstrate that it is one of the best tools for language learning. Suggestions on how to use ChatGPT rationally in assisting students' writing are also given. This review is suited for teachers, students, and even parents to learn from how to integrate technology with pedagogy. Students can be stimulated with independent writing ability and awareness while teachers can be inspired to better guide students in writing. At the same time, parents are more likely to access more cutting-edge educational methods. In the future, this paper provides a reference for introducing AI into the classroom, which represents the trend of future education innovation.

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