

The Impact of Artificial Intelligence on College Students' Foreign Language Writing Ability

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Abstract: With the rapid development and popularisation of AI technology, AI tools are gradually and frequently used in students' learning processes. In the field of college students' foreign language learning, especially in the field of writing, the assistance that AI can give is particularly significant. Foreign language writing as language output and language learners comprehensive knowledge literacy, social interaction, psychological identity, cultural understanding and other aspects of the complexity of the integrated embodiment. Therefore, the use of artificial intelligence to assist college students in writing foreign languages has aroused discussion and attention. Focusing on the field of college students' foreign language writing ability and teaching, the purpose of this paper is to review the research on Artificial Intelligence (Chat GPT) assisted foreign language writing ability of college students and explore the opportunities and challenges of this technology. Writing is an indispensable ability for foreign language learners, and this study is of great significance for college students as a key group of people who drive the development of society. This paper will use literature analysis to understand the application of artificial intelligence in college students' foreign language writing, focusing on the advantages and disadvantages of the use of this technology. Finally, corresponding conclusions will be drawn based on the results of the study.

Keywords: Artificial intelligence, Foreign language writing, University students.

1. Introduction

With the rapid development and popularisation of AI technology, AI tools are gradually and frequently used in students' learning processes. In the field of foreign language learning for college students, especially in the field of writing, the assistance that AI can give is particularly significant. Artificial intelligence can help students correct, translate, article optimisation, etc. The efficient and quick auxiliary tools make it more common for college students to use artificial intelligence for writing. However, the huge computational system of AI also makes many scholars and educators feel uneasy, thinking that they may become the killer that will end college writing [1]. In addition, foreign language writing is not only a language output but also a complex and comprehensive manifestation of foreign language learners' comprehensive knowledge literacy, social interaction, psychological identity, cultural understanding and other aspects. Therefore, college students' use of AI-assisted foreign language writing has aroused discussion and concern. However, there are still different views on applying AI-assisted foreign language writing for college students, and the issue of how to use AI

correctly still needs to be further explored. In the field of college students' foreign language writing, it is necessary to analyse the impact of AI on college students' foreign language writing ability and the specific ways to use AI tools correctly. The purpose of this paper is to review the research on Artificial Intelligence (ChatGPT) assisting college students' foreign language writing ability, to explore the opportunities and challenges of this technology, which can help to improve college students' foreign language writing ability and to provide new ideas for Artificial Intelligence assisting in the teaching of foreign language writing and for students to correctly apply specific tools to improve their foreign language writing ability. In order to explore this topic, this paper will use literature analysis to understand the application of AI in college students' foreign language writing, focusing on the advantages and disadvantages of the process of using this technology. Finally, corresponding conclusions will be drawn based on the results of the study.

2. Literature Review

Artificial Intelligence (AI) is an umbrella term used to describe a process that can perform human intelligence processes such as learning, reasoning, and self-correction [2]. The process of employing AI technology and using algorithms and natural language processing models for creative writing, such as providing writing suggestions, text generation, and grammatical corrections, is known as AI-assisted writing. The current internet and digital technologies can be divided into three stages: the Web 1.0 era, the Web 2.0 era, and the Web 3.0 era. Technology-assisted writing, in general, shows a shift from low-order support to high-order integration [3].

Currently, the more widely used AI-assisted writing tool is Chat GPT. ChatGPT (Chat generative pre-trained transformer) is the result of natural language processing (natral language processing, NLP) direction, the use of transformer ChatGPT(Chat generative pretrained transformer) is the result of natral language processing (NLP) direction, using transformer structure and autoregressive tenprompting training mode, and using strong chemical learning with human feedback (RLHF) for training, and then developed into a pre-training mode, which has made important progress in understanding human language. With superb capabilities of information retrieval, natural language processing, text generation and so on, Chat GPT is essentially considered a conversational robot model that can generate content, such as code, text, images, etc. Chat GPT is essentially a dialogue-based robot model that can generate content such as code, text, images, etc., with superb information retrieval, natural speech processing, text generation, etc.

Heaton pointed out that writing ability includes the following two aspects: first, the ability to use language and the ability to write norms, such as vocabulary, grammar, rhetoric, writing, punctuation, stylistic format, etc.; and second, the ability to presuppose the object of writing, the organisation and presentation of content, and the ability to manage different styles of language [4]. According to the research, artificial intelligence has different degrees of influence in assisting college students' foreign language writing and has an impact on college students' foreign language writing ability. Wei Shuang and Li Luyao's study found that with the assistance of Chat GPT, students' compositions improved in terms of grammatical and punctuation accuracy, semantic fluency, and vocabulary richness [5]. However, some scholars are also concerned about the application of AI in the learning process. Ling Xiaoxiong, Wang Dingmin and Yuan Jian pointed out that AI (Chat GPT) has the disadvantages of plagiarism and counterfeiting, affecting the educational ecology, and leading to a lack of critical thinking [6]. In the rapid development of science and technology today, the development of artificial intelligence has been unstoppable. As college students who are in tune with the times, they should understand the impact of AI on foreign language writing and find a balance between humans and machines.

3. The Significance of Artificial Intelligence in the Teaching of Writing to College Students

3.1. Analysis of Teaching Objectives

The Guide to Teaching English to University Students (2020 Edition) clearly states that the integration of the latest information technology and curriculum teaching should be highly promoted in University English teaching. The educator is able to pay attention to the significance of modern educational technology, especially information technology [7]. According to the English Teaching Guide for University Students (2020 Edition), it is known that modern information technology such as artificial intelligence technology, multimedia technology, virtual classrooms, big data and other modern information technology should become an important tool and means of university foreign language teaching, and modern information technology and teaching are constantly integrating and developing. As a new representative of the development of artificial intelligence information technology, introducing it into university English teaching is of profound significance [8]. As university foreign language teachers, we should adapt to technological progress changes, introduce AI technology into actual teaching, and open up a new way of thinking about the teaching mode.

In addition, the University English Teaching Guide (2020 Edition) encourages students to make full use of multiple platforms and utilise resources towards active learning, self-directed learning and individual learning [7]. Artificial Intelligence technology can even help students with the help of a powerful database that breaks through the time and space limitations of traditional teacher feedback. Therefore, teachers should make full use of the ease of operation and mobility of human-computer interaction and do a good job of guiding students to use AI tools correctly.

3.2. Increasing Students' Self-Perception and Improving Academic Mood in Foreign Language Writing

The effect of AI on students' self-perceived energy and academic mood is crucial as an important factor affecting foreign language writing ability. In their study, Nazari N. et al. found that AI is an effective means of improving the self-perception and academic mood of second language students. In contrast to the negative emotions that may be triggered by teacher feedback (e.g., dissatisfaction, boredom, anxiety, etc.), AI is effective in enhancing students' self-efficacy by helping them to reduce grammatical, spelling, and other errors in their foreign language writing, and by providing them with opportunities to improve and optimise their writing. This approach reduces emotional barriers and enhances students' confidence and writing ability. In addition, AI technology makes it possible to shift from teacher-centred to student-centred through students' self-assessments. With the assistance of AI, students develop the ability to self-regulate and self-reflect and increase their confidence and motivation, thus being able to experience happiness in learning and improved academic mood [9].

3.3. Enhancing Students' Writing Skills

Yan, D. found that the benefits of Artificial Intelligence (Chat GPT) in assisting second language writing are significant [10]. Some students found AI positively helpful in improving accuracy, fluency and overall logic of writing [11], which shows the potential impact of AI on college students' foreign language writing ability.

Taking Chat GPT as an example, in terms of initial revision (e.g., grammar revision, punctuation correction, etc.), it can identify problems such as misuse of vocabulary, unclear references, confusing logic, and incorrect punctuation in a student's text. Through multiple interactions between the student and Chat GPT, the system is able to gain a deeper understanding of the student's logic and provide more precise and detailed guidance and feedback to help the student truly understand his or her own mistakes in writing. In terms of mediated embellishment (e.g., vocabulary substitution, semantic

fluency, etc.), many students, especially freshmen with weak foreign language proficiency, are often unable to accurately express their ideas due to their limited vocabulary, which makes it more difficult to embellish their compositions. This problem makes writing improvement even more difficult. However, Chat GPT has a rich vocabulary and a large number of sentence patterns, which enrich students' expressions by replacing advanced vocabulary and changing various sentence patterns. Regarding high-level output (output based on a specified text or request), Chat GPT can generate articles based on instructions. In response to certain essay topics without reference models, students can imitate the content provided by Chat GPT and absorb the resulting content, transforming it into personal knowledge to enhance their writing ability and self-learning [5]. In addition, AI can provide personalised help and develop personalised programmes based on students' characteristics, which provides convenience for students and reduces the burden for teachers.

4. The Pitfalls of Artificial Intelligence in College Students' Foreign Language Writing

4.1. Neglect of Social and Cultural Exchanges

Although artificial intelligence has made foreign language writing efficient and easy, artificial intelligence-assisted foreign language writing is facing some challenges in educational sessions [12]. Writing in a foreign language is different from the native language, and learners need to understand the differences in society and culture that are different from their own country, as well as the differences in language and expressions. Socio-cultural theory suggests that language learning starts at the level of interpersonal interaction, then moves to intrapersonal interaction, and from interpersonal to intrapersonal interaction requires verbalisation, followed by internalisation. (internalisation) stage [13]. As a kind of modern science and technology, artificial intelligence is limited by technology, and it may not be able to provide language learners with a real communication environment, and artificial intelligence does not have the original thinking of human beings, so it is unable to understand the real meaning of the language symbols, and cannot carry out a deeper spiritual communication with the students [14]. In addition, according to the University English Teaching Guide (2020 Edition), foreign language learning needs to cultivate students' cross-cultural communication skills [7], and communicating only with machines ignores the role of the environment. Coupled with the fact that the current cultural content covered by the current AI based on the big language model tends to be single [13], for students with low judgement, AI may steer them away from their normal development path, thus hindering their diversification.

4.2. Undermining Discursive and Academic Integrity Issues

Artificial Intelligence can generate textual content in seconds, which, on the face of it, improves student learning, but in reality, students are simply receiving knowledge output from the AI. With the continuous iteration of AI, AI, which is meant to be a tool for learners, has become the dominant force in learning. Therefore, over-reliance on AI for writing is a major blow to students' critical thinking, and educated people are reduced to passive acquirers of knowledge, alienating the initiative of the learning subject and gradually weakening the interactivity of learning [14]. In addition, with the increasing number of AI-generated texts, Cotton et al. found that the examples of university students using AI for academic fraud are no longer in the minority. They sounded the alarm for university students and education practitioners [15]. This shows that AI is a cause for concern in terms of plagiarism and academic integrity, which, to some extent, undermines the true meaning of higher education and creates a negative impact.

4.3. Challenging Traditional Teachers

Artificial Intelligence (AI) has knowledge inventory and algorithms that surpass the human brain, posing threats and challenges to humans. Wu Qing and Liu Yowen stated that the credibility and dependence of human teachers are affected by individual differences, and the gradual development of AI technology is threatening the status and authority of teachers [16]. In the traditional classroom, teachers master the core content. In contrast, in AI-assisted teaching, the teacher is no longer in a dominant position, and AI can provide students with learning content learning feedback, and the place of learning may not be in the traditional classroom, which leads to the inability of teachers to fully grasp the situation of students, so that teachers are gradually marginalised.

Nowadays, college students receive a variety of information every day, however, AI information may not be completely accurate [17], and as mentioned above, there is a problem of academic forgery in AI, and some of the students with poorer discernment skills are prone to fall into the traps created by AI, and question their teachers [18]. For teachers, how to help students identify correct information is another challenge.

5. Conclusion

This paper analyses the current advantages and disadvantages of artificial intelligence in the field of assisting university students in foreign language writing through comprehensive analysis and literature research. This study found that AI has a positive effect on following teaching objectives, improving college students' self-perception in foreign language writing, improving academic mood, and enhancing foreign language writing ability. However, there are shortcomings in using AI to assist foreign language writing, such as ignoring communication with society and culture, undermining students' critical thinking, having academic integrity issues, and challenging the status of traditional teachers.

In addition, the inquiry found that the current research mainly focuses on the changes in writing ability in the short term, and there are fewer long-term tracking studies, which the author believes is worth further exploration. Nowadays, both college students and education practitioners should look at the development of science and technology rationally, respect the historical trend of scientific and technological development, and not blindly believe that the existence of artificial intelligence plays a completely negative role in college students' foreign language writing. It is suggested that teachers can apply classroom teaching according to the characteristics of AI to help students correctly master and use AI technology, establish a correct attitude towards the use of technological tools, and enhance students' sensitivity to and ability to discern information so as to build a more complete and scientific education system.

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