

The Role and Impact of Artificial Intelligence in The Learning of English Writing Skills in Second Language Acquisition

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Abstract. In this era of Artificial Intelligence (AI), its integration into English writing in Second Language Acquisition has long been a research hot spot of numerous scholars all over the world. However, previous studies generally focus on investigating and assessing its present applications instead of adopting a comprehensive view. To help fill the research gap, this study examines the current usage of AI in the learning of English writing, explores the problems and obstacles students encounter, and provides feasible solutions to its defects. The result indicates that apart from bringing multiple benefits to learners, AI has also generated various problems mostly characterized by declining creative learning, weakened social connection, and menaced confidential information. On account of the existing problems, this study propounds that there is an urgent need for improvement, including revolutionizing AI's internal mechanism, modifying the criteria for English writing evaluation, and installing more advanced systems for surveillance and individualized learning.

Keywords: Artificial Intelligence, Writing, Second Language Acquisition.

1. Introduction

At present, with the proliferation of high-technology tools, ways of learning are becoming more and more diverse. In the global academic and professional context, students' proficiency in English has broader connotations. Instead of emphasizing communication skills solely, it also focuses on English writing competence [1]. The emergence of AI-assisted tools, such as ChatGPT and Grammarly, greatly influences students' learning of English writing in China. On the one hand, these tools can bring huge convenience to students by transcending the boundaries of time and space and providing real-time feedback to their compositions. On the other hand, owing to the internal defects of these tools and students' improper use of them, they may also pose enormous obstacles in the process of English writing.

This study aims to investigate the current stage of AI's participation in English learning, especially in English writing, explore problems and obstacles generated by AI in SLA English writing, and provide corresponding suggestions. It is hoped that this study can bring enlightenment for future researchers and students in this field and shed new light on the adoption of advanced technology in the field of education.

2. English Writing in Second Language Acquisition and AI

2.1. An Overview of English Writing in SLA

Nowadays, with the rapid development of globalization, the mastery of English as a foreign language has become a vital part of students in China. What's more, writing has been playing a significant role in English learning. As English teachers in China put much emphasis on the improvement of students' English writing competence, the result is not very satisfactory. According to Karl Angelo R. Tabernerero, teachers are constantly assailed by the poor writing competence of students, especially by their insufficient vocabulary and their poor command of grammar and syntax [2]. One of the biggest problems lies in the negative transfer of L1 (Chinese), which results in students' structural, grammatical, and habitual mistakes [3]. While the transfer of L1 brings about many common mistakes made by Chinese students, it is also demonstrated as a positive force in students' English writing in terms of posing hypotheses, brainstorming, and so on.

2.2. AI and its Integration into SLA English Writing

The emergence of AI brings forth a transformative era, which fundamentally changes the way people interact with technology. In recent years, the applications of AI have become broader and broader. It provides more opportunities and exhibits its full potential to make learning easier. On the other hand, it also demonstrates some challenges. For instance, in higher education, a harmonious equilibrium between ingenuity and accountability needs to be established to give full play to AI's capabilities [4].

According to Baker and Smith, AI tools adopted in education can be classified into the following categories: First, learner-facing AI tools, which are software that students employ to learn a subject matter [5]. Second, teacher-facing systems, which are ways for teachers to reduce workload and make their output more effective in specific tasks [5]. Third, system-facing AI tools, which can provide information for administrators and managers on the institutional level [5]. Likewise, the ways of AI's integration into SLA English writing can also be considered from these three aspects. Instead of focusing on a single category, the study will take a comprehensive view and look into the research questions from multiple dimensions.

Many typical forms of AI are helpful to students' SLA English writing. For example, ChatGPT has some benefits for SLA English writing, including the facilitation of error correction, heightened motivation, extended learning duration, and enhanced language proficiency [6]. What's more, Grammarly is viewed as a multifunctional writing assistant that can cope with problems from spelling and grammar to punctuation. Therefore, the overall quality of students' English writing can be greatly improved [2].

3. Problems and Obstacles Generated by AI

3.1. Declining Creative Learning

As AI tools bring a myriad of benefits to learners, they also, to some extent, hinder their creative learning. In EFL English writing, students sometimes find it hard to have fresh ideas due to their insufficient English proficiency and inadequate critical thinking. With the help of AI tools, both of these problems can be well addressed. But at the same time, students will gradually lose their creativity in learning. The loss of creativity takes multiple forms, including profiling, plagiarism, intellectual dishonesty, and an over-reliance on technology [7].

In addition, based on previous studies, AI-assisted tools also contribute a lot to automated English writing evaluation. However, these tools are being overused currently, for they demonstrate a great potential to assess EFL students' writing skills, especially in situations where face-to-face instruction is not possible [8]. At present, people are, to some degree, incapable of exploring the strengths and weaknesses of human teachers' evaluation and AI and striking a delicate balance between them. Students neglect the fact that AI tools can only present finished products without telling them how things are done step by step. In the long run, students will find it harder to think independently and gradually lose creativity.

3.2. Weakened Social Connection

The problem of techno-invasion is prevalent in the era of AI, as well. The intrusion of AI in people's daily lives can weaken their social connection with others, which is particularly true in language acquisition. Former researchers have expressed concern that AI would marginalize language learning by replacing interpersonal interactions and relationships with computers and machines [9]. The implication is that under the influence of AI, EFL students are likely to neglect the communicative function of English to some degree since their communication with AI in the virtual world has met their needs for language learning. However, human communication is both indispensable and irreplaceable no matter how developed AI communication will be. The emotion conveyed by tiny facial expressions, the slight change of one's intonation, and the recognition of

double meanings of some words are unique to humans and can never be replicated by AI. Furthermore, scientifically speaking, human beings are endowed with the innate ability to use languages for communicating or sharing information with other social agents [10]. This suggests that weakened social connection is not only a side effect of using AI but also a confrontation between advanced technology and human physiology.

3.3. Menaced Confidential Information

Another typical problem brought by AI is the violation of personal data. According to the European Council Parliament, personal data refers to "any information that pertains to a specific individual who can be directly or indirectly identified, such as by their name, ID number, location data, network identifier, or unique characteristics related to their physical, physiological, genetic, mental, economic, cultural, or social identity" [11]. When using AI tools for learning, users tend to accept all the terms in the notifications sent to them by websites without scrutiny. This is particularly widespread among inexperienced young learners, who are unaware of the danger of personal information leakage. However, users' acquiescence to others' access to their privacy can pose innumerable threats to themselves. Research suggests that considering the large volume of data that ChatGPT's machine learning algorithms process, it will be more than vulnerable to cyberattacks, risking unauthorized access or misuse of sensitive information [12]. In this respect, AI-assisted learning tools are more risky and costly compared to traditional ways of learning.

4. Suggestions to AI in English Writing in SLA

4.1. Stimulating Students' Creativity

The following suggestions are given to address the problems caused by AI concerning the loss of creativity.

Firstly, at the beginning of writing, AI's internal mechanism should be perfected to motivate students to generate more ingenious thoughts. Since EFL students in China have mostly experienced intensive learning to pass examinations, they have a strong tendency to be trapped in stereotypes when writing. The responsibility of AI is to inspire them to discard fixed patterns in their mind and probe into the essence of knowledge.

Secondly, the parameters of English writing evaluation should be redefined. In the process of writing evaluation, creativity should be viewed as a more significant factor. The current evaluation criteria involve structure, relevancy, cohesion, coherency, grammar, etc. One suggestion is that "creativity" should also be integrated into the above criteria, through which students will attach more importance to the presentation of creativity in their compositions.

Thirdly, it is necessary to develop a detective system that can limit the type and frequency of questions asked by students. In terms of the type, students should be required to ask probing questions only (questions beginning with "where", "how" or "why", like "Where can I get related materials to read?", "How should I make my argument clear?") rather than obvious questions (questions beginning with "what", such as "what is the largest city in the United States?"). In terms of frequency, students are not able to ask questions more than three times a day. This can prevent students from being overly reliant on AI tools and compel them to select the most valuable questions to ask and figure out the rest by themselves.

4.2. Improving Efficiency

Based on the experiment conducted by Monika M. and Suganthan Chandramohan, one-third of the participants claimed that ChatGPT failed to provide them with sufficient valuable feedback on their English learning [9]. This is not exceptional. On the contrary, many language learners in the world suffer from the low efficiency of AI tools.

To improve its efficiency, the development should be focused on the following aspects. For one thing, the time and energy students put in should be minimized. Currently, students spend such a long

time interacting with AI that sometimes they feel alienated from social life. Time can be saved through the implementation of new programs. For instance, the delay in AI's reaction is expected to be resolved by introducing more sensitive devices installed in AI-driven tools.

For another, the possibility to achieve desired results should be maximized. Students choose to learn together with AI for different reasons, including preparing for exams, traveling, discussing business, and so forth. To be more efficient, AI needs to detect their intentions of learning respectively and categorize them into different groups. For different groups, the ways and emphases of AI's interaction should also differ.

4.3. Strengthening the Protection

To prevent students' personal information leakage, the following points should be prioritized.

First, there is an urgent need for oversight from teachers [12]. They should emphasize the importance of online safety to students by reading the terms online in detail together with them. Once students are familiar with every term and are clear about which term might be hazardous, they will be more prudent before accepting all the terms.

What's more, students need to be more selective when using AI-driven tools for guidance. In this era, the proliferation of advanced technology contributes to the rise of numerous learning tools supported by AI. However, some have serious defects in design, resulting in the endangerment of users' privacy and other interests. Thus, students are recommended to choose the most credible tools to minimize the danger.

Last, new regulations should be set to rule out those substandard websites and applications, especially the ones with overbearing clauses. Considering that children and teenagers make up a large proportion of language learners, the most effective way is to eradicate as many AI tools with security risks as possible.

5. Conclusion

Generally speaking, this study looks into the following research questions. First, the study shows that English writing is viewed as an essential part of SLA, but problems abound at the same time. In recent years, AI has been integrated deeply into SLA English writing, as different types of AI tools are developed and adopted widely. Specifically, there are some AI-driven tools specializing in helping students improve their English writing skills, such as ChatGPT, Grammarly, and so forth.

Second, what are the problems and obstacles caused by AI in the learning of English writing right now? One problem is that students suffer from declining creative learning. If students are over-reliant on AI tools, they might never be clear about the overall procedures of completing one task. And if they are required to do it independently next time, they will have no thread about how to get started. In addition, students' social connections with others are at risk, as well. Their indulgence in the interaction of AI tools can result in serious alienation from people in real life. Furthermore, AI tools may cause personal information leakage. Users' acceptance of certain terms online can lead to devastating results. In this respect, though they are noted for convenience and efficiency, AI tools also come with higher risk.

Third, to promote students' originality, it is imperative to optimize the internal mechanism of AI, ameliorate the overall criteria of English writing evaluation, and configure a monitoring system to prevent students from overusing AI tools. To improve students' learning efficiency, more advanced devices need to be installed to ensure AI's prompt reaction and an intelligent system that can satisfy students' personalized learning requirements is also necessary.

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