

## Are AI-powered tools improving or deteriorating students' writing skills? A case study in Chinese international schools

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## Abstract

The advent of artificial intelligence (AI) has dramatically changed the nature of writing and the layout of teaching writing in English as a foreign language classroom creating a lot of challenges for language teachers and educators. The current study was designed to examine the perceptions of teachers and students on using AI-powered writing tools in ESL classrooms. The data of the current study were gathered from seven international schools located in Mainland China. The results of the research clearly illustrate that both teachers and students hold controversial attitudes in terms of the application of AI-based writing tools in ESL classrooms. The findings of this research demonstrate that while AI-powered tools boost students' writing performances and help them with generate ideas, they are not meant to be considered as a substitute for creativity, self-awareness, critical thinking, and independent analysis. AI writing techniques should coexist with traditional writing methodology fostering students and teachers to get involved in the process of creativity and enhancing their writing skills.

**Keywords:** Artificial Intelligence; writing skills; academic integrity; dehumanization; passive learners; lack of creative thinking.

## 1. Introduction

Writing has always been considered to possess an important role in language learning. According to researcher E. Smetanova (2013), writing helps develop critical thinking, promotes student anatomy, and encourages the student's confidence, speech, and creativity (Smetanová, 2013). Ismail A. states that the importance of writing is eventually derived from the fact that it reinforces grammatical structures, vocabulary, and idioms that we have been teaching to our students (Abdulwahed, 2011). The nature of writing is constantly evolving especially in the era of new technologies. The advent of generative AI has dramatically changed the nature of writing and the layout of teaching writing in ESL classrooms creating a lot of challenges for language teachers and educators. In general, AI writing tools (tools that are used to create educational content based on learners' input) are intended to analyze written materials and provide comments on many parts of the writing, such as grammar, vocabulary, syntax, content, and structure (Marzuki and others, 2023). Authors (particularly non-native English speakers) can benefit enormously from AI to instantly deliver clear, compelling, and authentic writing (Trung, 2019). By employing AI-based tools, students easily fulfill their assignments. Furthermore, AI tools assist students in improving their language patterns, paraphrasing, checking grammar points, formatting the language, etc. Overall, the benefits of AI tools in ESL classrooms are very significant. Alongside these benefits, AI has considerable drawbacks, which gained the attention of many language teachers and educators: Al-Ghamidi and others (2021), Kovanović and Gasevic (2019) Al-Mashaqba (2020), and so on. Lack of creativity and emotional patterns, unintentional plagiarism, repetitive content, and unreliable sources are the most tackled issues in terms of artificial intelligence drawbacks.

## 2. The Study objectives

The current research paper aims to:

1. Determine the drawbacks or challenges of employing artificial intelligence in teaching writing to middle and high school students in the People's Republic of China,
2. To identify the perceptions of teachers and students on using AI in teaching writing,
3. To ascertain the advantages and possible opportunities of applying AI tools in teaching writing.

## 3. Research Questions

1. What are the disadvantages of employing artificial intelligence in teaching writing?
2. How do teachers and students perceive the application of AI tools in writing instruction?
3. What benefits might using artificial intelligence tools for teaching writing offer?

The imperative to answer these research questions can ultimately lead to a more efficient integration of artificial intelligence in ESL classrooms. The outcomes of this research could be a blueprint for other language teachers and educators seeking to adopt comparable technologies. Additionally, attempting to investigate different stakeholders' (teachers, educators, students, etc.) perceptions of applying AI tools in writing instructions is of paramount importance. If different stakeholders perceive AI writing tools positively, it might result in wider adoption of artificial intelligence and boost ESL education globally. However, if language instructors and students feel doubtful about AI tools in improving their writing skills, understanding it will allow for some adjustments to be carried out to ensure the potential of AI writing tools is completely fulfilled. By providing answers to the above-mentioned questions, the current study seeks to facilitate a better integration of artificial intelligence in ESL classrooms.

#### **4. Literature review: artificial intelligence-powered tools and writing**

With the advent of artificial intelligence, a lot of students across the world have leveraged AI tools to improve their writing and fulfill their academic assignments. It is without doubt that artificial intelligence-powered tools highly support students of different levels and ages in performing their writing tasks: paraphrasing, grammar checking, rephrasing, proof-reading, etc. Despite its relatively short history, AI writing tools have a revolutionary impact on different spheres of human life. As Aladini A. (2023) mentions "AI writers are still in the early stages of development, but they can provide the assistance that many writers need".

Numerous studies conducted by different researchers have proved the effectiveness of AI-powered tools in developing writing skills. For instance, Marzuki and others (2023), mention that AI can assist students in generating content and providing suggestions for better sentence structures and vocabulary choices.

AI writing tools have the potential to drastically improve exchange students' learning experiences. For international students whose native language is not English studying in English-speaking countries, AI-powered translator and writing tools, voice recognition and dictation tools, and language learning tools can assist their learning (Wang and others, 2023).

Even though AI tools provide great functionality for performing writing instructions in ESL classrooms, such as identifying grammar errors, providing writing alternatives, excessively improving the readability of the texture, etc. some challenges remain salient in applying AI tools for writing instructions. Due to AI-powered tools, the rate of plagiarism and academic cheating in essays, research papers, etc. has indicated a significant increase in all kinds of educational institutions: schools, colleges, and universities. New AI technologies increased the risk of creating falsified work, combined with the difficulties of detecting such publications and the absence of perfect and comprehensive AI-detection technologies (Bahammam and others, 2023).

Besides academic integrity and writing ethics, researchers highlighted the importance of developing critical thinking and creativity. Students need to develop critical thinking skills to evaluate the quality and reliability of AI-generated content and avoid over-reliance on automated tools (Malik and others, 2023).

Even though students across the world are employing AI-powered technologies to perform their writing instructions, a gap remains about the scope and extent of its application. While artificial intelligence has garnered awareness globally, little has been revealed on the particular perspectives and learning experiences of middle and high school students, particularly those in the People's Republic of China. Therefore, the current study attempts to cover this gap and advance the academic discussions on the implications of AI in writing.

## 5. Methodology

### 5.1. Research design

To provide comprehensive and precise answers to the research questions, qualitative and quantitative research methods were employed in this study, particularly in-depth interviews and questionnaires. Our research design consists of two components: first conduct in-depth interviews with teachers, and second conduct interviews with students based on the questionnaire's results. To provide a comprehensive outcome for our research, we chose 7 EFL and 3 subject-teachers with different nationalities. In-depth interviews with teachers included open-ended and closed questions (see Appendix 1). The conducted interviews with the teachers provided sufficient background for data analysis, so we did not employ questionnaires. Meanwhile, for students both questionnaires and interviews were carried out, taking into consideration their age and development stage. The questionnaire is a suitable tool for measuring several independent variables, including facts, preferences, and behaviors (Kabir, 2016). The questionnaire intended for students has two different parts. Part A focuses on the advantages of AI-based tools in an ESL setting, while Part B contains statements on the drawbacks of AI-based writing tools. To elicit the students' opinions, we employed a 5-point Likert Scale format (strongly disagree, disagree, neutral, agree, strongly agree). To clarify the collected data, 14 students from different schools were chosen through purposive sampling (2 per class). Field notes, surveys in the classrooms, and other techniques were employed to gather data from the students. This methodology enabled us to thoroughly study all sorts of AI-powered tools that ESL teachers employ in their teaching process, as well as to fully understand the impact of artificial tools in writing instructions from the perspectives of different stakeholders.

### 5.2. Participants

The current study was carried out in the People's Republic of China in the 2023-2024 academic year, fall semester. The data of the following research were gathered from seven in-

ternational schools located in Mainland China: Tianjin, BIBA International School, Nanchang Limai International School, Hainan Limai International School, Jining Confucius International School, Beijing Limai International School, Binzhou Experimental International School, and Qingdao Limai International School. The acquirement of a diverse non-probability population served as a guideline in the process of the selection of schools. The research was only conducted in the international departments of the above-mentioned schools, where middle and high school students have computer-mediated foreign curricula. To assess the data and meet the research objectives, the current research used a variety of research strategies and methods: commentary, questionnaires, teacher interviews, as well as, quantitative and qualitative procedures, etc.

One of the purposes of the current study is to gain insights from ESL teachers on the implications of AI writing tools and their impact on students' writing. To achieve one of the goals of this research paper, ten teachers from seven international bilingual schools were recruited. Teachers' accessibility, willingness, and experience of teaching English by applying AI-powered tools were the main criteria in the selection process of teachers. All participant-teachers were non-Chinese citizen holders. Before any data was collected, all of the teacher participants were properly informed and provided sufficient information about the purpose of the following research. Of course, their consent was sought and approved. To ensure a variety of disciplinary areas and teaching experiences, short Wechat-based video interviews were conducted with the participants. All the interviewed teachers possessed teaching English as a second language qualification certificates and had AI teaching experience of more than two years. Our interviews with these foreign teachers mainly focused on the perceptions of utilizing AI writing tools in ESL settings. From the results of the conducted interviews, it was obvious that school faculty faced some challenges in terms of applying AI in teaching. To secure the confidentiality of participants, teachers were designated as P1, P2, P3, P4, P5, P6, P7, P8, P9, P10. Participant teachers taught English Language Arts (ELA), Science, and Social Studies courses, which included lots of writing tasks. The class sizes varied from 6-15. The language proficiency of students varied from beginner to upper-intermediate. Table 1 contains the demographic population of teachers.

To collect the required data for the following research paper, we used interviews as research instruments. With the help of interviews, we successfully managed to gain an immense amount of qualitative data on the usage of AI writing tools by EFL teachers, as well as their opinions on how AI tools influence students' writing content. To formulate pertinent inquiries of interviews, we examined relevant literature works: Zhao (2022), Nazari and others (2021), and so forth. The analysis of the relevant literature work enabled us to craft our research procedure. It contains the following questions: "What artificial intelligence-powered tools have you applied in ESL classrooms?" and "How have AI writing tools affected the writing of middle and high school students?"

**TABLE 1**

Demographic info

PARTICIPANT	AGE	GENDER	TEACHING EXPERIENCE (YEARS)	QUALIFICATION	EXPERIENCE IN USING AI WRITING TOOLS
P 1	32	Female	11	Ph.D.	2
P 2	35	Female	8	Master	>1
P 3	27	Male	5	Master	>2
P 4	42	Female	17	Bachelor	>2
P 5	38	Male	5	Master	1
P 6	29	Male	4	Master	2
P 7	50	Female	20	Master	>1
P 8	48	Female	23	Master	>1
P 9	30	Male	6	Bachelor	1
P 10	37	Female	9	Master	2

### 5.3. Data collection procedure

After the completion of the design of the research procedure, we started to arrange interviews with participants. The interviews were generally organized according to the availability of the participants. Before the interview, participants were notified about the study objectives. The interview covered general questions concerning the application of artificial intelligence in ESL settings, the impact of AI writing tools on developing students' writing skills, etc. All the interviews conducted by participants were recorded upon getting the participant's permission. The interview contained both open-ended questions and closed questions. Upon the end of each interview, we sincerely expressed our gratitude for their willingness to participate, their contribution to the research process, etc. The following procedure guarantees holistic, ethical, and productive data collection.

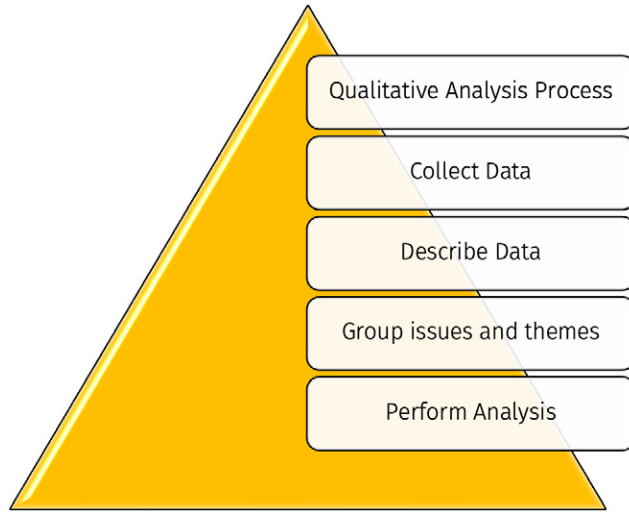
### 5.4. Data Analysis

To analyze the qualitative data, we employed Biggam's framework (see figure 1).

QAP was the most common form of data analysis used in this research. Conventional and directional QAP were also used. The coding began after all the interviews had been conducted. We familiarized ourselves with the interview content after reading and analyzing it many times. According to positive and negative comments provided by foreign teachers, we divided coded into different categories. The latter is shown in the comments of participants.

**FIGURE 1**

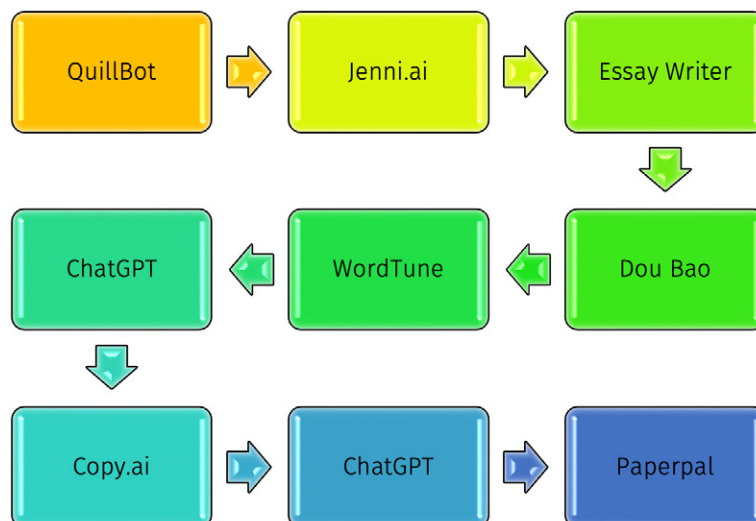
Biggams's Framework



## 6. Findings

### 6.1. AI-powered writing tools employed by teachers

The research data clearly illustrates that 10 foreign teachers in this study employed a variety of AI-based writing tools in their ESL classrooms. Those writing tools were chosen to meet the requirements of online assignments. To ascertain the accurate details of the AI writing tools, we formatted the collected data into an informative catalog (figure 2). The table includes the names of AI writing tools and highlights their major functions.



The following dataset clearly illustrates that teachers have integrated AI-powered writing tools into their teaching methodology. According to the teachers, among all the above-mentioned AI tools, Quillbot and WordTune are the most frequently used tools across the world. Notable for its function to paraphrase, QuillBot possesses an influential role in imparting to students how to effectively convey the same idea in various ways, while WordTune ameliorates the readability and clarity of the text. After QuillBot and WordTune, Essay Writer and Jenni.ai are the second most commonly used tools among middle and high school students. These AI-based tools assist students in writing essays.

## 6.2. Teachers' perceptions on implication of AI-based writing tools

### P 1

Teaching non-native English speakers in China is rather difficult, especially when it comes to teaching writing. Half of my students possess a basic level of English. It is really hard for them to write essays in grades 6-7. Some essays require 350-400 words. At first, I was trying to help them by spending hours and hours. With the help of AI students who do not have basic English skills complete all their tasks. The online system and the teacher who is in charge of checking their essays, do not know anything about the students. So, sometimes students whose English level is relatively good get lower scores than those who have basic English skills. This is very disappointing for some students. It causes the gradual loss of interest in learning and the dismissal of a competitive learning environment among peers. Students have become passive learners.

Positive	Neutral	Negative
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### P 2

In my ELA classes, students mainly use Jenni.ai, Dou Bao, and Quillbot. It is excessively hard for me to detect the plagiarism. As a teacher, I know the low level of my students, however, when they submit their assignments online, everything is tailored perfectly. The vocabulary is highly academic, with no grammar mistakes. AI detector apps cannot figure out plagiarism because students command AI to generate human-written texts. My students have become so dependent on AI machines. Sometimes I have the impression that they lost their thinking and problem-solving abilities. Whatever happens, they just use AI to find solutions. They prefer to rely on AI applications more than ask questions to their teachers or peers.

Positive	Neutral	Negative
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### P 3

I am teaching grade 10's. Their current level of English is decent. I have students from different countries: Germany, Korea, China, England, Armenia, etc. I have noticed that after using AI writing tools, their vocabulary has been enriched. Students started to use formal words in their writings and also they tried to use them in spoken English. If there are any grammar structures that they are not sure how to use, they easily check by Quillbot or WordTune. This is good, AI writing tools made them independent learners.

Positive	Neutral	Negative
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**P 3**

I sincerely think that AI technologies have worsened schooling. Students do not want to learn, find the correct answers, or check the unknown words. They write the quizzes with the help of Chat-GPT. They copy their questions and AI provides them the answers. AI has caused huge problems in education. It seems education is stepping back. Now we have entered a new era where interactive classes have become outdated. AI technology-based teaching has reduced interaction and communication among teachers and students. Students heavily rely on writing apps when they encounter any problem. They are not willing to share their opinions or ask questions.

Positive	Neutral	Negative
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**P 4**

I teach middle school Social Studies. Since the usage of AI technology, students have improved their grammar and sentence structure. Students type their sentences and AI tools correct them. AI helps them to figure out their mistakes, which better their English writing.

Positive	Neutral	Negative
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**P 5**

AI is a catastrophe for me. Instead of teaching, I am always detecting plagiarism, and having trouble with students. Students do not learn. They just use AI tools, copy and paste. AI has highly increased cheating. For me, this is a degradation of generation. Schools should prohibit the implication of AI in classrooms.

Positive	Neutral	Negative
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**P 6**

I have forbidden my students from using any AI tools or even Google because students used to submit AI-generated materials. After discussion with the school administration, I got the consent of my leaders to make the students compose their essays on paper, I check them, correct their mistakes, explain, and then they type it. The same about tests. Everything is paper-based. Otherwise, students will falsify the real results.

Positive	Neutral	Negative
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**P 7**

AI killed the creativity of writing. Writing should reflect students' imagination, creativity, and analytical abilities. By using AI students do not think, they just rely on the text AI provided them. Recently I was checking grade 9's essays. There was not even an essay that could have any imaginative elements. The individuality of essays is getting lower and lower. I think soon creative writing will be a necessity.

Positive	Neutral	Negative
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**P 8**

Recent developments in technology have made students so dependent on technology. They lack self-confidence. Whatever happens, they just use ChatGPT, Openai, or DouBao. It seems they lost their mind of thinking, analyzing, and self-management. Students have become lazy. Some of them are even questioning the necessity of learning a new language. By using AI writing tools and AI voicebots they can easily achieve the desired outcome.

Positive	Neutral	Negative
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**P 9**

I think AI writing tools are useful if students' language proficiency is intermediate or advanced. They can benefit a lot by using AI: activate vocabulary, master grammar structures, and practice academic writing. They explore new ways to compose the same idea.

Positive	Neutral	Negative
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**P 10**

AI writing skills are in their early stage of development. Of course, they are not like human beings. AI writing tools are machines. A lot of concerns have been raised in terms of AI in education. I think, over time, professionals will try fill those gaps as well.

Positive	Neutral	Negative
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To generalize the comments made by teachers, we used the SWOT model. SWOT analysis (Strengths, Weaknesses, Opportunities, and Threats) is one of several strategic planning tools that takes the information from an environmental analysis and separates it into internal (strengths and weaknesses) and external issues (opportunities and threats) (Ma, 2022).

To obtain a holistic understanding of the impact of Artificial intelligence-powered writing tools in ESL classrooms, we prepared and employed a questionnaire for middle and high school students. This is the second component of our research design. The questionnaire was combined with students' opinions. Students were explained the study objectives and we received their consent. Around 100 middle and high school students filled out the questionnaire. For some students, the questionnaire included Chinese translation as well, taking into consideration their English language proficiency. Table 4 reflects the results obtained from the survey of the upper-intermediate group.

It is obvious from table 4 that students in the upper-intermediate level acknowledge the importance of AI writing tools in enhancing their writing skills and upgrading the caliber of their writing. (M 4.71, 4.37 accordingly). Most students accepted the fact that applying AI writing tools helps them to achieve their learning objectives.

**FIGURE 2**

SWOT



**TABLE 4**

Advantages of AI-powered writing tools

THE BENEFITS OF AI IN WRITING INSTRUCTION		MODE	MEDIAN	MEAN
1.	AI-powered tools boost students' writing skills	5	4	4.58
2.	AI-powered writing tools help learners to meet their learning objectives.	5	4	4.37
3.	AI-based tools aid learners enrich vocabulary.	3	4	3.76
4.	AI-powered writing tools improve the quality of students' writing.	4	4	4.19
5.	AI-powered writing tools are easily available.	4	5	4.69
6.	AI-based tools provide learners with multiple functions.	3	3	2.75
7.	AI writing tools make learning engaging.	4	4	4.52
8.	AI-based writing tools prompt students' interest.	4	3	3.76

The shortcomings of using AI-based writing tools in writing instructions are reflected in table 5.

**TABLE 5**

The shortcomings of AI in writing instruction

	THE SHORTCOMINGS OF AI IN WRITING INSTRUCTION	MODE	MEDIAN	MEAN
1.	Paraphrasing a long quantity of text is unreliable.	4	4	3.54
2.	AI-powered writing tools have a limited amount of suggestions for synonyms, sometimes irrelevant to the context.	4	4	4
3.	Essay writing tools are emotionless and not precise.	3	3	2.93
4.	AI-powered writing tools simply correct the mistakes and do not provide any details for the usage.	4	4	4.24
5.	AI-powered writing tools kill the creativity and analytical abilities of students.	3	3	3.52
6.	AI writing tools make learning boring and monotonous.	3	2	2.94
7.	AI writing tools make students technology-dependent.	4	4	3.52

It can be seen from the outcomes of table 5 that students acknowledge the drawbacks of AI-powered writing tools in ESL settings. Participants expressed dissatisfaction with the lengthy sentences, unusual structures, and complex grammatical elements.

### Students' Perceptions of AI -based tools in developing writing skills

Before I was so stressed with my homework assignments. However, now I can easily translate the text, write it in my mother language, and then translate it into English. (S1)

AI writing tools are very useful. Sometimes I can't express myself, so I use online translators, then I check and paraphrase it with Quillbot. Quillbot can provide many versions of the same idea. (S2)

I use AI writing tools to complete all my online tasks. Sometimes I do not know what I am filling, in because I simply copy and paste it, however, it helps me save my time and complete the course. (S3)

I think my English level has not improved a lot since using AI tools. They help me perform my learning objectives, but I do not get comprehensible input. (S4)

AI writing tools helped me to expand my vocabulary and word-expressions. (S5)

We have so many assignments to complete in a day. Thankfully AI writing tools save our time and enable us to complete them quickly. I feel happy with AI tools, they save my time, and make me feel more confident. (S6)

My grammar is not good, so whenever I want to submit my essays, I just check them with AI. It makes the quality of my writing. Sometimes I understand my mistakes, and sometimes I cannot understand what is my mistakes. I just copy and paste it. (S7)

The worst thing about AI writing tools is the limit of words. With a small quantity of words, it is fine, it can easily be paraphrased. So, I always split the text into small parts. (S8)

AI functions are limited, like phrasing one sentence can have only three versions. The scope needs to be developed. (S9)

With QuillBot it is so easy to paraphrase any text, it is free, and you can use as much as you want, with no limitation. (S10)

Grammarly is a life-saver, it is very useful, it can quickly detect grammar, as well as spelling errors, and offers some improvements. (S11)

## 7. Discussions

The objectives of the following research are to examine the impact of different AI-powered writing tools on students' writing as perceived by ESL teachers and students in international schools in China. The preliminary results underscore that a lot of Chinese international schools are deploying artificial intelligence-based writing tools in English teaching. Taking into consideration EFL teachers' feedback, we can state that the AI incorporation into the traditional way of teaching has caused some conflicts and controversial opinions among EFL teachers in China. However, all the teachers emphasized the importance of integrating AI writing technology into ESL classrooms. This is consistent with Liu and others (2023), works that reinforce the integration of diverse AI writing tools in improving the teaching process. Some teachers stated that AI writing tools boost EFL learners' writing skills by fostering a comprehensive environment for learning. The latter concurs with the previous research outcomes done by J. Huang and others (2021). However, these teachers stressed the importance of proficiency level. According to them language proficiency highly matters with the efficiency of AI writing tool's usage (P4, P9).

The rest of the teachers hold negative opinions on the impact of AI-based writing tools pointing out numerous drawbacks. More particularly, P7 and P8 expressed their concerns about the potential for students to become overly dependent on technology which could deliberately impede students' critical thinking, analytical abilities, and problem-solving skills. The latter goes in line with the works of P. Li (2023), and Malik and others (2023), confirm that EFL learners may put less effort into developing critical thinking skills if they do not heavily rely on them.

P1 and P2 underscore the importance of the absence of academic integrity as a major drawback of AI writing tools. Besides, P1 mentions the gradual decrease of academic com-

petitiveness among peers, as well as the transition of active learners into passive learners: *"Students have become passive learners"*. P2 highlighted another important issue: the AI-mediated shift of linguistic style of students' writings into highly academic: *"...everything is tailored perfectly. The vocabulary is highly academic, no grammar mistakes"*. This clearly shows that AI tools have not yet developed leveled-writing functions. P10 provides a balanced opinion by assessing the possible advantages and drawbacks of AI tools.

The second point of discussion is understanding students' perceptions of the impact of AI writing tools. The majority of middle and high school students (72%) agreed that AI-powered writing tools enhanced their writing performances. S1, S2, and S7 underlined time-saving, easy accessibility, and adaptability as positive features while applying AI writing tools. It is noteworthy to mention that this is the group with highest mean number ( $M > 4.69$ ). Students provided more detailed explanations of the above-mentioned benefits in the interviews. *"We have so many assignments to complete in a day. Thankfully AI writing tools save our time and enable us to complete them quickly"* (S7). Regarding paraphrasing and grammar checking functions, students highlighted the following: *"With QuillBot it is so easy to paraphrase any text, it is free, you can use as much as you want, no limitation"* (S10). *"Grammarly is a life-saver, it is very useful, it can quickly detect the grammar, as well as spelling errors and offer some improvements"* (S11). We can see that EFL students value the AI functions of free accessibility, adaptability, and flexibility features. These findings are further corroborated by the works of Chandra and Yuyun (2018), and Kol and others (2018).

It should be mentioned that in contrary to teachers' opinions, students perceive AI writing tools as engaging and motivational ( $M > 3.5$ ). *"I feel happy with AI tools, they save my time, and make me feel more confident"* (S6).

From students' comments and interviews, we can state that students mainly perceive AI-based writing tools as positive, allowing them to meet their learning goals. However, it is also important to analyze and understand the drawbacks of AI writing tools as highlighted by some students.

One of the biggest drawbacks that students stressed in their interviews is the automatic correction of mistakes, without explanation ( $M > 4.24$ ). Regarding this one of the students mentioned: *"...sometimes I cannot understand what is my mistake. I just copy and paste it"*.

Another important shortcoming mentioned by students is the over-dependence on technology, loss of self-confidence, and perfunctory role. AI writing tools help students with basic English levels to meet the learning objectives, but they do not teach the students, they do not accumulate students' linguistic capital. In concern to this, one of the students commented as follows: *"I think my English level has not improved a lot since using AI tools. They help me perform my learning objectives, but I do not get comprehensible input"* (S4).

It is no wonder that technology dependence and perfunctory correction without explanation got the highest ratings of mean scores ( $M > 4.26$ ,  $M > 3.52$ ).

The negative or positive perception of AI writing tools by students mainly depends on the student's level of growth, understanding, matureness, and prioritizing life-long knowledge over short-term goals. Interestingly enough some students changed their perceptions from positive to negative after our one-by-one conduct of interview.

The above-discussed drawbacks: lack of creativity, laziness, limited options, emotionless-generated content, etc., were tackled in the works of Nguyen (2023), Kim and Han (2021).

## 8. Limitations and implications

Despite my best attempts to evaluate the data analysis, the current study has several inconceivable limitations. Due to scheduling constraints, we were not able to conduct interviews with all the students. In our research, we mainly focused on a limited number of AI writing tools provided by participant teachers, while in reality, the range of AI writing tools is very wide. To obtain more reliable and accurate results, a sizable survey should be conducted with more teachers and students in many international schools in China and across the world.

The following study clearly shows that AI writing tools should be employed as supplementary tools and not an absolute replacement for teachers in English writing classes. We highly suggest AI experts organize training among teachers and students on how to use AI writing tools more efficiently and gain better outcomes. AI technologies assist teachers in many aspects like course preparation, lesson planning, etc. However, EFL teachers need to understand the constraints of AI tools. Both teachers and students should consider AI writing tools as supportive technology and not merely depend on them.

## 9. Conclusion

The current study was designed to examine the perceptions of teachers and students on applying AI-powered tools in English writing classes. The outcomes of the research demonstrate that both teachers and students hold controversial attitudes in terms of AI-based writing tools. Undoubtedly, AI-based writing tools significantly help students with their writing tasks. With the help of AI writing tools students notably develop their writing skills, enrich wordstock, and ameliorate grammatical instructions. All the above-mentioned factors help students to achieve their learning objectives. Due to its real-time feedback, AI writing tools make writing assignments more engaging, create interactive learning environments, and help the students save time.

Our research findings have also highlighted some major drawbacks in applying AI tools in English writing instructions. More particularly, one of the biggest drawbacks of AI-powered tools is the violation of ethical norms and unconscious increase of plagiarism especially among the circle of students who possess low-language proficiency. The other major drawback is dehumanizing the creative spark, as well as individuality of students which causes active-learner students to become passive-learners disrupting the development of self-awareness and competitiveness among peers. Students' over-dependence on technology, lack of creativity, overgeneralized and repetitive content, stimulation of laziness, and diminishing ability to gain language knowledge through problem-solving are other potential negative risks mentioned by students and teachers. AI writing skills should coexist with traditional way of writing methodology, and not serve as a substitute.

The findings of this research clearly illustrate that in the process of incorporating AI in English writing classes, it is crucial to strengthen language policies and ethical norms, maintain academic integrity, and ascertain consistency.

I hope our study offers a valuable foundation, paving a stage for further research.

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## Appendix 1

### Teacher's Interview: Reflection Questions

1. What are your perceptions of AI application in ESL classrooms?
2. Do you consider AI-biased tools negative or positive?
3. What are the most common AI-powered writing tools used in ESL classrooms?
4. AI writing tools have many functions. Which ones do you think are the most frequently used by students?
5. In what way do you think AI tools can benefit developing English writing skills?
6. What challenges have you faced while using AI writing tools in your classroom?
7. What are the drawbacks of utilizing AI-powered tools in developing students' writing skills?
8. What are your suggestions to overcome the challenges of AI writing tools in teaching English?
9. Do you think AI writing tools will enjoy much popularity in the future?