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# Use of AI Tools in EFL Writing Instruction: A Case Study of Chinese Vocational College Instructors

*Xiaomin Deng* [1,2*] , *Ying Xu* [1,3] , *Supyan Hussin* [4] , *Nur Ainil Sulaiman* [1]

[1] *Faculty of Education, Universiti Kebangsaan Malaysia, Bangi, Malaysia*

[2] *Faculty of Foreign Languages, Nanchong Vocational and Technical College, Nanchong, China*

[3] *Faculty of Economics and Finance, Zhanjiang University of Science and Technology, Zhanjiang, China*

[4] *Languages and Linguistics Research Center, Universiti Kebangsaan Malaysia, Bangi, Malaysia*

## ABSTRACT

Advancements in artificial intelligence (AI) have begun to reshape language education, particularly in the area of writing instruction. In the context of English as a foreign language (EFL), this study explores the types of AI writing tools currently in use, EFL instructors' experiences with them, and their perceptions of the role such technologies play in teaching English writing at vocational and technical colleges in China. Adopting a qualitative case study approach, the study involved semi-structured interviews with EFL writing instructors. Participants were purposefully selected based on their experience with integrating AI tools into their teaching practice. Findings suggest that teachers generally viewed AI writing tools as helpful in providing timely feedback and supporting students' independent writing development. These tools were seen as effective in easing teachers' routine workloads while offering pedagogically relevant suggestions and feedback to learners. However, participants also expressed concerns regarding their shifting roles in the English writing classroom, raising questions about how to balance the use of automated feedback with human instruction. The study underscores the need for clearer pedagogical frameworks to guide the integration of AI tools to ensure that teachers remain central in fostering critical thinking, language awareness, and writing competence in the EFL context.

*Keywords:* AI; EFL; English Writing; Teacher Perceptions; China

# 1. Introduction

With the promulgation of relevant government policies, vocational and technical colleges have gradually promoted the process of informatization of English teaching, and the application of artificial intelligence has brought a new way of teaching English in vocational and technical colleges [1]. Online and electronic writing assistance tools, including concordances, grammar checkers, thesauruses, and others, are a great manifestation of these efforts that combine new technologies to solve an age-old question [2].

Among the five essential English skills—listening, speaking, reading, writing, and translation—the acquisition of language output, specifically speaking and writing, has long been considered a challenging endeavor. Writing is essential and has been regarded as one of the most difficult language skills that students need to acquire [3–5]. The proficiency level of English writing serves as an indicator of students' overall grasp of the English language, and the development of English writing abilities is of utmost importance in the context of higher vocational education English instruction.

Research conducted in the field of college English writing education primarily focuses on several aspects such as written feedback models, error analysis, mind mapping, flipped classrooms, process teaching methods, and analysis of grammar, vocabulary, and discourse [6–10]. These studies have facilitated the advancement of pedagogy in college-level English writing instruction. However, the use of AI tools in the teaching of writing in vocational and technical college EFL classrooms, especially in the Chinese context, is a deficient aspect in terms of teachers' instructional practices.

Many teachers and scholars have observed English writing as a challenging skill for students in higher vocational colleges. The students exhibit fear and a lack of enthusiasm towards writing, along with a lack of practice, resulting in low scores in CET-4 and CET-6 writing. Additionally, writing requires tremendous time for the teachers to revise and grade students' assignments [1]; therefore, teaching how to write is also a challenging task [11], and the heavy workload of teachers prevents them from providing timely feedback on students' writing, which hinders the correction of mistakes. Furthermore, some students fail to respond appropriately to teachers' feedback, leading to a delay in making necessary revisions and subsequently hindering their improvement in English writing.

In recent years, there has been a growing inclination towards the development of automated aid tools in the field of EFL writing. These systems derive advantages from the presence of freely accessible databases and concordances available online, along with texts sourced from many locations across the English-speaking globe. Algorithms have the ability to facilitate comparisons and inferences, hence offering potential benefits to EFL students. These algorithms can effectively identify problems in their writing and provide guidance on how to address them.

The utilization of artificial intelligence (AI) has the potential to revolutionize the educational landscape by transforming various educational tools and practices. Therefore, this research aims to investigate AI tools used for teaching English writing in vocational and technical colleges, with the intention of altering the conventional methods employed in writing instruction. Moreover, it attempts to examine the perspectives of EFL teachers in Chinese vocational and technical colleges when they teach writing with AI tools. To fulfill the objectives of this study, the following two research questions are put forward:

1. What AI tools do EFL teachers at vocational and technical colleges in China use, and for what purposes?

2. How do EFL teachers at vocational and technical colleges in China perceive the use of AI tools in the teaching of writing, and what are their recommendations for future use?

# 2. Literature Review

The field of writing is extensively examined within the fields of linguistics, education, and communication. The subject scope is extensive, encompassing various topics such as language and the pedagogy of writing instruction. Feedback is a crucial element in all stages of education, playing a vital role in both the teaching and learning processes. It is an essential aspect of instructional communication. The classification of feedback on writing is commonly determined by the source of the feedback [12].

## 2.1. Written Corrective Feedback

Corrective feedback (CF) is a methodology that fo-

cuses on addressing errors in a reactive manner. Its main purpose is to draw learners' attention to the correct form while they are executing a task, in a personalized and tailored way. An argument can be made that providing corrective feedback on written output is particularly advantageous as a focus-on-form intervention. The significance of providing written corrective feedback (WCF) in the process of acquiring a second language (L2) has been a subject of substantial debate among theorists and researchers [13].

L2 or foreign language writing teachers provide input on a diverse array of topics while evaluating their students' texts. They may evaluate the text's subject matter, the manner in which its concepts are conveyed and structured, the suitability of the terminology employed, and other related aspects. The focus of most studies has been on feedback regarding linguistic faults. Instances of CF or error correction are often used to address non-target production by L2 learners. Scholars in the L2 writing sector have mostly focused on investigating if and how WCF might enhance students' writing skills and foster their independence as writers [14,15].

## 2.2. Teacher Feedback Literacy

Teacher feedback literacy refers to the understanding, skills, and attitudes needed to create feedback systems that effectively engage students and foster their ability to understand and use feedback. This concept was described by Carless and Winstone [16]. The effectiveness of feedback processes for students is influenced by the way teachers establish conducive environments for these outcomes. However, there is currently no comprehensive framework that consolidates the various roles of teachers in this regard [17–19].

In Lee's [20] study of writing teacher feedback literacy, he developed a tripartite theoretical framework that places feedback literacy within the context of formative assessment, sociocultural theory, and language teacher competence. This framework considers the larger concept of competence, which includes feedback-related knowledge, skills, values, and goals.

Carless and Winstone [16] proposed that skilled teachers who possess strong feedback literacy create assessment environments that promote efficient feedback processes (the design dimension). They also handle the communicational and relational aspects of feedback with students in a sensitive manner (the relational dimension). Additionally, they effectively manage practical compromises when dealing with the practicalities of feedback (pragmatic dimension).

Heron et al. [21] investigated feedback talk and teacher feedback literacy within the larger framework of teaching and learning. This exploratory study's contribution is to define feedback talk within the larger framework of teaching and learning and highlight its significance for fostering positive connections in the classroom. The growth of teacher feedback literacy can be aided by a more detailed comprehension of feedback talk.

## 2.3. Students Feedback Literacy

Students' feedback literacy refers to their capacity to comprehend, employ, and derive advantages from feedback procedures [22]. According to Yu, Zhang and Liu [23], the main focus is on "how learners approach, use, and evaluate feedback and manage their feelings in the process." Student feedback literacy in L2 disciplinary writing is more intricate compared to general English for Academic Purposes (EAP) writing or L2 compositions. This complexity stems from the need for students to possess expertise in subject/disciplinary topics, academic customs, and L2 communication [24].

When teachers and students have shared aims, goals, and responsibilities, there is a possibility for a mutually reinforcing drive towards the development of feedback literacy [16]. Teachers can enhance their feedback designs by acknowledging and understanding students' viewpoints and challenges with feedback. Students can contribute to the improvement of teacher development in feedback literacy by sharing their achievements and difficulties in obtaining, analyzing, and utilizing feedback data.

Despite its accepted importance, we have not given enough thought to the significance of student feedback literacy for instruction and course design [18]. It encompasses comprehension of the nature and optimal management of feedback, as well as the abilities and attitudes necessary to properly utilize feedback. It also requires recognizing the respective roles of teachers and students in these feedback processes. A significant obstacle to providing good feedback is typically the limited proficiency of students in understanding and utilizing feedback. While teachers have a

responsibility to manage feedback processes and build the curriculum to facilitate the use of feedback, it is ultimately the students who have the power to enhance their own learning [18].

## 2.4. Teacher Feedback

Feedback is crucial in the process of Chinese EFL students' revision of writing. The adoption of teacher feedback was more probable and resulted in significant enhancements in writing, as indicated by Yang et al. [25]. Feng and Tang's [26] study found that learners relied more on teacher feedback than peer feedback when revising their work. Furthermore, they utilized a greater proportion of teacher feedback compared to peer feedback without fully comprehending its importance or worth. The interviews conducted in the study revealed that learners passively accepted teacher feedback and highlighted the supportive role of using their first language during peer interactions.

In Lee's [27] study, the researcher explored how a sociocultural perspective, influenced by mediated learning experience (MLE) and activity theory (AT), might provide valuable insights into teacher feedback in EFL writing courses. Han and Hyland [28] investigated the cognitive, behavioral, and affective involvement of four Chinese EFL learners with teachers' corrective feedback. Multiple interrelated elements, both individual and contextual, influence many aspects of involvement and are subject to change, according to the study's findings.

Zheng and Yu [29] conducted a study on the impact of teacher-written corrective feedback on the engagement of lower-proficiency learners. They found that learners with low proficiency levels had reduced cognitive and behavioral engagement. Various linguistic and affective factors can influence learner engagement with teacher feedback. These factors include learner attitude and beliefs [30], emotional responses [31], error types [13], and feedback explicitness [32].

However, English teachers in vocational and technical colleges in China undertake a lot of classes because of the increase in the size of vocational and technical colleges [33]. Some vocational and technical institutions in China face a shortage of English teachers, resulting in a situation where these teachers are responsible for instructing all students in the school in public English classes. This arrangement places a significant burden on their workload. Conse-

quently, teachers are unable to deliver prompt feedback on students' English writing.

## 2.5. Automated Writing Evaluation and Automated Written Corrective Feedback

Computational techniques for scoring essays have come into use. Their bases and development methods raise both old and new measurement issues [34]. The utilization of automated writing evaluation (AWE) systems and related instruments for assessment in L2 and foreign language writing classrooms has experienced swift growth owing to its myriad benefits [10]. AWE consists of two main elements: a scoring engine that produces automated scores and a feedback engine that delivers automated written feedback, sometimes referred to as automated written corrective feedback (AWCF) [35].

Koltovskaia (2020) [10] studied the behavioral, cognitive, and affective processes by which two ESL college students used Grammarly feedback (AWCF) to revise their final drafts. The results of this study have several implications for improving student engagement with automated feedback and optimizing the use of Grammarly for assessment in second language writing classes. If there is active engagement, Grammarly and related automated tools could be helpful tools for writing assessment in L2 and foreign language classrooms. Teachers could add them to writing curricula as an additional tool to support students' low-order writing development difficulties.

## 2.6. AI in Education

The emergence and implementation of the latest iteration of information technology, namely AI, has introduced novel approaches to the field of education. The utilization of intelligent technology to facilitate teaching and learning has increasingly included the human-computer collaborative teaching approach across various educational contexts.

The creation of "computers that perform cognitive tasks usually associated with human minds, particularly learning and problem-solving," is the primary focus of artificial intelligence in education (AIEd), according to Baker and Smith [36]. AI, as an interdisciplinary subject that has been demonstrated to be effective in tackling complex issues in a variety of disciplines, including education [37], is

constantly changing people's lifestyles and ways of thinking, providing new impetus for the advancement of modern education [38].

From the viewpoint of educators, applications of AI transform the tools of education [39]. AI-driven robots can serve as teaching assistants, collecting data on each student, providing analysis and recommendations, and helping instructors diagnose students' problems and learning levels [40]. An AI application might play the role of a tutor who observes students' learning processes, analyzes their learning performance, and provides instant assistance to them based on their needs [41].

The utilization of AI technologies in the field of education has expanded significantly, providing instructors with opportunities to alleviate monotonous and repetitive activities and enhance their ability to promptly respond to students. Consequently, this promotes the advancement of adaptive and individualized teaching methods [42]. Huang, Saleh and Liu [43] also stated that AI is crucial for personalized teaching and learning. It can gather and analyze student data to provide teachers with insights on teaching methods [44].

AI has a variety of educational applications, such as personalized learning platforms to promote students' learning, automated assessment systems to aid teachers, and facial recognition systems to generate insights about learners' behaviors. Recent years have heavily challenged the traditional "one size fits all" education system for its inability to meet the needs of individual students. Global education systems are increasingly individualized and student-centered. Big Data, Machine Learning, and AI have enabled current technology to adapt to the unique characteristics of humans; smart robots and computers have been developed to recognize individual-specific demands [45].

The advancement of AI has brought computer-supported education to a new era [41]. The application of AI has the potential to revolutionize the educational landscape by transforming various educational tools and practices. Educators can derive advantages from the utilization of intelligent systems that assist in the evaluation of student performance, the gathering of data, augmenting the learning process, and formulating novel instructional approaches. The utilization of intelligent tutors and asynchronous learning can yield advantageous consequences for students

in terms of enhancing their learning progress. However, we also need to be mindful of the potential consequences of overrelying on it. While AI can help us teach and learn, we still need to think critically and creatively on our own.

## 2.7. AI Writing Tools

AI writing tools examine written materials and provide feedback on various aspects of the writing, such as grammar, vocabulary, syntax, content, and structure [46–48]. EFL students have the opportunity to receive immediate and personalized feedback on their writing, aiding them in promptly recognizing and rectifying errors. The provision of immediate feedback can also aid students in understanding the underlying principles of effective writing and provide them with guidance for improving their writing skills [39,49,50]. There has been a significant increase in scholarly investigation about the influence of AI writing tools on the writing proficiency of students, like Grammarly, QuillBot, Wordtune, Iwrite, Pigai.com, etc. While a number of studies have demonstrated favorable results, other research has underscored the potential adverse effects.

Every artificial intelligence (AI) writing tool possesses distinct strengths and weaknesses. Therefore, it depends on the content needs and preferences to determine which one is better. Moreover, AI writing tools have proven to be beneficial in the realm of English writing instruction and learning. However, it is imperative for both researchers and students to engage in critical and creative thinking while also acknowledging the possible challenges and ethical concerns associated with these tools.

# 3. Methodology

## 3.1. Research Design

In order to investigate the research inquiries, a qualitative methodology was applied, specifically employing a case study approach. The case study methodology involves conducting interviews with EFL teachers experienced with AI writing tools. The study aims to explore in depth the types of AI writing tools used by EFL teachers, as well as their perceptions about the impact of these tools on students' writing quality.

## 3.2. Sampling

The present study was conducted in Chinese vocational and technical colleges, and the data were obtained mainly from one-on-one semi-structured interviews. In order to get a general understanding of the utilization of AI tools in Chinese vocational and technical colleges and the perceptions of EFL teachers' experiences or practical involvements with AI tools, purposive sampling [51] was conducted based on the following criteria: (1) the participants must be engaged in using AI writing tools in their teaching practice; (2) the participants must be engaged in English writing teaching in China's vocational and technical colleges; and (3) the participants must be willing to share their perspectives on using AI in English writing. As such, ten English teachers, a sample size satisfactory for qualitative saturation, were recruited for the study with informed consent. It is found that the respondents are between 31 and 40 years old, holding either a master's degree or a doctoral degree (**Table 1**). Most of them have been teaching English for more than 2 years, and half of the respondents have more than 3 years of English writing teaching experience. Written informed consent has been collected before the study to ensure the ethical considerations of educational research were met.

## 3.3. Data Collection

Since the study aimed to investigate the AI tools used by EFL teachers in their teaching of writing and what perceptions the teachers have, individual semi-structured interviews served as practical data collection instruments as they allowed the researchers to understand the participants' experiences and perceptions. After determining the interviewees, the researchers drafted and modified the interview protocol and interview consent form several times in order for the interview to be conducted successfully. Sample questions included: "What AI tools do you usually use in teaching English writing?", "How do you usually use these tools?", "What features of these tools do you specifically find useful?", "How do you think of the use of these tools in your teaching process?", and "What are the advantages and disadvantages of using these tools?" With the consent of the participants, the whole process of each interview was recorded both in video and audio. After the interviews were completed, they were transcribed and then translated into English, and the materials were processed to be readable and understandable for further analysis.

**Table 1.** Participants' demographic information.

| Participant Teacher | Gender | Age (Years) | Qualification | Teaching Experience (Years) | Experience in English Writing Teaching (Years) |
|---|---|---|---|---|---|
| T1 | Male | 31 | Master | Length > 10 | 1 < Length ⩽ 3 |
| T2 | Male | 33 | Master | 5 < Length ⩽ 10 | Length > 5 |
| T3 | Female | 38 | Master | 2 < Length ⩽ 5 | 3 < Length ⩽ 5 |
| T4 | Female | 40 | Master | 5 < Length ⩽ 10 | 1 < Length ⩽ 3 |
| T5 | Female | 35 | PhD | Length ⩽ 2 | Length ⩽ 0.5 |
| T6 | Female | 32 | Master | 2 < Length ⩽ 5 | 3 < Length ⩽ 5 |
| T7 | Male | 34 | Master | 5 < Length ⩽ 10 | Length > 5 |
| T8 | Male | 36 | Master | 2 < Length ⩽ 5 | 3 < Length ⩽ 5 |
| T9 | Male | 40 | PhD | 5 < Length ⩽ 10 | 1 < Length ⩽ 3 |
| T10 | Female | 39 | Master | 5 < Length ⩽ 10 | 3 < Length ⩽ 5 |

## 3.4. Data Analysis

This study adopted thematic analysis, which Braun and Clarke (2006) described as useful for the analysis of qualitative data. The researchers chose Nvivo Plus 12 as the tool to analyze the collected data, and the data processing procedures were as follows:

- Step one: Researchers uploaded the transcripts, read the materials several times, and generated the first ideas about possible themes in the word cloud and word frequency list. More precisely, the words not used, like the names of research-

ers and interviewees, were added to the stop list. This could help researchers find out the frequency of the words that appeared in the transcripts, thus helping them judge and choose the proper words as potential theme words.

- Step two: With the help of a word cloud and a word frequency list, preliminary codes were developed, grouping related words and phrases in line with the research criteria. The researchers tried two methods to code, namely auto-coding and range coding. However, the codes selected by auto-coding were not appropriate, so the researchers used range coding instead.

- Step three: Based on the preliminary codes, the researchers classified codes into potential themes and compared the codes in different transcripts, identifying if any relationships or patterns appeared. After the potential themes were generated, the researchers compared the themes suggested from the literature review and checked if the two kinds of themes were related.

- Step four: The researchers named the different themes and established a set of categories from these grouped codes.

- Step five: After coding all the transcripts, the re-

searchers observed different codes and the related references to get the overall picture, analyzed the data from different perspectives, and produced results based on the themes found.

# 4. Findings

## 4.1. AI Writing Tools Used by the EFL Teachers

The participant EFL teachers in the study used various AI writing tools or AI-powered platforms in their teaching, which are mainly Grammarly, Pigai.com, WPS, Baidu Wenku, and Iwrite. The selection and utilization of these AI tools were based on their individual characteristics and capabilities, which were in line with the specific requirements of their instructional settings and goals. In order to offer a comprehensive yet concise summary of various AI writing tools used by the participants, the researchers structured the information in a lucid and enlightening manner. **Table 2**, which functions as a thorough inventory, documents the AI writing tools utilized by these EFL teachers. The table concisely presents the names and functions of the AI tools, providing a glimpse into the current state of AI implementation in EFL writing at Chinese vocational and technical colleges.

**Table 2.** AI writing tools used by the selected EFL teachers.

| AI Writing Tools Used/ AI-Powered Platforms | Functions for Use |
|---|---|
| Grammarly (https://www.grammarly.com/) | ◆ Checks for grammatical errors, spelling errors, and incorrect use of punctuation marks.<br>◆ Improves the structure of the article, making it more logically coherent.<br>◆ Offers a free trial, corrects grammatical errors.<br>◆ Indicates wrong words, omissions or misspellings by drawing red lines to remind users.<br>◆ Allows users to adjust and polish their writing based on different styles.<br>◆ Provides suggestions for revising expressions and automatically generates revised text. |
| Iwrite (https://iwrite.org/) | ◆ Achieves more accurate composition correction and improves students' writing level, especially in terms of sentence structure.<br>◆ Provides sentence patterns for reference and reduces teachers' burden. |
| Pigai (https://pigai.com/) | ◆ Identifies and corrects errors in students' writing, such as word spelling and punctuation.<br>◆ Provides suggestions for modifying sentence structures and syntax.<br>◆ Grades students' writing based on predefined criteria.<br>◆ Offers learning materials for students to study independently.<br>◆ Allows students to receive feedback and make modifications multiple times, contributing to continuous improvement in writing skills. |
| Baidu Wenku (https://wenku.baidu.com/) | ◆ Provides suggestions for content refinement and overall framework design.<br>◆ Categorizes topics and information, including some punctuations. |
| WPS (https://www.wps.com/) | ◆ Polishes paper or document writing.<br>◆ Provides suggestions on styles or revisions.<br>◆ Offers different styles of writing, adjusts the writing accordingly and optimizes the content based on input text. |

Based on the codes generated from the transcripts, first-order codes developed into second-order codes, which were then aggregated mainly into the five themes as below. Each of the five themes is discussed in the following parts, with quotes to offer evidence of the coding scheme.

### 4.1.1. Functions of AI Writing Tools Used by EFL Teachers

As for the functions of AI writing tools used by EFL teachers, the researchers developed some second-order codes from first-order codes, namely, content, correction, grammar, punctuation and spelling, structure, and styles of writing (see **Table 3**). According to the participants, it is obvious that the EFL teachers use different tools for certain purposes. All five aforementioned tools can assist with writing structure, such as helping design the framework, providing sentence patterns and transitional devices, and suggesting coherence as well as logic. In terms of content, almost all the AI writing tools (Grammarly, WPS, Baidu Wenku, and Iwrite) they use can help generate detailed and systematic content on certain topics, categorize the related content, and optimize the existing content. However, opinions vary regarding Grammarly. Some participants pointed out Grammarly did not have the function of editing writing content, while others claimed Grammarly helped adjust and polish the writing. The existing differences may result from their familiarity with the use of the mentioned AI tool. As for grammar, punctuation, and spelling, Grammarly and Pigai are utilized. Beyond that, EFL teachers would use Pigai.com for error correction, which is its main function, and Grammarly to identify styles of writing, better modifying and polishing certain genres of writing.

**Table 3.** Functions of AI writing tools used by EFL teachers.

| Second-Order Codes | First-Order Codes | Example Quotes |
|---|---|---|
| Content | Baidu Wenku | I will explore related content on the AI, and then the AI will list out a *very detailed and systematic content* for you, telling you how it is in a certain area, and it's very clear. [T3]<br>…For example, linguistics, if I input "a framework of a linguistics article", it will tell me the origin of language, the pragmatic function, semantic function and so on. It will *categorize* them, including some punctuations. [T4]<br>…it has helped you a lot in *content refinemen*t… [T5] |
| | ChatGPT | ChatGPT is a new AI writing tool that can *help generate opinions*, … [T2] |
| | Grammarly | I *haven't found* Grammarly's tips for editing writing content yet. [T1]<br>Grammarly *does not* have the function of polishing articles and making them better expressed. [T6]<br>…make it do the revision, it *will help* us adjust and polish the writing. [T7]<br>…that could help me with my homework revision. [T3]<br>…word selection, … [T10] |
| | Iwrite | …achieve *more accurate* composition correction function and students' writing level can be improved, … [T8] |
| | WPS | …it *showed some related texts* of the Party membership application, and I can click to view. [T5]<br>And as far as I'm aware, when I input some text, click on it, and let WPS *optimize* it, content will be generated immediately. It's a new text optimized based on the input text. [T6]<br>It's the *polishing* function that you mostly use. [T9] |
| Correction | Pigai | Students' writing errors can be corrected. [T2]<br>The main function of Pigai.com is error correction. [T4]<br>Pigai.com has prompts for errors. [T5]<br>Its most basic function is error correction. [T5] |
| Grammar | Baidu Wenku | It was more like providing a proposal for us. Or maybe I *didn't* specifically use it for revision… [T3]<br>…I *didn't* notice it…. [T3] |
| | Grammarly | Grammarly can help them write sentences that are at least grammatically correct. [T1]<br>In terms of syntax, Grammarly can help me, Grammarly will help me *change sentence patterns*. [T3]<br>…it will also *indicate the wrong words*, that is, it will indicate *the omissions or misspellings* by drawing red lines to remind you… [T3] |
| | Pigai | …suggestions for *syntax* modifications made… [T2] |
| | WPS | I don't think the *words* have been changed specifically, but actually they have been changed. [T3] |

**Table 3.** *Cont.*

| Second-Order Codes | First-Order Codes | Example Quotes |
|---|---|---|
| Punctuation and spelling | Grammarly | Grammarly will also prompt the users for *spelling errors and incorrect use of punctuation marks.* [T1]<br>…but *punctuation*, … [T3] |
| | Pigai | …word *spelling* and *punctuation*… [T2] |
| Structure | Baidu Wenku | …it has helped you a lot in … the *overall framework* design [T3] |
| | Grammarly | Grammarly still has an impact on the *structure of the article*, making the article more logically coherent. [T1]<br>*sentence pattern* [T3]<br>…the *conjunctions*, to which it will make a lot of changes. [T3]<br>…the *coherence between sentences*. [T3] |
| | Iwrite | Iwrite can improve students' language, such as *sentence structure*, and it will provide sentence patterns for reference. [T1] |
| | Pigai | Pigai.com has prompts for errors in … *logic*. [T2] |
| | WPS | the syntax, and the *transitional devices* [T3] |
| Style of writing | Grammarly | Is it academic writing or business correspondence or ...... legal paperwork? You need to *pick the style*, after picking, it will modify and polish the writing for you. [T3]<br>…there are like ten or more writing styles that it offers to select, for the writing styles, Grammarly has so many, including the ones that we've never thought of [T3] |
| | WPS | WPS AI tools have this function, and it will specifically tell you the *different styles of writing*. [T3]<br>…you tell the AI which style of writing you would like to apply; it'll adjust the writing for you with that style. [T3] |

## 4.1.2. Usage Scenarios of AI Writing Tools

In EFL teaching settings, there are different scenarios to employ AI tools (see **Table 4**). According to the interviews, WPS is only used when writing teaching materials for courses, and Baidu Wenku is generally utilized in academic writing. On the contrary, the utilization of Grammarly and Pigai appears on many more occasions, such as online writing practice after class and writing competitions.

**Table 4.** Usage scenarios of AI writing tools used by EFL teachers.

| Codes | Scenarios | Some Quotes from References |
|---|---|---|
| Baidu Wenku | Articles and theses writing | I will also use it when I'm writing articles and theses. [T3] |
| Grammarly | Writing practice online after class;<br>Assignments and papers writing;<br>Preparing teaching materials | We ask students to practice writing on the website after class. [T1]<br>…we were writing assignments and papers, and we were in desperate need of an application that could help us quickly correct our grammatical errors. [T5]<br>…mainly use it for preparing teaching materials [T7] |
| Pigai | Writing competitions;<br>Writing practice online;<br>Paragraph revising | I have used Pigai.com for a period of time because of the writing competition on Pigai.com [T3]<br>I assigned homework to students and students practiced writing on it. [T2]<br>…when I was a graduate, because my tutor asked me to revise my paper on it, requiring me to revise each paragraph to a score of 90 or above. [T8] |
| WPS | Writing slides for courses | Generally, I use it only when I am making my PPT, writing my slides for the courses. [T10] |

## 4.2. Benefits of AI Writing Tools

According to the themes, relevant codes, and references, EFL teachers in Chinese vocational and technical colleges have varied perceptions toward the AI writing tools or AI-powered platforms mentioned above. Except for their functions and usage scenarios, participants' perceptions of their benefits, challenges, and recom- mendations for future use could be found. Therefore, the researchers placed a particular emphasis on the distinct facets of benefits, challenges, and recommendations while analyzing the interview transcripts to explore the teachers' perceptions of AI writing tools.

When it comes to the benefits of AI writing tools used by EFL teachers, the researchers established some

second-order codes, which were accuracy, content, convenience, easy of use, horizon expanded, low-cost, students, workload reduced, and reliability. (see **Table 5**). In their opinions, almost all the AI writing tools (Grammarly, WPS, Baidu Wenku, and Pigai) are easy to use with easy access to materials, a friendly interface, and no special training requirement for using them. Some of them simplify the operation by correcting submitted texts as well as generating revised texts (Grammarly) and assigning homework as well as grading (Pigai) for users' convenience. Besides, some tools (Baidu Wenku) could provide more accurate content compared to the submitted writing; some (Grammarly) could generate more faithful texts; and some could provide feedback more reliably and authoritatively than teachers do. Moreover, with low-cost AI tools, users can acquire more knowledge because everything will be shown in more detail. As for students, especially those with average English proficiency, AI tools allow them to learn independently in class or after class, get timely feedback, and revise their writing in time. For teachers, as some tools (Iwrite and Pigai) can automatically correct writing and provide timely feedback, they help teachers greatly improve teaching efficiency and reduce workload.

**Table 5.** Benefits of AI writing tools used by EFL teachers.

| Second-Order Codes | First-Order Codes | Some Quotes from References |
| --- | --- | --- |
| Accuracy | Baidu Wenku | …it will be more _accurate_. [T3] |
| Content | Grammarly | Grammarly is more _faithful_ to the original text. [T8] |
| Convenience | Grammarly | …providing many people, including students, with the opportunity to use it _conveniently_. [T2] |
| | | …if you _double-click_ on the prompts, you're accepting its suggestions to revise the expressions, and it will correct them for you. [T1] |
| | | It will _automatically_ generate a new revised text for you. [T7] |
| | Pigai | Teachers can also _assign homework_ to students on it. [T8] |
| | | …for example, we are tutoring students in Test for English Majors Band 4, he said that you ask the students to submit their assignments on Pigai, and when you mark their writing assignments, you can select the style of Test for English Majors Band 4, and it will _target_ the writings of certain exams. [T10] |
| | WPS | WPS is one of the software we use in our _daily_ work, that is, you basically use it whenever you need to prepare for class, or do anything else. [T4] |
| Easy of use | Baidu Wenku | Baidu Wenku becomes the easiest way to _find materials_, with an AI pop-up interface on the side, letting us, enter some instructions. [T1] |
| | | …but now it just pops up automatically, making it easier for you _to find_ the AI feature. [T2] |
| | | …the current designs of the interface make the feature a little bit more obvious for you _to discover._ [T7] |
| | Grammarly | …the operation interface is also very _friendly_ and requires no special training. [T1] |
| | Pigai | It's easier for you to use Pigai…you ask the students to submit their assignments on Pigai, and when you _mark_ their writing assignments, you can select … it will target the writings of certain exams. [T6] |
| | WPS | …but now it shows directly and it's in color, popping up immediately so that you can _locate_ it very quickly. [T5] |
| Horizon expanded | Baidu Wenku | It will help me _open my mind_. [T3] |
| | | I cannot completely know all the things, …But using Baidu Wenku AI tools, everything will be _shown in more detail._ [T3] |
| Low-cost | Grammarly | The biggest advantage of Grammarly is that it is _free to use_. [T2] |
| | WPS | …it also requires a membership fee; I'm not saying it costs nothing, but its membership fees, as it is a China-made software, it _costs less_ because we pay the fee from the beginning. [T7] |
| Students | Grammarly | Especially for _students with average basic skills_, Grammarly is a very good writing learning tool. [T8] |
| | Pigai | …it allows students to learn _independently_ on it. [T2] |
| | | …students can reflect on their own writing and revise the part they have not written well. [T9] |
| | | Students complete writing tasks on it and can _revise it in time_. [T2] |
| | | …students can get feedback from Pigai.com and _make modifications for many times_ if they want. [T4] |
| Workload reduced | Iwrite | I initially had an idea, hoping to use Iwrite to _automatically correct students' English writing_, and then reduce my burden. [T5] |
| | | …teachers sometimes cannot give _timely feedback_ on students' writing, or may _not necessarily find all_ the errors in students' writing, but Iwrite can do so in a timely manner and help teachers _improve teaching efficiency_. [T3] |
| | Pigai | …it can help reduce some of the burden of _correcting writing_ and provide students with _timely feedback_. [T2] |
| | | Pigai has helped reduce, lightened the workload for everyone. [T6] |
| Reliability | | I think smart tools are more _reliable and authoritative_ than teachers. [T7] |

## 4.3. Challenges of AI Writing Tools

Though EFL teachers benefit a lot from using AI tools in teaching, they also experience many challenges in the process (see **Table 6**). This study categorizes the mentioned challenges into these codes: content, data organization, fee, structure, register, web pages, sources/academic integrity, school, teachers, as well as students. All participants think the output generated from AI tools was not necessarily what they wanted or did not correspond with what they meant in the beginning. Three (Grammarly, Pigai, and WPS) of the five AI tools were mentioned for their mechanization, either in polishing writing, suggesting writing logic issues, or improving sentence structure. Some tools (e.g., Pigai) are considered time-consuming because the users need to complete multiple tasks before logging in, organize too much writing data to input, and save the web pages intentionally soon afterward. Similarly,

some tools (Grammarly and IWrite) seem to be money-consuming, especially for users without special funds to pay for them. However, some participants see Grammarly differently, suggesting the biggest advantage of Grammarly is that it is free. Converse opinions may depend on different using experiences. Apart from the above challenges, using AI tools in EFL classrooms is much more arduous for schools that are located in relatively backward areas and for students who study in relatively underdeveloped areas or without portable electronics. Teachers who stick to traditional paper-based teaching, as well as students without average English proficiency or students showing no enthusiasm for English, also seem to find the utilization of AI tools challenging. Furthermore, some participants indicated there has been a serious problem with academic integrity since few AI tools show the information sources clearly while proving information.

**Table 6.** Challenges of AI writing tools used by EFL teachers.

| Second-Order Codes | First-Order Codes | Some Quotes from References |
|---|---|---|
| Content | Grammarly | The disadvantage is that the *article polishing function* needs to be improved. [T7]<br>…there are sometimes it is *not corresponding* with what we mean in the beginning. The meaning of the revised expression even contrasted sharply. …and then we check after it makes the correction, and we find out what it says doesn't correspond to the meaning I try to express. [T3] |
| | Pigai | …it also has shortcomings; some things are *more mechanical*. Its suggestions for modification may not necessarily be suitable... [T4]<br>Pigai.com still needs to be strengthened logically. Because it is a machine after all, it *cannot give accurate opinions* on writing logic issues. [T3] |
| | WPS | …sometimes the output is *not necessarily what I want*, … [T2] |
| Data organization | Pigai | …as I have to organize data of many students to input, I *haven't had time* to work on that yet. [T8] |
| Fee | Grammarly | I would use it less frequently because it *charges for using.* [T8]<br>I did not pay for membership; its membership fee is fixed to pay. [T9] |
| | Iwrite | Iwrite is a *paid* writing correction platform of Foreign Language Research Press, so we cannot afford to use it. [T10]<br>…we do not have special funds to pay for the use of Iwrite. [T1] |
| Structure | Grammarly | I feel that in terms of improving sentence structure, the functions are *not that good* and *not that smart*. [T5] |
| Register | / | …but actually it is *harder* for us to use these AI writing tools. It requires you to scan a QR code to add a Wechat contact, or follow a certain subscription account, or follow a certain Wechat account, and then give you a one-time chance to get an answer. It's just a process of scan and answer and scan… [T8] |
| Web-pages | / | After registering, it will be fine if I have saved the web-pages, but I have two computers, one in the office and one in the dormitory, then I may *fail to save* the web-pages. [T3] |
| Sources/ academic integrity | / | …all of the information sources they use, when the content comes out, it *never tells us and names the sources.* [T6]<br>…we should respect the person who first put forward this viewpoint, but our AI tools *make no mention* of these. [T2] |
| School | / | …our school is located in a *relatively backward* area. [T1] |
| Teachers | / | Teachers' writing teaching basically still uses *traditional paper-based* writing teaching. [T6] |
| Students | / | The first reason is that higher vocational students *do not have the basic skills* to complete many writing tasks independently. [T8]<br>…most students come from *relatively underdeveloped* areas, too. [T10]<br>There are still fewer students who have *laptops* or can easily use Grammarly to check errors; therefore, for my students, the usage of Grammarly is not high. [T6]<br>For students *with weak foundations*… [T3]<br>Students in our school are *not very enthusiastic* about learning English. [T4] |

## 4.4. Recommendations for AI Writing Tools Utilization

In terms of the recommendations for AI writing tools utilization, researchers developed codes like courses and lectures, guidance, teaching English writing, students, and things that should be paid attention to (see **Table 7**). With the teaching experiences and practical involvements with AI tools, participants suggest users should hold a positive attitude toward the relevant training courses and lectures on the utilization of AI tools. Attending these lectures, users could gain more insights into AI tools and may use them with ease. For teachers who may still be in the process of learning how to use AI tools themselves and are unable to provide their students with specialized coaching or guidance on effective utilization, the participants advise them to manage their own learning and engage in discussions with their students. Furthermore, when teaching English writing, EFL teachers should remember that AI writing tools enhance our thinking capabilities. Teachers should see what AI tools provide as a hint, compare content generated by different tools, and use it only as a reference. For students, it's recommended to use AI tools after class, as the tools assist their independent learning. AI tools could provide thoughts, frameworks, and related content for reference while they are in the learning process of writing. Most importantly, all participants tried to warn AI tool users, while utilizing AI tools, to avoid overusing AI tools or becoming dependent. Instead of losing autonomy and innovation, users should keep thinking critically and creatively. Meanwhile, users should increase awareness of laws and regulations, show respect for other people's copyrights, and say no to plagiarism.

**Table 7**. Recommendations for AI writing tools utilization.

| Codes | Implications | Some Quotes from References |
|---|---|---|
| Courses and lectures | **Positive attitude** held towards relevant training courses and lectures | I'll be there, and I *do want* to be there if there's any opportunity like this. [T3] <br> Yeah, we can attend these lectures or courses, just *to get more insight*, but I'm not sure how specialized these lectures or courses are. [T4] <br> …after you go to these lectures or courses, you can *do a walkthrough and test it out* for yourself. [T6] |
| Guidance | No specialized coaching or guidance to students on how to use AI tools more effectively as teachers themselves are still in the process of figuring out, but have the intent to learn and discuss with students. | Provide guidance to students on methods. After giving feedback from AI intelligent tools, teachers can *make a comparison* between AI feedback and teacher feedback. [T1] <br> …we can even *discuss* with them, … [T7] |
| Teaching English writing | Using AI writing tools to add more dimensions to our thinking, see what they provide as a hint, compare, and use it only for a reference. | You can use what they provide *for a reference*, but you can't overuse them, or you can't use them excessively. [T2] <br> …consider it as a hook *leading* you to something, … [T8] <br> …you must have your own thinking, don't lose the ability to think, and *don't completely follow the instructions* it provides to write… [T1] <br> …at least two for *comparison*, to see the similarities and differences, in this way at least you are aware of the fact that the answers to the question are not necessarily, exactly the same; it can be *multi-faceted*. [T5] |
| Students | Using AI writing tools after class and referring to the thoughts and framework provided while learning to write. | We recommend students to use some AI tools *after class* [T7] <br> I actually recommend my students to use, first of all, as they are now in the initial stage of learning to write; especially the *academic writing*, of course, students can also refer to what the AI writing tools provide when it comes to the *daily writing*, … [T8] <br> …personal academic writing, I would recommend that they use these AI writing tools, mainly because we need these tools to *provide thoughts*, the *framework*, what are the points that we can discuss, and then we go through the points that it provides, and then we pick up the points that we've chosen to discuss. [T4] |
| Things should be paid attention to | Overuse; Critical thinking; Academic integrity; Plagiarism | You have to *judge* whether the opinions it puts forward are correct [T10] <br> I don't recommend that they utilize these tools in the extreme. *There's no point in copying* all the points provided by these tools. [T5] <br> When it makes them become *dependent*, as in, if they don't use it right, they become dependent on using it and they will *lose the ability to think* for themselves. And that's a very, very big problem in education, that's a red flag of danger, if people *don't have a sense of autonomy* [T3] <br> AI tools will actually *limit the innovation* of humans. [T7] <br> …if we're going to use something that the tools provide, we should also increase our awareness of *laws and regulations*, and show respect for other people's *copyrights* and something like that. [T6] <br> …once you have *plagiarized*, it's a very serious problem. [T2] |

# 5. Discussion

This study explored the adoption and perceptions of AI writing tools among EFL teachers in Chinese vocational and technical colleges, highlighting both their pedagogical benefits and practical challenges. Findings show that teachers widely use AI tools like Grammarly, Pigai.com, Baidu Wenku, WPS, and Iwrite to support writing instruction. These tools were primarily employed for improving grammar, structure, coherence, and content generation. The most cited benefit was their ability to provide timely, automated feedback [25], which is consistent with previous research on the instructional value of AWE systems [35,36]. In particular, tools such as Pigai.com were praised for their iterative feedback functions that supported students' independent revisions, aligning with theories of formative assessment and learner autonomy [16,23].

Furthermore, AI tools helped ease the workload of teachers who often manage large student cohorts and lack the time to deliver detailed written feedback. Teachers reported that such tools allow for more efficient classroom management and freed them to focus on higher-order aspects of writing, such as argument development and genre awareness. These outcomes echo Koltovskaia's [10] findings on behavioral and cognitive engagement with AWCF and support Carless and Winstone's [16] model of feedback literacy, where technology serves as an enabler of effective learning environments. However, participants also expressed that AI-generated feedback lacked nuance and sometimes misaligned with students' communicative intentions, especially in content accuracy or logical cohesion. This reinforces concerns in the literature about the over-mechanization of feedback and the risk of miscommunication in automated systems [10,28].

Teachers' reflections highlighted a tension between the advantages of automation and the pedagogical value of teacher-led feedback. Some expressed uncertainty about their shifting role—now more of a guide or evaluator of AI suggestions than a sole provider of feedback. This evolving role necessitates a rethinking of teacher competencies in the AI era, echoing the call for expanded teacher feedback literacy that includes managing human–AI interaction and fostering students' critical engagement with machine-generated suggestions [16,20]. Moreover, as noted in several interviews, AI tools cannot replace the cultural, contextual, and interpersonal dimensions that human teachers bring to writing instruction. At the same time, accessibility issues emerged as a significant barrier. Students from rural or under-resourced areas often lacked the digital literacy or technological infrastructure needed to fully benefit from AI tools [22]. This digital divide raises equity concerns and underlines the need for inclusive implementation strategies [34,42]. Additionally, challenges such as content inconsistency, insufficient attribution of sources, and potential plagiarism risk reinforce the importance of critical digital literacy—for both students and teachers.

The findings of this study suggest several practical implications for EFL teachers seeking to integrate AI writing tools into their classroom practice. First, while AI-powered platforms such as Grammarly and Pigai.com can offer significant support in reducing workload and providing timely feedback, teachers must approach these tools with informed skepticism. Rather than relying solely on automated outputs, educators should critically evaluate the accuracy and appropriateness of AI-generated feedback and help students develop the skills to do the same. This reinforces the teacher's evolving role from a direct corrector to a facilitator of critical engagement and reflective writing practices. Second, to fully harness the potential of AI tools, teachers should develop their own feedback literacy in tandem with their students. This includes not only understanding how these tools function but also designing classroom activities that encourage comparison between AI feedback and teacher feedback. For instance, asking students to reflect on revisions prompted by AI tools and justifying their changes can deepen both linguistic and metacognitive awareness. Teachers should also be encouraged to participate in professional development workshops or collaborative learning sessions to share strategies and challenges associated with AI use. Third, teachers working in under-resourced contexts must be mindful of the accessibility and affordability of certain tools. Providing alternative solutions, such as free platforms or low-tech options, can help ensure more equitable use of AI-assisted instruction. Finally, teachers should actively guide discussions around digital ethics, including source attribution, responsible AI use, and avoiding overreliance on automation. Encouraging students to treat AI suggestions as refer-

ences rather than final answers will cultivate greater critical thinking and academic integrity in the writing process.

## 6. Conclusions

This study explored the types of AI writing tools used by EFL teachers and their perceptions of these tools in vocational and technical colleges in China. The findings indicate that AI writing tools offer multiple pedagogical benefits, including reducing teacher workload, delivering timely feedback, and supporting students' independent learning. Teachers generally expressed positive attitudes toward the integration of these technologies, acknowledging their potential to enhance writing instruction. However, the study also uncovered several challenges, such as concerns about content accuracy, accessibility, overreliance on automation, and the ethical use of AI-generated content. Overall, teachers viewed themselves as needing to maintain an active role in guiding students' writing development, rather than relying solely on automated feedback.

Despite these insights, the study is not without limitations. The participant sample, although sufficient for qualitative depth, was limited to a specific group of teachers within a particular institutional context, which may affect the generalizability of the findings. Moreover, the study focused exclusively on teachers' perspectives, without incorporating student views or classroom observation data. Future research could expand to include student experiences, explore classroom interactions involving AI tools, and adopt longitudinal or mixed-methods designs to examine how AI-assisted writing instruction evolves over time. Additionally, studies might investigate how teacher training programs can better prepare instructors to critically and effectively use AI in writing pedagogy.

## Author Contributions

Conceptualization, X.D.; methodology, X.D. and Y.X.; software, X.D. and Y.X.; validation, S.H. and N.A.S.; formal analysis, X.D. and Y.X.; investigation, X.D. and Y.X.; resources, X.D.; data curation, X.D.; writing—original draft preparation, X.D. and Y.X.; writing—review and editing, S.H. and N.A.S.; supervision, S.H. and N.A.S.; project administration, X.D. All authors have read and agreed to the published version of the manuscript.

## Conflicts of Interest

The authors declare no conflict of interest.

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