

Overcoming Writing Challenges: The Use of Ai-Powered Writing Assistants and Online Collaboration Tools in Foreign Language Education

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ABSTRACT

Writing is a mental activity that requires a greater focus and creativity to be able to deliver a meaning message that emerges from the mind. Sometimes, foreign language learners face the challenge of reflecting their thoughts in writing using their target languages. Nevertheless, this paper aims to investigate the perceptions of language students on the effectiveness of AI-powered assistants and online collaboration tools in tackling writing challenges in foreign language education. Compared to the traditional method of enhancing writing proficiency, integrating AI-powered assistants and online collaboration tools offers many benefits, as revealed in this research. These benefits include grammar and spelling correction, motivation and engagement, writing style suggestion, vocabulary enhancement, collaborative writing and feedback. The research integrated the use of mixed methodology to execute its main objective. While an online questionnaire was used to collate data from the 30 purposively selected students, a semi-structured interview was conducted to collate the qualitative data. Nevertheless, the quantitative analysis from the quantitative analysis showed that grammar is the most common writing challenge in foreign language education. The evaluation from the respondents' pre- and post-course writing samples showed that some extent, these technological tools can help tackle writing challenges.

Keywords: Writing, AI-powered Assistants, Online Collaboration Tools, Foreign Language Education, Challenge.

1.0 Introduction

While communication can be verbal or written, it requires a good knowledge of a particular language to communicate effectively. As such, being proficient in either of the two modes of communication places one in a better position for effective communication of his or her thoughts. Regarding writing, the mental activities involved allow the writer to effectively communicate his thoughts without having to deal with writer's block.

Writing is among many basic language skills for a successful knowledge of a foreign language. As such, teaching writing skills requires an effective and practical teaching method surpassing the conventional method. With the conventional teaching method, foreign language learners are limited to the instructional teachings the language class teacher offers them. According to Abedi et al. (2019) this method seems less effective and reduces the creativity tendency of the students in producing their message or

thought in writing. Additionally, this teaching method has less chance of tackling some writing challenges students face.

However, with the vast spread of technology in foreign language education, many digital tools have been developed to tackle some writing challenges students face. Students are no longer dependent on what the teacher teaches regarding writing proficiency, and they easily improve their writing skills by using digital tools. In foreign language learning, students often encounter challenges when developing their writing skills. These challenges include vocabulary use, spelling and punctuation, grammatical accuracy, cohesion and coherence, revision and editing, and cultural sensitivity. According to Adas & Bakir (2013), some of these challenges are caused by learners' first language (learners' native languages might differ from their target languages).

In terms of the enhancement of several language skills like writing, several studies (Abedi et al., 2019; Lewis, 1998; Lin et al., 2022; Sandolo, 2010 etc.) have attested to the effectiveness of various technological tools such as AI-powered assistants and online collaboration tools. In foreign language education, these technologies support learning by providing students with real-life writing or practical writing experience. Online collaboration tools such as Slack, notion, Google Docs, and Microsoft Word, amongst others, are also technologies that help to facilitate writing proficiency by allowing collaboration and engagement among learners, which are major factors for writing proficiency development. These technologies' important features are their ability to tackle some language challenges, including writing proficiency. This study of these technological tools emphasises how their integration can tackle some of the identified writing challenges in this research.

2.0 Literature Review

This section explored works of various scholars in regards to writing proficiency and teaching writing, challenges in writing, and technological tools such as AI-assisted tools and collaborative tools for writing proficiency improvement.

2.1 Traditional vs Modern method of Teaching Writing

Writing as a mental and practical activity in language education has evolved in its teaching and learning aspects. The traditional model of teaching writing proficiency only emphasized correctness, coherence and clarity of written expression. According to Raimes (1991), the traditional method of teaching writing proficiency is characterized by a teaching approach that only focuses on linguistics and rhetorical forms. Linguistics and rhetorical form methodology deal with linguistics accuracy and rhetorical strategy to produce meaningful and effective written communication. Students are taught the rules of grammar, sentence structure and punctuation, including rhetorical strategies like narrative, argumentative and persuasive structure. A study by Ekmekci (2017) argued that in this teaching method, teachers are responsible for drilling the students with numerous writing exercises ranging from essay writing, research writing, and report writing to reinforce language rules and rhetorical strategies.

One major drawback of this method of teaching writing is its product-oriented nature. The method only focused on students' final written piece rather than the process

involved in producing it, hence decreasing the chances of students' writing improvement. Another challenge is the lack of creativity in this teaching method. In the traditional method, students are tasked with memorization of different writing rules and strict application of these rules instead of being creative, Kumar (2020). In foreign language education, Reichelt (2012) emphasized writing instruction as a key challenge. However, the type of teaching method used in instructing the students can influence their writing proficiency. Given the loopholes in the traditional teaching method, various methods have emerged in the domain of language education regarding effective teaching of writing. Most, if not all, of these approaches are affiliated with technology integration, giving rise to modern writing teaching methods. In this current method, language teachers leverage technology in instructing students and practically enhance their writing proficiency.

A study by Herrera Ramírez, Y. E. (2013) explored using collaborative writing technology to improve students' writing skills. The major finding of this study revealed that students' writing skills improved after using 'Storybird' (a web 2.0 technological tool). A similar study by Sulistyo et al. (2019) used blog-assisted language learning to teach writing skills and enhance learners' writing skills. The investigation's findings claimed that learners' writing performances improved greatly after being taught writing skills using a blog-assisted language learning tool.

An important advantage of the modern method of teaching writing is that learners are opportune to utilize various technological tools to practice their writing skills and improve their writing proficiency. Language teachers can also leverage these tools in teaching students and engaging them with motivating writing tasks. According to this, students are engaged in real-life writing tasks, which evokes creativity. Exploring various technological tools and area resources for Teaching English to Speakers of Other Languages (TESOL), Wang et al. (2024) emphasized the effectiveness of blended learning, wherein both the traditional and modern teaching methodologies are used in teaching writing proficiency. The investigation insinuated that despite the traditional methodology's drawbacks, blending it with the modern method can significantly enhance students' writing skills.

Generally, there are two prominent reasons for the emergence of modern teaching of writing. The first was due to some drawbacks in the traditional method, which evoked the need for other approaches, and the second was the wide spread of technology in the language domain. The two teaching methods have various advantages regarding improving students' writing proficiency. However, as suggested by Wang et al. (2024), combining the two methods avails the students to improve their various language skills, including writing.

2.2 Exploring Causes of Writing Challenges in Foreign Language Education

Because of a lack of proficiency, Foreign language learners face the challenge of communicating their thoughts verbally or written appropriately using their target language. In essence, to communicate perfectly, learners need to be proficient in the various language skills of the target language. As one of the major language skills, Sulistyo et al. (2019) maintained that writing activity is a sophisticated activity in foreign language learning. Learners face the challenge of communicating effectively

because of the difference in their L1 (first language) and the target language. Gomaa-Moulds (2010) explained that learners' L1 can interfere with learners' written communication. This stems from the difference in syntax, grammar and other language aspects that are quite different in the L1 and the target language. This paves the way for repetitive mistakes and less progress in learners' writing proficiency. As a means to curtail the interference of L1, Sulistyo et al. (2019) suggested that the teacher must understand and identify the factors that cause this regarding their L1 interference.

Apart from L1 interference, another important writing challenge in foreign language education is the need for proficiency in the target language. Meanwhile, foreign language learners often face grammatical errors, lack of limited vocabulary, and syntax complexities, among others. Limited vocabulary is prominent in terms of major writing challenges. Effective communication requires enough vocabulary at the speaker's disposal in order to effectively communicate his thoughts using appropriate words. Nevertheless, with a limited vocabulary, a language speaker might find it difficult to use appropriate words to convey the intended message. While investigating whether students' vocabulary affects their writing proficiency, Anistasya (2022) maintained that EFL students from SMA Raksana Medan find it difficult to communicate in written English because they have a hard time with English vocabulary. A similar study by Putri et al. (2022) pointed out that a 'lack of vocabulary mastery and language use' can hinder writing proficiency development. The investigation from the scholarly work explored students' perspectives on the difficulties they face in English writing proficiency. The majority consensus among the participants emphasizes their limited vocabulary in constructing sentences grammatically in English.

A study by Raimes (1987) unveiled that a lack of exposure to the cultural nuances of the target language also poses a challenge to learners' writing proficiency. Just like oral communication, written communication is not solely a linguistic exercise but also a cultural one, where language users produce culturally appropriate text. However, a lack of understanding of the cultural nuances can lead a writer to produce text that is devoid of meaning, resulting in miscommunication. This underscores the importance of cultural understanding in foreign language education.

Language learners face writing challenges because of language differences in phonology, vocabulary, syntax, and grammar. Nevertheless, apart from these differences, learners face writing challenges because they need more proficiency in the target language. As stated earlier, effective oral or written communication is only possible if the speaker is proficient in the target language. Meanwhile, Gomaa-Moulds (2010) listed some of the writing challenges EFL Arabic students face as thus, writing organization, redundancy, run-on sentences, Arabic (interference of L1), and punctuation.

2.3 Roles of AI-powered Assistants and Online Collaboration Tools in Writing Education

AI technologies act like humans in terms of providing appropriate services. They are designed to understand and think like humans. In the context of foreign language learning, some AI technologies are designed to facilitate language learning and enhance language skills such as writing, reading, listening and speaking. A study by

Yingsoon (2021) provided strong evidence that AI technology facilitated teaching how to speak the Chinese language. Chinese, which is regarded as one of the most sophisticated languages, can be difficult to speak, especially for learners who are non-native speakers. However, integrating AI technologies provides a practical platform for helping language teachers and students in Chinese language pedagogy.

AI-powered assistants and online collaboration tools are diverse in their features and applications in writing education. For instance, studies have explored the use of specific AI-powered assistants such as Grammarly (Huang & Taylor, 2020), ProWritingAid (Fitria 2023), ChatGPT (Baskara 2023), Quillbot (Nurmayanti & Suryadi 2023), and Ginger software (Swie 2016). Each of these tools brings unique capabilities to the table, enriching the writing-learning experience.

Investigating the effectiveness of Grammarly in enhancing students' writing proficiency, Huang & Taylor (2020) claimed that integrating Grammarly into writing classes can help develop a better writing skill for students and also help alleviate the teaching loads of language teachers. Practical teaching involves engaging the students in several writing activities, wherein the students are expected to apply the basic rules already taught. Also, these written works by students are subsequently proofread (checking for correct grammar, spelling, and punctuation errors) and evaluated for plagiarism. However, Grammarly reduces these loads by identifying correct grammar, punctuation and other basic language errors. On the other hand, Baskara (2023) revealed that ChatGPT, as a writing tool, engages and motivates students. OpenAi extensively trains ChatGPT as an AI-powered tool to generate human-like text based on the prompt. As a trained AI model, it allows individuals to practice their writing skills and further provide assessment in the form of feedback, Yoon (2023). More so, users are also suggested in terms of the tone of their text. Citation and paraphrasing of authors' work are also important hacks in writing, Nurmayanti & Suryadi (2023) maintained that the Quillbot as a writing tool provides students a better way of paraphrasing and citing authors' works without committing plagiarism.

Meanwhile, online collaboration tools such as Slack, notion, Google Docs, and Microsoft Word online, amongst others, are also technologies that help to facilitate writing proficiency by allowing collaboration and engagement among learners, which are major factors for writing proficiency development. Several works on collaborative writing (Tamayo, 2024; Chen, 2020; Brodahl et al., 201; and Elola & Oskoz, 2010). they emphasized task-based activity, which is made possible by collaborative tools. Task-based activities entail situations where students are allowed to collaborate in writing activities to achieve a common goal. For instance, Google Docs, an AI-powered collaborative tool, allows multiple students to work on a single document. Abrams (2019) asserted that Google Docs encourages learner-to-learner engagement. On the other hand, Alkhataba et al. (2018) maintained that although collaborative tools still need to be generally integrated into the educational curriculum, scholars have acknowledged their integration as an effective language-learning method.

The roles of AI-powered assistance and online collaborative tools in writing education extend beyond supporting language learners in writing proficiency improvement. Integrating technologies is an effective means of improving both writing proficiency and other language proficiencies.

2.4 Gap in the Literature

Studies in regards to AI-powered assistance and online collaborative tools have explored their effectiveness and their contribution to the improvement of language proficiency and language learning in general. This research deviates slightly from these existing studies; exploring how these tools can be used in tackling the basic challenges language learners face in using writing.

2.5 Research Questions

- i. What are the writing challenges in foreign language education?
- ii. To what extend can AI-powered assistance mitigate these writing challenges?
- iii. To what extent can online collaborative tools mitigate writing challenges?

3.0 Research Methodology

A. Research Design

The current study adopted the use of a mixed research methodology to explore the perceptions of foreign language students on the effectiveness of AI-powered assistants and online collaboration tools in tackling writing challenges in foreign language education. In this regard, the research incorporated a semi-structured interview, survey based approach and analysis of students writing sample as a method of data collection. On the hand, the semi-structured interview was conducted before and at the end of the course, and this was also done in the collection of the writing samples of the students.

B. Research Sample

The sample for this research consists of thirty (30) who are enrolled in English Writing course 1 from various universities. However, these participants were purposively selected to represent appropriate participants for the study. The basic information of these participants is summarized in table below.

Table 1: Demographic Variables

Variable	Category	Frequency	Percentage
Gender	Male	11	36.67%
	Female	19	63.33%
Age	18-25	19	63.33%
	26-30	11	36.67%
Writing Proficiency level	Beginner	19	63.33%
	Intermediate	6	20.00%
	Advanced	5	16.67%

C. Research Tool

In regards to the tools used for this research, an online questionnaire was used to collect the quantitative data. Nonetheless, a semi-structure interview and some writing samples from the research participants were also used. Prior to the interview, the participants were asked to write a descriptive essay on the best moment of their lives making use of an AI-powered assistance (Grammarly) and an online collaborative tool (Google Docs). SPSS was further used to analyze students writing proficiency; comparing their pre-and post-course writing samples. Nevertheless, a smart phone was also used to call the participants for the interviews and the conversation were recorded and transcribed by the researcher.

D. Method of Analysis

The quantitative data were generated using the online questionnaires which were sent to them through their active emails. This questionnaire was used in regards to the first research question. The research also used a thematic analysis to analyze the qualitative data generated from the interview (five individuals were selected from the participants; that FLS1-FLS5). Also, an observation method was adopted to evaluate students’ written samples. These sample were further evaluated and analyzed using SPSS. Meanwhile, based on the data generated, common themes were developed and presented in a table for further analysis.

4.0 Data Presentation and Analysis

4.1 Quantitative Result

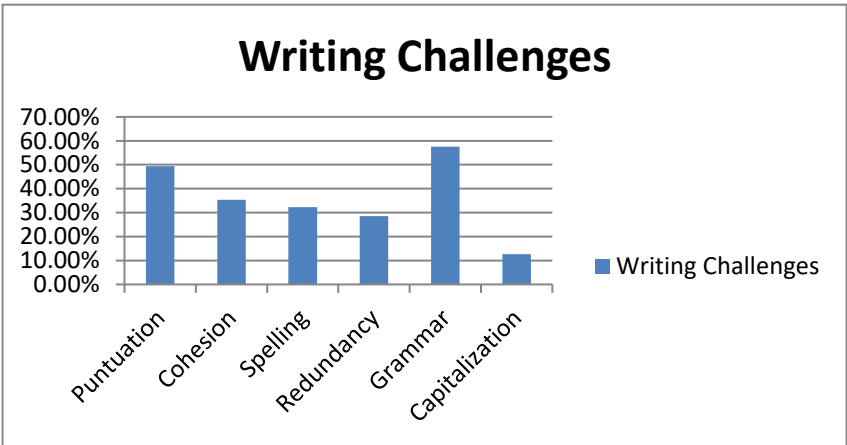


Figure 1: Writing Challenges in Foreign Language Education

In the first research question, a questionnaire was used by the participants to identify items that they perceived to be among the writing challenges students face in foreign language education. However, the writing challenges identified in this research include punctuation, capitalization, cohesion, spelling, grammar, and redundancy. However, it can be seen from the chart above that more than 50% of the research participants highlighted grammar as one of the writing challenges. However, based on the number of affirmations from the participants, it can be assumed that grammar is the most

common writing challenge. This is followed by punctuation, where almost 50% of the population affirmed its position in the writing challenge.

Nevertheless, punctuation entails using symbols like commas, hyphens, periods, and semicolons, among others, to convey and clarify meanings. Meanwhile, the number of affirmations from the participants regarding cohesion and spelling fall within the range of 32-35%, with 28.53% affirmation regarding redundancy by the participants. However, the number of affirmations of the respondents concerning capitalization (12.63%) shows that this writing challenge is less common among students. Capitalization involves using capital letters to start sentences and certain words for grammatical purposes.

Table 2: Quantitative Improvement in Students Writing Proficiency

Assessment Criteria	Pre-course	Post-course	Improvement	Statistical improvement
1. Spelling	8.5 Errors	2.5 Errors	62%	P<0.01
2. Grammar Accuracy	9.7 Errors	3.4 Errors	60%	P<0.01
3. Coherence	Score 3.2	Score 4.5	41%	P<0.01
4. Redundancy	Score: 2.5	Score 3.9	53%	P<0.01
5. Punctuation	70%	85%	15%	P<0.05
6. Capitalization	Score: 7.8	Score 8.5	9%	P<0.05

The above represents respondents’ improvement after using the AI-powered assistance (Grammarly) and an online collaborative tool (Google Docs) before and after the course. Recall that the participants were asked to write a descriptive essay on the best moment of their lives, using AI-powered assistance (Grammarly) and an online collaborative tool (Google Docs) for only the pre-course. However, their written samples were further evaluated, and the result revealed observable spelling errors (8.5) and grammatical errors (9.7) in the pre-course. However, after using AI-powered assistance (Grammarly) and an online collaborative tool (Google Docs) in the second writing exercise, the errors found in their spelling and grammar were drastically low. However, comparing the reduction rate, it can be said that there is a significant improvement in students’ writing proficiency (60% and 62% respectively).

Conversely, the participants demonstrated a noticeable increase in their improvement rate in terms of coherence and redundancy. Their scores in ‘coherence’ improved from 3.2 to 4.5, and in ‘redundancy’ from 2.5 to 3.9. However, the respondents’ scores in punctuation and capitalization indicate a lesser challenge in these writing aspects. The findings in Table 2 indicate that AI-powered assistance and an online collaborative tool are not just tools, but crucial facilitators in improving all aspects of writing proficiency for language learners. This reassures us of the effectiveness of these tools in the learning process.

4.2 Qualitative Result

Table 3: Detailed Key Themes from the Semi-Structure Interview

Themes	Instances
1. Grammar and spelling correction	<i>“ChatGPT highlights these mistakes instantly correct them...”</i>
2. Motivation and engagement	<i>“as I interact with these AI tools I feel more motivated and encouraged...”</i>
3. Writing style suggestion	<i>“I like to use AI tools to write sophisticated text”</i>
4. Vocabulary enhancement	<i>“Vocabulary suggestion embedded in these tools makes writing easier for me”</i>
5. Collaborative writing and feedback	<i>“I do learn different writing styles when I read some of my peers’ documents”</i>
6. Challenges	<i>“It does not support all languages”</i>

A. Grammar and spelling correction

As insinuated by the research respondents, AI-powered tools offer real-time feedback in terms of grammar and spelling errors. However, they instantly identify all the grammatical errors in a text and correcting them with appropriate words. As attested by one of the participants in regards to his experience in the use of ChapGPT in writing essay, some of the words in the prompt he used were incorrect and were immediately highlighted by the AI tool for correction.

“I do make both grammatical and spelling error when writing. However, ChatGPT highlights these mistakes instantly correct them for me and further identify correct ones.” FLS 3

B. Motivation and engagement

Motivation and engagement is among the basic advantage of using AI-powered tools. in the context of writing, these tools enhance motivation and engagement by engaging the users with various interactive element and making their writing activities fun. The gamification features found in the these tools allow learners to have fun as their engage in their writing activities; as one of the respondents notes;

“When I see my progress as I interact with these AI tools I feel more motivated and encouraged to continue with my learning process”, FLS1

C. Writing style suggestion

One of the advantages of these AI writing tools is the capability of developing the students writing ability from a novice to a sophistic writer. AI tools guide learners towards effective writing style.

“I like to use AI tools to write sophisticated text. For instance, I specify they kind of register and tone I would my text to be, and the AI tool will execute the command.” FLS2

D. Vocabulary enhancement

Issues in limited vocabulary remain one of the writing challenges learners face. Learners use words repetitive because of limited vocabulary leading to redundancy in writing. However, AI tools can solved this challenge through improvement of students' vocabulary. Majority of AI writing tools are equipped with dictionaries and synonyms suggestions. With these, language learners who use them can choose appropriate word, and avoid repetition.

"Vocabulary suggestion embedded in these tools makes writing easier for me. I learn more words through these; especially synonymous words." **FLS 4**

E. Collaborative writing and feedback

Some AI-powered tools serve as a collaborative tool, allowing students to work together and perform some writing tasks. With these tools, students can share their works, review each other's work and also provide constructive feedback in regards to their works. As stated by one of the participants, learners can also learn each others' learning style which is made possible by using a collaborative tool.

"I do learn different writing styles when I read some of my peers' documents." **FLS 2**

F. Challenges

Meanwhile, majority of the research participants attested to the challenges of using some of these tools for writing improvement. One of the challenge as seen in participants' responses is lack of cultural nuance, especially when interpreting idiomatic expression. Some of these AI tools are not designed to adapt to cultural nuances of every language. Majority of them are configured to reflect that of the English language. Another challenge identified in the participants' responses is dependency on internet connection and overreliance on technology. Majority of these are only accessible with internet connection. However, constant use of these tools can also pose as a challenge to users. Language learners who use these tools might constantly depend on them for correction of their writing error, thus mitigating room for critical thinking.

"It does not support all languages. And I constantly find myself depending on them for writing my assignments." **FLS 5**

4.3 Discussion

As revealed in this research, the integration of AI-powered assistants and online collaboration tools has proven to tackle some writing challenges in foreign language education. Successful conveyance of thoughts into written form comes with many challenges, especially if the writer uses unfamiliar language. These challenges identified in this research are spelling, grammatical accuracy, punctuation, cohesion, capitalization and redundancy. This research aimed to investigate the perceptions of language students on the effectiveness of AI-powered assistants and online collaboration tools in tackling these identified writing challenges in foreign language education.

It was observed that grammar, as one of the challenges identified, occupied the position of the most common writing challenge in foreign language education. As

stated by Cahyono (2016), grammar is the basic tool for conveying a message, whether through written or verbal mode. Hence, to avoid misinterpretation of the message of miscommunication text, the text must be devoid of grammatical errors. While grammar and punctuation occupied the common writing challenge, the number of affirmations from the participants regarding cohesion and spelling fell within the range of 32-35%, with 28.53% affirmation regarding redundancy by the participants. It is important to note that redundancy can be caused by limited vocabulary. A study by Gomaa-Moulds (2010) acknowledged that redundancy is a common writing challenge faced by Arabic EFL students. Yang, Y. (2022) attributed redundancy to language transfer of L1 to the target language. Meanwhile, capitalization occupied the position of a less common writing challenge, as can be seen in the quantitative result.

To test the effectiveness of these tools in tackling writing challenges, the students' pre and post-course writing samples were evaluated. The research revealed observable spelling errors (8.5) and grammatical errors (9.7) in the pre-course. However, after using AI-powered assistance (Grammarly) and an online collaborative tool (Google Docs) in the second writing exercise, the errors found in their spelling and grammar were drastically low. However, comparing the reduction rate, it can be said that there is a significant improvement in students' writing proficiency (60% and 62% respectively). This improvement was also obtained in other areas, such as coherence and redundancy; the students' scores improved from 3.2 to 4.5 in 'coherence' and 2.5 to 3.9 in 'redundancy' compared to capitalization and punctuation. It can be assumed that capitalization and punctuation are often basic elements of language instruction; there was no huge improvement in these aspects of writing because the students are already familiar with these basic rules. Based on the findings in the quantitative analysis, it can be summarized that AI-powered assistance and an online collaborative tool are important writing tools that can help facilitate and improve all aspects of the writing proficiency of language learners.

Meanwhile, various themes were generated from the qualitative analysis carried out in this research. These themes are grammar and spelling correction, motivation and engagement, writing style suggestion, vocabulary enhancement, collaborative writing and feedback, and challenges. While grammar and spelling correction, motivation and engagement, writing style suggestion, vocabulary enhancement, collaborative writing and feedback represent the effectiveness of these AI writing tools, the last theme represents the challenges associated with using these tools. The research identified various challenges, such as lack of cultural nuances, over-reliance on technology, and dependency on internet connection. One effective one of mitigating these challenges is balancing these technologies with traditional learning. As suggested by Wang et al. (2024), blended learning avails students to harness the benefits of both traditional and modern writing learning methods. The technical challenge, represented by the factor 'dependency on internet connection', can also be tackled by designing AI tools and writing tools that can be used offline.

5. Summary and Conclusion

Writing requires proper skills to communicate one's thoughts or messages as a mental and physical activity. This research has provided evidence that technologies such as AI-powered assistants and online collaboration tools can tackle some writing

challenges in foreign language education and improve learners' writing skills. The findings of this research highlighted spelling, grammatical accuracy, punctuation, cohesion, capitalization and redundancy as some writing challenges learners face during their writing education. However, based on the tests, the research showed that students' writing ability can be improved and their writing challenges mitigated using AI-powered writing tools. Despite the effectiveness of these technologies, some factors, such as lack of cultural nuances, over-reliance on technology, and dependency on internet connection, were identified as challenges users encounter while using them. The research emphasized integrating these AI tools in traditional learning settings. Also, some of the technical factors can be tackled by these software developers. The research further recommends understanding the features of these tools by language teachers and integrating the ones they found most impactful in their teaching curriculum.

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