# AI-Powered Writing Assistants in Second Language Education: A Systematic Review

**Thivyah A/P Thiruchelvan*, Nur Yasmin Khairani bt Zakaria**

**Faculty of Education, Universiti Kebangsaan Malaysia, Bangi, 43600, Malaysia**

**DOI: https://dx.doi.org/10.47772/IJRISS.2025.910000833**

**Received: 14 November 2025; Accepted: 20 November 2025; Published: 25 November 2025**

## ABSTRACT

This systematic literature review examines ESL teachers' perceptions of AI-powered writing assistants, highlighting benefits such as improved writing accuracy, vocabulary, and engagement, alongside concerns about over-reliance, critical thinking, data privacy, and inadequate training. Fifteen studies (2020–2025) from ERIC and Google Scholar were analyzed using predefined inclusion and exclusion criteria. Findings emphasize the need for teacher readiness, clear guidelines, and contextual adaptation to integrate tools like Grammarly, QuillBot, and ChatGPT effectively in ESL writing instruction. Recommendations are offered for educators, policymakers, and researchers to ensure informed, ethical, and pedagogically sound use of AI in language learning.

**Key Words:** Artificial Intelligence, AI-powered writing assistants, ESL teachers' perceptions, language learning technologies, second language writing, systematic literature review

## INTRODUCTION

### Introduce the Problem

In recent years, the development of Artificial Intelligence (AI) in education has improved by leaps and bounds, fundamentally reshaping most teaching and learning methods. Artificial intelligence has become common in personalized learning, adaptive assessment, and intelligent tutoring systems, which provide new opportunities to expand the usefulness of the instructional process and improve the performance of the learners (Zawacki-Richter et al., 2019; Yang & Evans, 2023). One of such innovations is the development of AI-written helpers such as Grammarly, QuillBot, ChatGPT, assisted writing that has become a significant contributor to the writing development process in different educational settings.

AI-themed writing aids have features of immediate, automatic error flags on grammar, word options, design, sentence structure, and continuity. Such immediate feedback rewards students and promotes the development of self-editing skills and learner independence by engaging in reflective writing and repeated drafting (Xie et al., 2021; Zhang et al., 2022). In Second Language education, these tools can be especially useful in enabling the learners to overcome drawbacks that they experience when it comes to the aspects of grammatical accuracy and lexical variety, helping them gain confidence and ultimately developing a skill of improving their writing fluency in the long term (Chen et al., 2022). As another example, the AI writing assistants have been demonstrated to benefit English as a Second Language (ESL) learners increase their vocabulary, form sentences effectively in writing, and improve their writing precision, which is essential to successful language learning (Lim & Lee, 2023).

Although the use of writing tools through AI is increasing, the current studies are more biased towards the results and analyzing the technological aspect in the field of learners and not enough about the views of ESL teachers (Gong et al., 2023). The role of ESL teachers in the implementation of AI tools in the classroom practice is important as they lead students on correct and responsible usage of tools and coordinate technology with pedagogical goals. Nevertheless, many remain concerned about the possible overreliance on AI by students, potential decreases in critical thinking and originality, and the lack of explicit instructional paradigms of AI

(Noor et al., 2024; Luo & Yang, 2023). Investigating teachers' perceptions of these benefits and challenges is essential for developing informed strategies for AI implementation in language education.

To address this gap, the present Systematic Literature Review (SLR) examines recent studies published between 2020 and 2025 that investigate ESL teachers' perceptions of AI-powered writing assistants. This review aims to identify recurring themes related to perceived advantages, challenges, and practical implications for classroom use. The findings intend to inform educators, researchers, and policymakers about effective and meaningful integration of AI tools in second language writing education.

## AI in Second Language Writing

AI-powered writing assistants such as Grammarly, QuillBot, and ChatGPT have become increasingly popular in recent years for their potential to support writing development among second language learners. Such tools can either offer comments on the other elements of writing, such as grammar, punctuation, word choice, sentence construction, and tone (Alqahtani, 2023; Chowdhury & Islam, 2023). Further than mere amendments, highly sophisticated AI assistant services provide paraphrases, generation, and even better readability and logical flow (Liu et al., 2023). Compared to the traditional grammar checkers, modern AI writing tools are flexible to adopt various levels of proficiency and writing situations, and thus can be of great help to ESL students.

Writing assistants powered by AI can increase personalization and student-centered writing practices of second language learners. This gives the learners immediate feedback that encourages self-correction and slims down the gap between writing and getting feedback, thereby fostering iteration revision and language acquisition (Huang et al., 2023). To accompany traditional education, teachers have used such tools in classroom practice, homework, and writing workshops (Zhou et al., 2023). This is also possible because of the flexibility of AI tools, which enables learners to train and enhance their writing skills when they are not in the classroom, continuing to develop the language. Hence, AI writing assistants can be considered an excellent digital assistant throughout the language learning of ESL students (Alqahtani, 2023; Chowdhury & Islam, 2023).

## Teachers' Role in AI Integration

Educators are a key to a successful implementation of AI technologies in language learning. They are the factors that affect the effectiveness of the implementation of AI and AI tools in the classroom greatly because of their attitudes toward AI, digital competence, and willingness to employ new technologies (Ghavifekr & Rosdy, 2020; Tao & Gao, 2021). Literature indicates that the better a teacher thinks about the possible advantages of AI, the more likely they are to integrate this technology into the teaching and learning process (Krause & Stark, 2023). On the other hand, adoption may be impeded by resistance to or fear of AI, which may be a result of low transferable skills in digital technologies, fear of a loss of control over instruction, etc. (Luo & Yang, 2023).

The usage of digital readiness, which implies the confidence and the competence of teachers in utilizing digital technologies to teach their students, becomes a vitally important factor in the adoption of AI (Noor et al., 2024; Suh et al., 2022). It has been determined that professional development and frequent training courses specializing in AI engines in language teaching are needed to improve the digital skills of teachers and encourage them to use it effectively (Cheng et al., 2021). Lack of digital preparedness can lead to a lack of full usage of AI tools by the teachers or a shallow usage of them that creates less pedagogical changes.

Pedagogically, AI writing aids demonstrate a great potential to improve language acquisition on the back of delivering timely personalized feedback and supporting differentiated instruction (Lim & Lee, 2023; Yang & Evans, 2023). Nevertheless, utilization of AI in a way, that it would be fruitful, demands that teachers engage in thinking through their roles differently, changing them, no longer as transmitters of knowledge but as mere facilitators and guides helping learners to critically process feedback produced by AI (Gong et al., 2023). Instead of mere imposition of AI tools, pedagogical models where their use in combination with teacher directions has been promoted have been recommended to ensure optimal learning and avoid loss of autonomy in the learners (Noor et al., 2024).

There are still reservations around possible overreliance on the AI feedback, the risk of decreasing critical thinking, and making judgements about originality and academic integrity (Luo & Yang, 2023; Chen et al., 2022). Such issues mean that teachers must formulate specific teaching methods and ethical principles when using AI in language classrooms (Tao & Gao, 2021). Therefore, critical participation and reflective teaching further support the claim that teachers must balance the possibilities and constraints of the AI technologies in the teaching of second language writing.

### Importance of Teachers' Perceptions

The perception of AI-powered writing assistants by teachers is an important factor in the process of adoption and implementation of such technologies in classrooms (second language). Given what teachers believe about the usefulness and ease of use of AI tools, positive attitudes and beliefs towards the usefulness and easy use of AI tools have potent impacts on willingness to have AI tools integrated into teaching practices (2023; Noor et al., 2024). According to the research, the likelihood of teachers embracing and regularly using AI writing tools significantly increases when they perceive the use of such tools to be helpful to improve student learning outcomes and feasible to incorporate in their day-to-day teaching activities (Gong et al., 2023).

Conversely, aversive considerations like concerns of inaccuracy, development of overdependency on AI with the students, or the perceived loss of teacher power could be a barrier to proper execution (Luo & Yang, 2023). Such perceptions not only affect the choice in utilizing AI equipment but also inform the ways of using it in the classroom. The educators who are aware of the fact that AI is an assistive tool would most likely employ it in organized tasks that stimulate reflection and language conscious and student self-direction. On the other hand, the users having doubts can restrict AI to some extent or abide by the traditional teaching methods (Chen et al., 2022; Lim & Lee, 2023).

The views of teachers would also influence the way AI-generated responses can be interpreted and applied in the process of writing. An important mediator among instructions is the instructors who are able to guide the students in implementing the AI suggestions in a proper manner and use them in their own writings. The above advice is especially significant when teaching a second language, as they are greatly assisted by explanations taking into account not only the linguistic but also the cultural aspect (Noor et al., 2024; Tao & Gao, 2021).

Since teachers are essential agents of educational innovation, their insights and attitudes are vital in shaping how AI tools are introduced and sustained in practice. Understanding these perceptions helps inform the development of targeted training programs, digital support systems, and effective pedagogical models for AI integration (Cheng et al., 2021). Addressing teachers' concerns and expectations ensures that the use of AI-powered writing assistants is both pedagogically sound and responsive to classroom realities, thereby enhancing the overall quality of language learning.

## METHOD

### Database and Search Strategy

This systematic literature review followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 checklist, a widely used framework that supports clarity and quality in review studies. This review was meant to identify the perceptions of ESL teachers toward AI-driven writing assistants and their advantages, concerns, and classroom applications.

Existing research was collected, and analyzed by using a descriptive comparative method. This methodology gave the researcher the opportunity to review the ways that various studies explored the perspectives of ESL teachers on the tools, including Grammarly, QuillBot, and ChatGPT. Among the factors to be considered, there were the effectiveness of tools, their use in the classroom, the preparedness of a teacher, the ethical elements, and the future of interpretation of the AI-generated feedback.

The search was done in two prominent academic databases that include ERIC and Google Scholar. These were chosen because of their widespread access to peer reviewed educational texts. An educational framework of the

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS | Volume IX Issue X October 2025

targeted keywords was used to retrieve studies concerned with AI writing tools in second language learning, their focus being placed on teacher perceptions and teaching practice.

The review procedure performed four primary PRISMA stages, which include (i) identification, (ii) screening, (iii) eligibility and (iv) inclusion, as shown in Figure 1. Subsequent removal of duplicates and irrelevant records after gathering the studies based on the search terms were eliminated. The full texts were then evaluated on the basis of having relevance to the research focus. In total, 15 empirical studies met the criteria and were included for analysis.

Comparing these studies provides this review with the insight into how ESL teachers perceive and use AI writing tools in the classroom, which are better understood by comparing these studies.

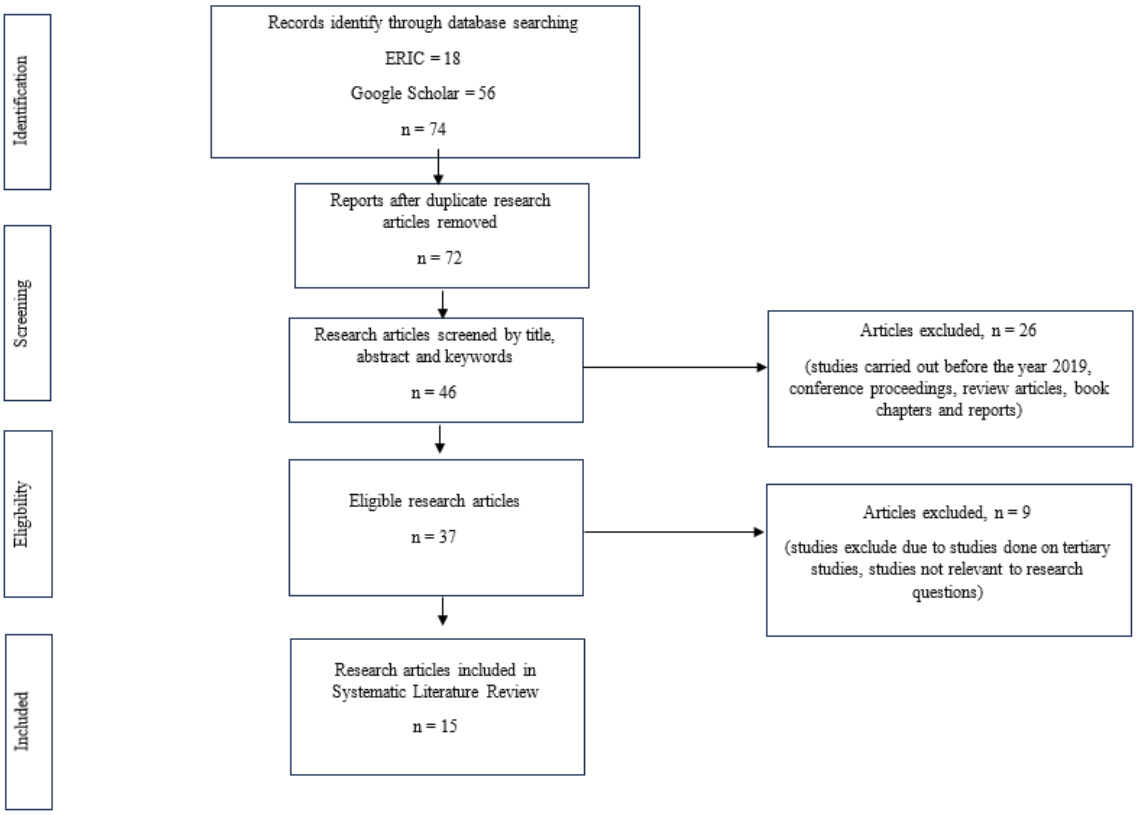


Figure 1. PRISMA systematic review

**Phase 1: Identification Phase**

According to the PRISMA 2020, the process of identification of suitable studies that informed a systematic literature review has been targeted to find studies examining the prospect of teachers to handle English as a Second Language (ESL) to use AI-powered writing assistants. The search process was made using two well-established databases such as Educational Resources Information Centre (ERIC) and the Google Scholar. The Education Resources Information Center, commonly known as ERIC is a popular online library which indexes the educational research articles, reports, journals, and reports. Google Scholar, instead, is a free academic search engine and it allows access to a very wide variety of peer-reviewed publications and scholarly materials. The selected strategy of research was the wide availability and reliability of these databases in the coverage of educational research by their peer reviews.

Table 1 shows the keywords that were adopted in the search process. Such keywords were well-formulated in accordance with the key constructs of the review, i.e. artificial intelligence in writing, ESL teaching, and teacher perception. The search terms were generated by studying the literature already available on AI tools in teaching and learning, second language writing, and teaching staff-related aspects.

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS | Volume IX Issue X October 2025

The date range was restricted to 2020 to 2025, as such a time frame would enable having focused the review on new and topical literature, especially when considering that the mechanism of AI presence accelerated in the literature and applications in education over this period. Only articles that were written in English were considered because there should be consistency and easiness in terms of reading published materials.

By the completion of this identification stage, a number of 74 articles were selected in the two databases. In the next stage of the review these results were subsequently screened.

Table 1. Keywords used to find related articles.

| ***Database*** | ***Search String*** |
|---|---|
| ***Google Scholar*** | ("AI writing assistant" OR "artificial intelligence writing tool" OR "automated writing feedback" OR "ChatGPT" OR "Grammarly" OR "QuillBot") AND ("ESL" OR "English as a Second Language" OR "L2 writing") AND ("teacher perception" OR "educator view") |
| ***ERIC*** | ("AI in education" OR "AI writing assistant" OR "writing tool" OR "artificial intelligence feedback") AND ("second language writing" OR "ESL writing" OR "language learning") AND ("teacher belief" OR "teaching practice" OR "instructional impact") |

Phase 2: Screening Phase

During the search process across both ERIC and Google Scholar, all retrieved articles were carefully examined to identify and remove any duplicate entries. After eliminating duplicates, the remaining articles were re-evaluated to ensure they aligned with the inclusion criteria established by the researcher, which is detailed in Table 2.

Table 2. Inclusion and exclusion of criteria

| **Inclusion Criteria** | **Exclusion Criteria** |
|---|---|
| Studies published in English | Studies published in languages other than English |
| Studies published between 2020 and 2025 | Studies published before 2020 |
| Studies focusing on AI-powered writing assistants in ESL or second language education | Studies focusing solely on general AI tools outside the context of language learning |
| Studies involving ESL teachers or educators | Studies focusing only on students or technical tool development |
| Studies examining teacher perceptions, benefits, challenges, or pedagogical integration of AI writing tools | Studies unrelated to teacher perspectives or that do not involve AI writing tools |

In the screening phase, a total of 74 articles retrieved from ERIC and Google Scholar were carefully examined to determine their suitability for inclusion in the review. First, duplicate records were identified and removed, resulting in 72 remaining articles. These articles were then assessed according to the established inclusion and exclusion criteria, as outlined in Table 2. During this process, 26 articles were excluded because they did not align with the main research objectives. These excluded articles either did not focus on teacher perceptions or were unrelated to second language writing. Additionally, 9 articles were excluded for being outdated or lacking relevance and empirical value.

After completing the screening, 37 articles were retained for further evaluation. Out of these, 15 articles were selected for in-depth analysis based on their strong relevance to the research focus. These studies provided

meaningful insights into the perceptions of ESL teachers regarding the use of AI-powered writing assistants in classroom instruction.

**Phase 4: Exclusion Phase**

Following the eligibility check in the third phase, several articles were excluded from this systematic literature review. The reasons for exclusion are outlined in Table 2. This step, along with the eligibility review, played an important role in ensuring that only studies of appropriate quality and relevance were selected for final analysis.

## RESULTS

In this section, the author(s) should summarize the collected data and the analysis performed on those data relevant to the discourse that is to follow. The data in sufficient detail to justify your conclusions should be reported in this section. The author(s) should mention all relevant results, including those that are antithetical to expectation; be sure to include small effect sizes (or statistically nonsignificant findings) when theory predicts large (or statistically significant) ones. Do not hide uncomfortable results by omitting the data. Do not include individual scores or raw data with the exception, for instance, of single-case designs or illustrative examples. In the spirit of data sharing (encouraged by APA and other professional associations and sometimes required by funding agencies), raw data, including study characteristics and indivldual effect sizes used in a meta -analysis, can be made available on supplemental online archives.

**Research Question 1:**

What are the perceived benefits of using AI-powered writing assistants in ESL writing instruction, according to ESL teachers?

The evaluation of the 15 chosen studies showed that ESL teachers are mostly optimistically inclined toward the use of AI-driven writing assistants because some pedagogical advantages exist. One of the advantages that many teachers tend to mention repeatedly is the increase of writing accuracy among students. According to the teachers, the available tools, e.g., Grammarly and QuillBot can recognize and correct both grammatical, and punctuation as well as syntactic mistakes that will result in finer and more precise writing in the long-term. Such immediate feedback enables students to learn more about the pattern in which they make the most frequent mistakes and also supports self-correction which is critical in language acquisition (Chen et al., 2022; Lim and Lee, 2023).

A second relevant advantage mentioned by teachers is the fact that students would improve in their vocabulary use and lexical variety. The use of AI writing tools usually recommends synonyms and contextual word usage as well as collocations, which contribute to the diversification of language and the choice of more specific words by students. These recommendations were revealed as especially beneficial to those students who study in the range of intermediate and advanced proficiency to improve their lexical inventory in situation of authentic writing (Alqahtani, 2023; Liu et al., 2023).

It was also noted by ESL teachers that AI-based writing assistants enhance a learner autonomy. Students are always able to make draft revisions since they always have automated feedback at their disposal without necessarily involving a teacher. This transition supports the types of self-directed learning and instills confidence in learners during the various processes of revision of their texts (Xie et al., 2021; Zhang et al., 2022). Teachers appreciated the increased activity and participation of learners in the writing classroom that this independence brought.

Moreover, the interactive functions of machine learning tools made the students become engaged and motivated. Teachers observed that learners were more eager to engage in writing activities due to the availability of some tools that allow real-time and usable feedbacks. The feedback was real time and enabled students to monitor their progress instantaneously, and the same propelled the students to write more of them and to be more meticulous in reviewing their work (Chowdhury and Islam, 2023; Yang and Evans, 2023).

Finally, educators recognized the efficiency of AI resources in facilitating the needs of differentiated instructions. These tools work across the range of learners of different proficiency levels due to the personalized suggestions and feedback. As an example, more advanced students could be given feedback concerning style and logical sweep, whereas the novices can have their mistakes in grammar and vocabulary corrected. Such flexibility will enable teachers to support different learner needs without overworking them as part of a burden (Zhou et al., 2023; Gong et al., 2023).

In summary, ESL teachers perceive AI-powered writing assistants as effective tools that improve writing accuracy, support vocabulary development, encourage learner autonomy, increase engagement, and facilitate personalized instruction. These perceived benefits highlight the growing pedagogical value of AI technologies in ESL writing classrooms.

**Research Question 2:**

What challenges and concerns do ESL teachers face regarding the integration of AI-powered writing assistants in the classroom?

Based on the evaluated literature, a few issues and concerns are outlined by the ESL teachers concerning the incorporation of writing assistant tools based on AI technology in the second language classrooms. Overdependency on the AI tools by students is one of the most frequently reported concerns that can also impede the emergence of independent writing and critical mind. Teachers mentioned that although such tools can be useful allowing to provide helpful hints, students may passively accept corrections without even thinking about the rules behind them or even not think of their choices of writing (Luo and Yang, 2023; Noor et al., 2024). This reliance is of particular concern to the long-run writing abilities of the learners, particularly when utilized in situations that involve tasks with demand of original thinking and production of language without electronic tools.

The other big problem is the dwindling of academic honesty and originality. Educators indicated that they do not know how to assess the work of students when AI tools could have been used to generate large amounts of content or conducted paraphrasing or editing. The simplicity of the ability of students to generate quality texts with the help of AI makes it hard to evaluate the real knowledge and work of students. It may especially be an issue on high-stakes writing assessment and academic writing tasks where the authenticity and individual voice are important factors (Chen et al., 2022; Tao and Gao, 2021).

Moreover, privacy of the data and ethical issues were raised in a number of studies. The safety of learner information with the use of cloud-based AI writing on platforms was a major concern that was addressed by teachers in ESL. Other AI tools harvest data entered into them to optimize their algorithms and this leads to concerns regarding the storage, processing and possible re-use of student writing. Instructors stressed the presence of reasonable rules and regulations so that utilization can be ethical and maintain student privacy particularly in academic spaces where the digital data of learners needs protection (Liu and Yu, 2020; Noor et al., 2024).

Professional training and digital preparedness of teachers was a major hindering factor to effective integration of AI as well. Although other educators were so passionate about the potential of AI tools, most of them were unable to utilize those tools in their instructional practices based on the lack of skills or pedagogical frameworks. There was lack of official training on AI technologies, and therefore within classrooms there was no uniformity in implementation of the same. Researchers noted that it is crucial to provide teachers with specific professional development to learn how to incorporate AI tools in the lesson plan, to read the AI-generated feedback and learn how to guide students through AI-powered technologies (Cheng et al., 2021; Suh et al., 2022).

Lastly, teachers have said that the misalignment exists between instructional goals or curriculum standards and AI produced feedback. Other AI-based tools provide feedback that focuses on mechanical accuracy rather than the more profound ways to write like coherence, argumentation or creativity. This inconsistency might disorient students and pose a problem to the teachers, in reconciling the AI feedback with classroom user rubrics, or learning outcomes (Lim and Lee, 2023; Gong et al., 2023). Consequently, AI systems were demanded by the

teachers to be more open to pedagogical thinking and capable of adapting to a particular and specific context in the classroom.

In summary, while ESL teachers recognize the potential of AI-powered writing assistants, they also express valid concerns about student over-reliance, academic integrity, data privacy, lack of teacher training, and feedback misalignment. Addressing these challenges is essential to ensure that the use of AI in ESL classrooms remains ethical, effective, and pedagogically sound.

# DISCUSSION

The results of this systematic literature research can be of great value in understanding the perception of ESL teachers towards using writing assistants powered by AI as they revealed that there were advantages and drawbacks of adopting their integration into classrooms. The discussed studies show, on the whole, that ESL educators have certain awareness of the pedagogical power of such AI writing applications as Grammarly, QuillBot, and ChatGPT in the improvement of the writing process among second language students. Having a sense of autonomy, they are believed to enhance the accuracy of writing and contribute to vocabulary construction, as well as become a source of immediate feedback that is very convenient and available (Chen et al., 2022; Lim and Lee, 2023; Zhang et al., 2022). The instantaneous and explicit feedback motivates the learners to improve their work on their own and become more self-regulated in terms of writing (Xie et al., 2021; Chowdhury and Islam, 2023).

Additionally, ESL teachers value the capacity of AI solutions to enable DI instead of only assigning homogeneous learning tasks. Especially providing access to students based on their language proficiency levels. This is in line with other researchers such as Zhou et al. (2023) and Gong et al. (2023) who show that the AI-generated suggestions can be particularly effective in teaching learners that require specific assistance. Such benefits are in line with modern pedagogical trends to move towards a learner-centered approach and assessment. With the rise of AI, it will most probably also be used to enhance the traditional method of teaching writing, particularly in those ESL classrooms with little time and high student-teacher ratio.

Along with these advantages, there are also major issues that are listed in this review as targeted areas that have to be found so that there can be effective and sustainable integration of AI. The main concern of teachers relates to the possibility of excessive student dependence on input AI-based feedback. Instructors are afraid that students will learn to accept corrections without struggle and will experience a loss of critical thinking, independence in writing, and secondary development language (Noor et al., 2024; Luo and Yang, 2023). This issue resonates with similar results when doing so before in other research where automation of feedback could lead to decreasing levels of cognitive involvement (Tao and Gao, 2021). Also, there was a prominent theme of the issue of academic integrity. The possible authorship of the entire passages in the student work by the AI or extensive editing of the work allows one to complicate the task of separating the original writing of students and the AI work (Chen et al., 2022; Liu and Yu, 2020).

Issues of data privacy also arose in regard to ethics of various studies. Teachers indicated concerns regarding cloud-based AI systems that can gather, retain, or analyse written information about a student without their clear, informed consent or a data protection policy (Noor et al., 2024; Liu and Yu, 2020). These issues indicate that institutional guidelines and privacy procedures are highly needed to be followed in teaching contexts in terms of using AI instruments. The teacher training and lack of digital readiness can also be listed as one more repeating issue. On the one hand, a group of educators is eager to work with AI and apply it to their instructing processes; on the other hand, a significant part of teachers does not feel ready to incorporate AI into their teaching practice as the overall professional development is not adequate (Cheng et al., 2021; Suh et al., 2022). This gap restricts effective application of AI and supports once again the need of organized sets of training based not only on the technical side of using AI, but also on the teaching side of it.

Lastly, the lack of correlation between curriculum goals and the AI provided feedback was also mentioned. Although AI tools are rather good at detecting surface errors, they tend to ignore higher order writing processes like coherence, argumentation, and creativity. Such a mismatch as observed by Gong et al. (2023) and Lim and

Lee (2023) can reduce the learning aims of ESL writing programs unless the teacher takes care to mediate them carefully.

Overall, the overall pros and cons of AI-enabled writing assistance tools in ESL education are the subject of the discussion. Although these tools can be substantively beneficial to the work of teachers and the learners, their planned implementation relies on proper consideration, moral protection and growth. Further research should also be ongoing in terms of exploring the ways in which AI can be pedagogically aligned in language learning contexts on the background of teacher concerns and realities in the context of classrooms.

**Limitations**

The given systematic literature review gives significant information about the perceptions of ESL teachers concerning AI-powered writing assistants, although a number of limitations are to be considered. The first weakness is that only two academic databases were used; ERIC and Google Scholar. As much as these databases have general access to literature in the field of education, failure to incorporate the use of other sources including Scopus, Web of Science or ScienceDirect could make the literature search narrower. It would have been possible to find a more complete set of findings by very easy-to-use the wider database research.

The other weakness is that there are rather few studies that participated in the final analysis. Ninety-eight percent of the articles received did not fulfill the inclusion criteria out of the original seventy-four artifacts. Such a small figure does not always represent the diversity of ESL experiences in various regions, types of school, and learning environment. Moreover, a diversity of research methods, such as surveys and interviews, was used in the reviewed studies; therefore, some confusion may exist in reporting and interpreting the perceptions of teachers.

Finally, this review only concentrated on the teachers of ESL. Although the input of the teachers is the key to getting the picture of the classroom practice and the adoption of technology, the non-inclusion of the voices of the students, administrators, and policymakers might prove to be a hindrance towards the comprehensiveness of how the AI-based writing tools would work in actual contexts of the classroom. It could be helpful in further discussions to incorporate the opinions of different stakeholders to have a comprehensive picture when it comes to issues and prospects surrounding the implementation of AI in language learning.

## RECOMMENDATIONS

On the basis of the results obtained in the framework of this systematic literature review, a few recommendations can facilitate the proper and responsible adoption of AI-powered writing assistants in English as a Second Language education. To begin with, they should address the prolonged professional development of the teachers that will target both technical and pedagogical sides of working with AI tools. In the event that the teachers are adequately trained, then they are more comfortable and capable of effectively integrating these technologies in their teaching and learning process. This has been rallied by research noting the significance of well-organized digital training regimes to enhance teacher preparedness (Cheng, Wang, & Song, 2021; Suh, Choi, & Park, 2022).

Secondly, AI writing tool developers are encouraged to cooperate with educators in order to make sure that the feedback generated by such tools is consistent with curricular objectives and standards of teaching. Most artificial intelligence systems focus currently on grammar and even mechanical correctness, which is not enough to cultivate the higher-order writing skills of presentation (coherence, argument structures, or creative expressions, etc.). It is also possible to increase the effectiveness of AI-generated feedback by aligning it with the most popular pedagogical goals (Lim & Lee, 2023; Gong, Zhang, & He, 2023).

In addition, the literacy of students in AI should be encouraged. Instructors are advised to formulate classroom exercises that will make learners contemplate AI-generated proposals critically. Instead of passive receipt of automated corrections, students are to be advised to ensure the reflection and analysis of feedback to enhance language awareness and their independent writing skills. This strategy assists in the development of metacognition and will avoid the overdependence on the technologies (Tao & Gao, 2021).

Finally, it is recommended that future research and implementation strategies consider the perspectives of multiple stakeholders beyond teachers alone. Including insights from students, administrators, and policymakers can provide a more comprehensive understanding of how AI tools function in diverse educational settings. Broad-based participation can also contribute to the creation of more inclusive and sustainable strategies for integrating AI in language education (Zou, Kong, & Lee, 2022).

## CONCLUSION

This review has looked into the way English as a Second Language teachers view the usage of AI powered writing assistants in the classroom. The results of the analysis show that educators, on average, see the possible advantages of tools like Grammarly, QuillBot, and ChatGPT to assist students in the development of writing skills. The tools assist in giving immediate and personalized reactions that can aid in making students understand the accuracy of their language, enhance their vocabulary, and improve as independent writers. Recent studies have also expressly appreciated the potential of AI tools to accomplish differentiated instructions and enable active participation of learners (Chen, Zou, & Xie, 2020; Zhang et al., 2022; Chowdhury & Islam, 2023).

Regardless of the benefits, the review also notes major issues that will have to be dealt with in order to ensure effective integration of AI in language learning classrooms. Teachers raised concern that students will be too reliant on collected feedback offered by AI which can negatively impact the ability to think critically and produce original language. The issue of the loss of academic integrity was also addressed, especially when AI-based writing machines are applied to generate, or paraphrase significant parts of the text. Also, inadequate teacher training and confusion in terms of data privacy policies have been outlined as the biggest roadblocks in responsible AI usage (Noor et al., 2024; Liu & Yu, 2020; Suh et al., 2022).

To sum it up, even though writing assistants with AI-based technologies can be a good mentor to both learners and teachers who study English as a foreign language, its suitable implementation demands balanced and informed strategy. The educators should be equipped with the suitable training in order to make use of these tools in an effective manner. Feedback systems should be designed in accordance with classroom aim by developers, and ethical protection must be set up by the institutions in order to safeguard student data. By working on these issues in front of them, stakeholders would gain the ability to use AI to its full educational potential and, at the same time, make the use of AI acceptable in pedagogical and ethical terms. Future research should continue to explore innovative strategies that promote student agency, teacher readiness, and institutional alignment in the evolving landscape of language education technology.

## ACKNOWLEDGMENTS

This study was supported by the Faculty of Education, Universiti Kebangsaan Malaysia. It is the wish of the authors to sincerley thank the colleagues and other researchers who offered constructive criticism and suggestions, during the formulation of this paper. The recognition is also given to the educators who took part in the reviewed researches whose knowledge contributed to the conclusion of this paper. Nevertheless, both authors were sufficient in the conceptualization, as well as preparation of this review. The authors express gratitude to the people who provided individual help in manuscript drafting and editing.

## REFERENCES

1. Alqahtani, M. (2023). The impact of AI-powered writing tools on ESL learners' writing proficiency. TESOL Journal, 14(2), 120–135.
2. Chen, J., Zou, B., & Xie, H. (2020). AI-based writing feedback for EFL learners: Teachers’ and students’ perceptions. ReCALL, 32(3), 278–294.
3. Chen, Y., Liu, X., & Wang, Z. (2022). Assessing the use of Grammarly in ESL classrooms: Teacher concerns and student writing quality. Computer Assisted Language Learning, 35(5–6), 845–861.
4. Cheng, L., Wang, S., & Song, H. (2021). Teacher readiness for integrating AI into language instruction. Language Learning & Technology, 25(2), 22–39.

5. Chowdhury, N., & Islam, M. (2023). Enhancing L2 writing with AI tools: A study of learner motivation and teacher feedback. Journal of Language and Educational Research, 7(1), 45–59.
6. Ghavifekr, S., & Rosdy, W. A. W. (2020). Teachers' perceptions on integrating AI in teaching: Opportunities and challenges. International Journal of Instruction, 13(3), 897–914.
7. Gong, Y., Zhang, Y., & He, X. (2023). Teacher mediation of AI writing feedback in L2 instruction. Language Teaching Research. Advance online publication.
8. Huang, Y., Wang, Y., & Wu, S. (2023). AI-assisted feedback for ESL students: Pedagogical applications and outcomes. Educational Technology & Society, 26(1), 77–91.
9. Krause, J., & Stark, R. (2023). Predicting teacher attitudes toward AI in language education. Computers & Education, 189, 104598.
10. Lim, H., & Lee, J. (2023). Perceptions of AI-based grammar checkers among ESL teachers and their pedagogical implications. Journal of Second Language Writing, 60, 101040.
11. Liu, H., & Yu, M. (2020). Data privacy concerns in AI writing tools: Teacher perspectives and ethical implications. Journal of Educational Technology Development and Exchange, 13(1), 41–55.
12. Liu, X., Wang, Q., & Tan, J. (2023). AI in academic writing: ESL teachers' experiences with QuillBot and Grammarly. Asia-Pacific Education Researcher, 32(4), 655–669.
13. Luo, L., & Yang, S. (2023). Concerns and challenges of AI writing tools: An ESL teacher perspective. Language, Learning and Technology, 27(1), 123–140.
14. Noor, S., Rahman, A., & Ismail, R. (2024). ESL teachers' concerns about AI integration in writing instruction: A case study. International Journal of Educational Technology in Higher Education, 21(1), 33.
15. Suh, Y., Choi, E., & Park, M. (2022). Developing digital readiness among teachers: Lessons for AI integration. Educational Research for Policy and Practice, 21(2), 137–154.
16. Tao, Y., & Gao, M. (2021). Critical engagement with AI-generated feedback: Teachers' roles in L2 writing instruction. Computer-Assisted Language Learning Electronic Journal, 22(2), 1–17.
17. Xie, Y., Zheng, S., & Wang, L. (2021). The role of AI feedback in developing ESL learners' self-editing skills. Language Learning & Technology, 25(3), 88–104.
18. Yang, H., & Evans, S. (2023). Integrating AI in English writing instruction: Teacher perspectives and challenges. Language Teaching Research Quarterly, 25, 33–51.
19. Zawacki-Richter, O., Marín, V. I., Bond, M., & Gouverneur, F. (2019). Systematic review of research on artificial intelligence applications in higher education – where are the educators? International Journal of Educational Technology in Higher Education, 16(1), 39.
20. Zhang, Y., Lin, M., & Wang, J. (2022). Improving ESL students' writing with AI tools: A teacher's viewpoint. CALL-EJ, 23(1), 72–88.
21. Zhou, L., Tang, S., & Fan, J. (2023). Adaptive feedback in AI writing assistants: ESL teacher implementation in practice. The Electronic Journal for English as a Second Language (TESL-EJ), 27(1), 1–19.
22. Zou, D., Kong, L., & Lee, A. (2022). Towards inclusive AI in education: Exploring stakeholders' perspectives. Australasian Journal of Educational Technology, 38(6), 130–145.