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A phenomenological study of Chinese students' and teachers' experiences with smart classroom writing tools

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Abstract

Aim: This study examined the experiences of Chinese senior high school students and their English teachers in using artificial intelligence (AI)–assisted writing tools within a smart classroom setting. It aimed to determine how these technologies influence students' writing practices, engagement, and confidence in English academic writing.

Methodology: A qualitative phenomenological research design was employed to explore participants' lived experiences. Data were gathered through semi-structured interviews with selected Grade 11 and Grade 12 students and their English teachers in a private school in the Philippines. These participants regularly utilized AI-assisted writing platforms during writing activities. The collected data were analyzed using thematic analysis to identify emerging patterns and themes.

Results: The findings revealed six major themes: technology-supported writing confidence, technology-supported learning beyond traditional writing, continuous revision through automated feedback, improving writing accuracy and language awareness, overreliance on automated corrections, and technical limitations in smart classroom environments.

Conclusion: The study concludes that AI-assisted writing tools can enhance students' engagement and writing development when used as complementary instructional resources. Effective integration requires guided use to ensure critical evaluation and the development of independent writing skills.

Keywords: *AI-assisted writing tools, smart classroom learning, English writing, phenomenological research, educational technology*

INTRODUCTION

The rapid advancement of digital technologies has significantly transformed contemporary educational practices, particularly in language learning environments. The integration of artificial intelligence (AI), digital platforms, and collaborative tools has contributed to the development of smart classrooms, where technology is embedded in instructional processes to support more interactive and learner-centered environments (Martin & Bolliger, 2018; Zhang & Aslan, 2021). These technology-enhanced settings enable students to engage more actively in academic tasks and access immediate feedback during learning activities.

In language education, writing is widely recognized as a complex skill that requires learners to manage multiple linguistic and cognitive processes, including grammar, vocabulary, and the organization of ideas (Hyland, 2019; Song & Song, 2023). To address these challenges, educators have increasingly integrated AI-assisted writing tools that provide automated feedback and support the revision process. These tools allow learners to identify errors, refine their texts, and improve clarity during writing activities (Zhang & Aslan, 2021).

In the Philippine educational context, the integration of digital technologies has been increasingly emphasized to enhance teaching and learning processes. National initiatives promoting digital transformation in education, including the integration of information and communication technology (ICT) and technology-supported instruction, have encouraged schools to adopt smart classroom environments. Educational institutions have begun implementing digital learning platforms and technology-supported tools to improve student engagement and academic performance (Tria,

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2020). In language learning, these developments create opportunities to strengthen students' writing skills through guided and technology-enhanced instruction.

Despite the potential benefits of AI-assisted writing tools, several concerns remain. Some studies suggest that excessive reliance on automated feedback may limit students' independent writing abilities and critical thinking skills. Moreover, much of the existing research focuses on measurable outcomes such as writing accuracy and performance rather than examining how students and teachers experience these technologies in real classroom settings.

Although previous studies have examined the effectiveness of AI-assisted writing tools, there is limited research that explores the lived experiences of both students and teachers in smart classroom environments, particularly within the Philippine context. Therefore, this study aims to explore how Chinese senior high school students and their English teachers experience the use of AI-assisted writing tools in a smart classroom setting.

Review of Related Literature and Studies

Smart Classrooms in Language Education

The development of smart classroom environments reflects the continuous transformation of educational practices driven by digital technologies. Contemporary classrooms increasingly incorporate artificial intelligence, digital platforms, and communication tools to enhance instructional delivery and learner engagement. Studies have shown that the integration of AI and digital learning technologies significantly influences how teaching is conducted and how students participate in learning activities (Zhang & Aslan, 2021). Smart classrooms typically combine interactive systems, digital resources, and collaborative platforms to create more dynamic and participatory learning environments.

In language education, smart classrooms provide access to various digital tools that support writing development. These include online writing platforms, collaborative editing tools, and automated feedback systems that assist learners throughout the writing process. Digital writing environments enable students to draft, revise, and refine their work while interacting with technological tools and peer feedback, supporting a process-oriented approach to writing (Zhang & Aslan, 2021). This approach emphasizes writing as a continuous cycle of revision and reflection rather than a one-time product.

Furthermore, smart classroom technologies contribute to increased student engagement in writing activities. Technology-supported environments encourage interaction among learners, digital tools, and feedback systems, allowing students to experiment with ideas and improve their writing strategies. As a result, learners may develop greater confidence in writing while enhancing their awareness of language use and structure.

AI-Assisted Writing Tools in Language Learning

The increasing integration of artificial intelligence in education has contributed to the development of AI-assisted writing tools that support language learning. These tools provide automated feedback on grammar, vocabulary, and sentence construction during the writing process. AI-powered writing systems function as interactive support mechanisms that support learning and feedback processes in digital environments (Zhang & Aslan, 2021). The availability of immediate feedback enables students to revise their work continuously while remaining actively engaged in writing tasks.

Recent studies further indicate that AI-supported feedback promotes iterative revision and enhances learners' awareness of language patterns. Through repeated interaction with automated suggestions, students are able to recognize recurring errors and improve the overall quality of their written output (Yan Ye et al., 2024). This process contributes to the development of writing confidence and more effective writing strategies.

Despite these advantages, the use of AI-assisted writing tools also presents challenges. Emerging research suggests that excessive dependence on automated feedback may limit learners' ability to critically evaluate their own writing and develop independent editing skills (Song & Song, 2023). When students rely heavily on AI-generated corrections, the writing process may become mechanical rather than reflective. In this context, the role of teachers remains essential. Educators guide students in interpreting automated feedback and applying revisions appropriately, ensuring that AI tools function as supportive resources rather than substitutes for human instruction, as effective integration of artificial intelligence in education requires proper pedagogical guidance (Zhang & Aslan, 2021).

Technology Integration in Language Learning Contexts

The integration of artificial intelligence and digital technologies in education continues to expand across various learning environments. Research indicates that AI-based tools can enhance learning experiences by providing personalized feedback, adaptive support, and automated assistance during academic tasks (Zhang & Aslan, 2021). In

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language learning contexts, these technologies can help students improve writing accuracy while encouraging independent learning.

Digital writing environments also foster interactive and collaborative learning. Learners can engage in writing tasks through collaboration, peer feedback, and continuous revision, which supports both individual skill development and shared knowledge construction (Zhang & Aslan, 2021). These environments allow students to observe different writing approaches and refine their own strategies.

Despite these advantages, effective technology integration requires careful instructional planning. Artificial intelligence should be used to support learning objectives rather than replace traditional teaching practices (Luckin et al., 2022). Teachers play a critical role in facilitating responsible use of digital tools while promoting critical thinking and reflective learning among students.

Synthesis and Research Gap

Existing studies demonstrate the potential of smart classroom technologies and AI-assisted writing tools in supporting language learning. These technologies provide immediate feedback that encourages revision and helps learners improve their writing accuracy and awareness of language structures (Zhang & Aslan, 2021; Yan Ye et al., 2024). Additionally, digital learning environments promote engagement, collaboration, and continuous writing development.

However, much of the current literature focuses primarily on measurable outcomes such as writing performance and linguistic accuracy. There is limited research that examines how students and teachers experience the use of AI-assisted writing tools in real classroom settings. Understanding these experiences is essential because the effectiveness of educational technologies depends not only on their features but also on how users interact with them in instructional contexts.

Moreover, there is a lack of studies that explore these experiences within the Philippine educational context, particularly among Chinese learners in English language instruction. This gap highlights the need for research that focuses on the lived experiences of both students and teachers using AI-assisted writing tools in smart classroom environments.

This study addresses this gap by exploring how participants interpret and utilize AI-assisted writing technologies. By examining these experiences, the study aims to provide insights into how digital writing tools influence writing practices, student engagement, and instructional strategies in contemporary language education.

Theoretical Framework

This study is anchored in theoretical perspectives that explain how learners and teachers interact with digital technologies in educational settings. In smart classroom environments, the effectiveness of digital tools depends not only on their technical capabilities but also on how users perceive, adopt, and engage with these technologies. To examine how students and teachers experience the use of AI-assisted writing tools in English writing instruction, this study is guided by the Technology Acceptance Model (TAM) and Self-Determination Theory (SDT).

The Technology Acceptance Model, introduced by Davis (1989), explains how individuals decide to adopt new technologies based on their perceptions. The model highlights two key factors: perceived usefulness and perceived ease of use. Perceived usefulness refers to the extent to which users believe that a technology enhances their performance, while perceived ease of use refers to the degree to which the technology is considered effortless to use. When digital tools are perceived as both useful and easy to operate, users are more likely to adopt and integrate them into their activities (Venkatesh & Davis, 2000). In the context of smart classrooms, this model explains how students and teachers decide to use AI-assisted writing tools that provide automated feedback on grammar, vocabulary, and sentence construction. Research also indicates that these perceptions significantly influence the successful integration of educational technologies in learning environments (Teo, 2022).

While TAM explains technology adoption, Self-Determination Theory, developed by Deci and Ryan (1985), provides a framework for understanding the motivational factors that sustain engagement in learning. SDT emphasizes three fundamental psychological needs: autonomy, competence, and relatedness. Autonomy refers to learners' ability to make decisions about their learning processes, competence relates to the development of skills and a sense of mastery, and relatedness involves meaningful interaction with others. In technology-supported writing instruction, these components are evident as students independently use AI writing tools (autonomy), improve their writing skills through feedback and revision (competence), and interact with teachers and peers within the classroom environment (relatedness) (Ryan & Deci, 2023).

Together, TAM and SDT provide a comprehensive framework for understanding how AI-assisted writing technologies influence both the adoption and use of digital tools and the motivation of learners. These theories support

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the phenomenological approach of the study by explaining how participants perceive, experience, and interpret the use of AI-assisted writing tools in smart classroom environments. Through this lens, the study examines how technology adoption and motivational factors shape students' engagement, writing practices, and overall learning experiences.

Conceptual Framework

Based on the Technology Acceptance Model and Self-Determination Theory, this study proposes a conceptual framework that explains how AI-assisted writing tools influence students' writing experiences and instructional practices in smart classroom environments. The framework illustrates how the use of digital writing technologies affects users' perceptions of usefulness and motivation, which in turn shape the lived experiences of both students and teachers.

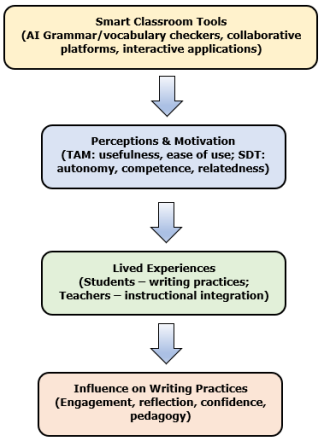

Figure 1. Conceptual Framework of the Study

As shown in Figure 1, AI-assisted writing tools, such as grammar checkers and collaborative writing platforms, influence users' perceptions of usefulness and ease of use, as well as their levels of motivation. These factors shape how students and teachers experience the use of technology in writing instruction. These experiences subsequently influence students' writing practices, engagement, and confidence, as well as teachers' instructional strategies and integration of digital tools in the classroom.

Statement of the Problem

The integration of artificial intelligence and digital technologies in education has led to the increasing use of AI-assisted writing tools in smart classroom environments. These technologies provide automated feedback on grammar, vocabulary, and sentence structure, which can support students in developing writing skills and encourage continuous revision during the writing process. In English language instruction, writing remains a complex skill that requires learners to manage linguistic accuracy, organization of ideas, and effective expression.

While previous studies have examined the effectiveness of AI-supported writing tools in improving language accuracy and writing performance, fewer studies have explored how students and teachers experience the use of these technologies in actual classroom settings. Understanding these experiences is important because the successful integration of digital learning tools depends not only on technological availability but also on how learners and educators interact with these technologies during instructional activities.

In technology-enhanced learning environments such as smart classrooms, AI-assisted writing tools may influence students' writing practices, engagement in writing tasks, and confidence in producing academic texts. At the same time, teachers must adapt their instructional strategies to integrate these technologies effectively into writing instruction. Despite the growing use of artificial intelligence in education, limited research has examined how both students and teachers interpret and experience the integration of AI-assisted writing tools in English writing instruction within Philippine educational contexts.

Therefore, this study investigates the experiences of Chinese senior high school students and their teachers in using AI-assisted writing tools in a smart classroom environment in order to understand how these technologies influence writing practices, learning engagement, and instructional strategies in English writing instruction.

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Research Objectives

General Objective

To explore the experiences of Chinese senior high school students and English teachers in using AI-assisted writing tools within a smart classroom environment for English writing instruction.

Specific Objectives

1. To examine students' experiences in using AI-assisted writing tools during English writing activities.
2. To explore teachers' experiences in integrating AI-assisted writing technologies into classroom instruction.
3. To determine how AI-assisted writing tools influence students' writing practices, engagement, and revision processes.
4. To analyze how teachers perceive the impact of smart classroom writing technologies on their instructional strategies.

Research Questions

1. How do students describe their experiences when using AI-assisted writing tools that provide automated grammar and vocabulary feedback?
2. How do teachers describe their experiences in integrating AI-assisted writing tools into English writing instruction?
3. How do students perceive the influence of AI-assisted writing tools on their writing practices and engagement in writing tasks?
4. How do teachers perceive the influence of smart classroom writing tools on their instructional strategies?

Methodology

Research Design

This study employed a qualitative interpretive phenomenological research design to examine the experiences of students and teachers who use AI-assisted writing tools in smart classroom environments. Interpretive phenomenology, grounded in the philosophical tradition of Heidegger, was selected because it focuses on understanding how individuals interpret and make meaning of their lived experiences within specific contexts.

This approach is appropriate for the study as it aims to explore how students and teachers perceive, experience, and interpret the use of AI-assisted writing tools in English writing instruction rather than to measure outcomes quantitatively. Through this design, the study captures the meanings participants attach to their interactions with technology-supported writing tools, including how these tools influence their writing practices, engagement, and instructional strategies.

By using an interpretive phenomenological approach, the study provides a deeper understanding of how digital technologies are experienced in real classroom settings. This allows the researchers to examine not only the use of AI-assisted writing tools but also the contextual factors that shape how students and teachers engage with these technologies in smart classroom environments.

Population and Sampling

The study focused on participants who had direct experience using AI-assisted writing tools in English writing instruction. The participants consisted of Chinese senior high school students and Chinese English teachers from a private school in Laguna, Philippines, where smart classroom technologies are integrated into classroom instruction. These participants regularly use AI-supported writing platforms such as DeepSeek, Yudao, Baishan, and Douban during writing activities.

Sampling Technique. Purposive sampling was used to select participants with relevant experience related to the phenomenon being investigated. This sampling technique is appropriate for qualitative research as it allows the selection of individuals who can provide rich and meaningful insights into the research topic. By selecting participants who actively interact with AI-assisted writing tools in classroom settings, the study was able to gather detailed descriptions of how these technologies influence writing development and instructional practices.

Participants. The study involved a total of twelve participants, consisting of five senior high school students and seven English teachers who regularly use AI-supported writing tools in English writing instruction. The student participants were enrolled in classes where digital writing platforms are integrated into classroom activities to support

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drafting, revision, and language improvement. Meanwhile, the teacher participants were English instructors who incorporate AI-assisted writing tools into their instructional practices to guide students in revising drafts and improving language accuracy.

Inclusion and Exclusion Criteria. Participants were selected based on specific inclusion criteria. Student participants were required to be currently enrolled in senior high school English classes where AI-assisted writing tools are integrated into classroom instruction and to have at least three to six months of experience using these tools during writing activities. Teacher participants were required to be English instructors who actively integrate AI-assisted writing tools into their teaching practices and have at least six months of experience using these technologies in classroom instruction.

Exclusion criteria included students and teachers who had no prior experience using AI-assisted writing tools, those who used such tools only occasionally or outside the classroom context, and individuals who were not directly involved in technology-supported writing instruction.

Including both students and teachers enabled the study to capture multiple perspectives regarding the integration of AI-assisted writing technologies in smart classroom environments. Students described their learning experiences with AI writing tools, while teachers provided insights into how these technologies influence instructional strategies and classroom interaction.

Research Instruments

The primary research instrument used in this study was a semi-structured interview guide designed to explore the experiences of students and teachers using AI-assisted writing tools in smart classroom environments. The interview questions were open-ended to allow participants to describe their experiences, perceptions, and reflections regarding the use of digital writing platforms during English writing instruction.

The interview guide consisted of approximately 8–10 core questions aligned with the research objectives, focusing on participants' experiences when using AI-supported writing tools, the perceived influence of these tools on writing development, and teachers' instructional practices in technology-supported classrooms. Follow-up questions were used when necessary to encourage participants to elaborate on their responses and provide specific examples of their experiences.

Prior to data collection, the interview guide underwent content validation by experts in language education and qualitative research to ensure the clarity, relevance, and alignment of the questions with the objectives of the study. The feedback from the experts was incorporated to refine the wording and structure of the interview questions.

Data Collection

Data were collected through individual semi-structured interviews with the selected participants. The participants consisted of five senior high school students and seven English teachers from a private school in Laguna, Philippines. These students and teachers are part of an international academic program that integrates smart classroom technologies into English writing instruction.

Data collection was conducted during the period of November-December 2025. Prior to the interviews, permission was obtained from the school administration, and participants were informed about the purpose of the study. Interview schedules were arranged at times convenient for the participants.

Each interview lasted approximately 30–45 minutes and was conducted in a quiet setting to allow participants to share their experiences comfortably. With participants' consent, the interviews were audio-recorded and supplemented with field notes to capture relevant contextual information.

Following the interviews, the recorded data were transcribed and reviewed carefully to ensure accuracy before proceeding to the data analysis stage.

Treatment of Data

The interview data were analyzed using thematic analysis following the procedure proposed by Braun and Clarke (2006). This approach is widely used in qualitative research to identify patterns and themes in participants' experiences.

First, the researchers familiarized themselves with the data by repeatedly reading the interview transcripts to gain a comprehensive understanding of the participants' responses. Next, meaningful segments of data were coded to identify key ideas related to participants' experiences with AI-assisted writing tools. The coded data were then grouped into broader categories that represented emerging themes. These themes were carefully reviewed and refined to ensure that they accurately reflected the participants' perspectives. Finally, the themes were organized into a narrative

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explanation describing how students and teachers experience the use of AI-supported writing technologies in smart classroom environments.

To enhance the credibility and trustworthiness of the findings, the researchers employed several validation strategies. Member checking was conducted by sharing selected interpretations with participants to confirm the accuracy of the findings and ensure that their experiences were correctly represented. In addition, peer debriefing was utilized, wherein the researchers consulted with colleagues knowledgeable in qualitative research to review the coding process and thematic development. These procedures helped strengthen the validity and reliability of the study.

Ethical Considerations

Ethical standards were strictly observed throughout the research process to protect the rights and welfare of the participants. Prior to data collection, permission to conduct the study was obtained from the school administration. Participants were informed about the purpose of the study, and their voluntary participation was emphasized, including their right to withdraw from the study at any time without any consequences.

Informed consent was obtained from all participants before the interviews were conducted. To ensure confidentiality and anonymity, identifying information was removed from the transcripts, and pseudonyms were used to represent the participants. All data collected, including audio recordings and transcripts, were stored securely and were accessible only to the researchers. The data were used solely for academic and research purposes.

These ethical measures ensured that the study complied with established research standards and protected the privacy, dignity, and rights of all participants.

Results and Discussion

This section presents the findings derived from the thematic analysis of interview data gathered from Chinese senior high school students and English teachers who use AI-assisted writing tools in smart classroom environments. The results were organized according to recurring themes that reflect the participants' experiences when integrating artificial intelligence–supported writing technologies into English writing instruction. Each theme is supported by selected participant statements and is interpreted in relation to existing educational literature.

Table 1
Summary of Major Themes Identified from the Interview Data

Major Theme	Description
Technology-Supported Writing Confidence	AI writing tools increased students' confidence by providing immediate grammar and vocabulary feedback.
Technology-Supported Learning Beyond Traditional Writing	Digital writing platforms encouraged continuous revision and experimentation with sentence construction.
Continuous Revision Through Automated Feedback	Students revised their drafts multiple times using AI suggestions during the writing process.
Improving Writing Accuracy and Language Awareness	AI feedback helped learners recognize recurring language errors and improve accuracy.
Overreliance on Automated Corrections	Some students depended too heavily on automated suggestions without understanding grammar rules.
Technical Limitations in Smart Classroom Environments	Internet connectivity and system performance occasionally disrupted classroom use of writing platforms.

The themes presented in Table 1 illustrate how AI-assisted writing tools shape both students' writing development and teachers' instructional practices in smart classroom environments.

1. **Student Experiences with AI-Assisted Writing Tools**

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1.1 Technology-Supported Writing Confidence

One of the most prominent themes emerging from the interviews was the development of writing confidence among students when using AI-assisted writing tools. Several participants explained that automated feedback allowed them to identify grammatical errors and revise sentences immediately while drafting their essays. One student stated:

> ***S1:*** *"When I write essays using the AI tool, I can immediately see my grammar mistakes and correct them before submitting my work."*

Another student described how this feature reduced anxiety during writing activities:

> ***S3:*** *"Before using the writing platform, I was afraid to write long paragraphs because I might make mistakes. Now I feel more confident because the system shows corrections."*

These responses suggest that the availability of automated feedback supports students' confidence in composing English texts. Instead of fearing grammatical mistakes, students feel more comfortable experimenting with ideas and sentence structures. The immediate nature of AI-generated feedback allows learners to revise errors while still engaged in the writing process.

Teachers also observed similar changes in students' attitudes toward writing tasks. Several instructors noted that students appeared more willing to produce longer paragraphs and engage more actively in writing activities when digital writing tools were available.

These findings are consistent with previous research indicating that automated writing feedback systems can increase learners' engagement and confidence in writing tasks (Zhang & Aslan, 2021). By providing immediate support during drafting, AI-assisted tools help reduce writing anxiety and encourage students to participate more actively in academic writing activities.

1.2. Technology-Supported Learning Beyond Traditional Writing

Another theme identified in the interviews relates to how smart classroom technologies extend writing learning beyond traditional classroom practices. Students explained that digital writing platforms allow them to revise their work repeatedly while experimenting with different ways of expressing their ideas. One participant shared:

> ***S2:*** *"When I use the AI writing tool, I revise my paragraph several times until it becomes clearer."*

Another student described the process as a form of continuous learning:

> ***S4:*** *"The system lets us check corrections immediately, so we can improve our writing before submitting it."*

These experiences suggest that digital writing platforms encourage students to treat writing as a process rather than a single task. Instead of submitting only one draft, students repeatedly revise their work while refining sentence structure and clarity of ideas.

Such technology-supported environments promote iterative writing practices, where learners continuously revise and improve their texts based on feedback. This process-oriented approach aligns with research indicating that digital writing tools support active engagement and reflective learning during writing instruction (Zhang & Aslan, 2021).

2. Influence of AI-Assisted Writing Tools on Writing Development

2.1. Continuous Revision Through Automated Feedback

The interviews also revealed that automated feedback plays an important role in encouraging repeated revision of written texts. Students reported that AI-assisted writing tools allow them to detect mistakes during the writing process rather than waiting for teacher feedback after submission. One student explained:

> ***S5:*** *"When I see the corrections from the AI tool, I revise my sentences until they become clearer."*

Teachers similarly observed that the availability of automated feedback motivates students to review their work more carefully before submitting assignments. One teacher commented:

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T3: *"Students revise their essays several times because they want to correct the mistakes suggested by the system."*

These findings indicate that AI-assisted writing tools encourage students to engage in continuous revision, which is a key element of effective writing development. Instead of producing a single draft, students repeatedly refine their sentences and ideas in response to feedback.

Previous studies have also shown that automated writing feedback systems promote revision practices and support improvements in writing quality (Yan Ye et al., 2024). By enabling learners to correct mistakes during the drafting stage, AI-supported platforms strengthen the development of reflective writing habits.

2.2. Improving Writing Accuracy and Language Awareness

Another theme highlights how AI-assisted writing tools contribute to students' awareness of language structures. Teachers observed that automated feedback helps students recognize recurring grammatical mistakes and vocabulary problems during writing activities. One teacher stated:

T2: *"The AI writing tool helps students notice grammar mistakes immediately, so they learn from the corrections."*

Through repeated exposure to automated suggestions, students gradually develop greater awareness of grammar rules and sentence construction. This process allows learners to identify common language errors and apply corrections more effectively in future writing tasks.

Research in technology-enhanced language learning similarly indicates that automated feedback systems can improve learners' grammatical awareness and support language development when integrated into classroom instruction (Zhang & Aslan, 2021). As students interact with AI-generated suggestions, they become more attentive to sentence structure, vocabulary usage, and clarity of expression.

3. Challenges in Using AI-Assisted Writing Tools

3.1. Overreliance on Automated Corrections

Despite the benefits of AI-assisted writing tools, the interviews also revealed certain challenges related to their use. One concern raised by teachers was the tendency of some students to rely too heavily on automated corrections without fully understanding the grammar rules behind them. One teacher explained:

T4: *"Some students just accept the correction without thinking about the grammar rule."*

This observation suggests that while AI tools provide helpful assistance, excessive reliance on automated feedback may limit students' independent editing abilities. When learners accept corrections without reflection, the writing process may become mechanical rather than analytical.

Teachers emphasized the importance of guiding students to critically evaluate AI suggestions. Rather than simply accepting automated corrections, learners should be encouraged to review the feedback carefully and understand the linguistic principles behind each change.

Previous studies have similarly highlighted the need for balanced integration of artificial intelligence technologies in writing instruction (Godwin-Jones, 2020). AI-supported writing tools should function as learning aids rather than replacements for critical thinking and teacher guidance.

3.2. Technical Limitations in Smart Classroom Environments

Another challenge reported by participants relates to technical limitations encountered when using digital writing platforms. Some teachers mentioned that system performance and internet connectivity occasionally affected the smooth implementation of writing activities. One teacher commented:

T5: *"Sometimes the system becomes slow when many students are using it at the same time."*

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Such technical difficulties may interrupt classroom instruction and reduce the efficiency of technology-supported learning activities. When internet connectivity becomes unstable or the system responds slowly, students may experience difficulties accessing AI feedback or completing writing tasks.

Despite these limitations, participants generally agreed that AI-assisted writing tools remain valuable resources when used appropriately. Teachers emphasized that effective integration requires reliable technological infrastructure as well as proper instructional guidance.

Overall, the findings indicate that AI-assisted writing tools have the potential to enhance writing instruction in smart classroom environments. When supported by effective pedagogy and reliable technological infrastructure, these tools can improve students' writing confidence, encourage continuous revision, and strengthen language awareness.

From an educational perspective, the findings suggest important implications for various stakeholders. For teachers, the results highlight the need to guide students in critically evaluating automated feedback rather than relying on it passively. For school administrators and educational leaders, the study emphasizes the importance of providing adequate technological infrastructure and support systems to ensure the effective implementation of smart classroom technologies. In addition, curriculum developers may consider integrating AI-assisted writing tools into language programs to support process-oriented writing instruction. Teacher education programs may also benefit from incorporating training on the pedagogical use of artificial intelligence in writing instruction to better prepare educators for technology-enhanced learning environments.

Conclusions

This study explored the experiences of Chinese senior high school students and English teachers using AI-assisted writing tools in smart classroom environments. The findings revealed six major themes that describe how artificial intelligence writing platforms influence students' writing development and teachers' instructional practices.

The findings indicate that artificial intelligence writing platforms play an important role in supporting students' writing development by providing immediate feedback on grammar, vocabulary, and sentence structure. Through automated suggestions, students were able to identify errors during the drafting stage and revise their work multiple times, which contributed to improved writing confidence and greater awareness of language structures.

The results also indicate that AI-assisted writing tools encourage a more process-oriented approach to writing. Instead of submitting a single draft, students tended to revise their essays repeatedly based on automated feedback. Teachers observed that this practice helped learners become more attentive to sentence construction, grammar accuracy, and the organization of their ideas. These findings highlight the potential of technology-enhanced writing environments to support active engagement in writing instruction.

However, the findings also highlight several challenges related to the use of AI-supported writing technologies. Some students may rely excessively on automated corrections without fully understanding the grammatical rules behind the suggestions. In addition, technical issues such as internet connectivity and system performance may occasionally affect the effective use of digital writing tools in classroom environments.

Overall, the study contributes to educational research by providing insights into how AI-assisted writing tools influence students' writing practices and teachers' instructional strategies in smart classroom environments. The findings suggest that these technologies can support writing instruction when integrated with thoughtful pedagogy and teacher guidance that encourages critical reflection and independent writing development.

Recommendations

Based on the findings of the study, several recommendations are proposed.

Teachers may integrate AI-assisted writing tools as supportive resources in English writing instruction while encouraging students to critically evaluate automated feedback. Such instructional practices may help learners understand the grammatical principles underlying suggested corrections rather than relying solely on automated responses.

Educational institutions may strengthen technological infrastructure to support the effective use of AI-supported learning tools in smart classroom environments. Reliable internet connectivity and accessible digital platforms may enhance the implementation of technology-enhanced writing instruction.

Students may use AI writing tools as learning aids that assist them in improving grammar, sentence structure, and clarity of ideas. With appropriate guidance from teachers, learners may treat automated suggestions as opportunities for reflection and improvement rather than as final corrections.

School administrators and curriculum developers may also consider incorporating AI-assisted writing technologies into digital learning strategies and language education programs to support innovative approaches to writing instruction.

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Finally, future studies may examine the use of AI-assisted writing technologies across different educational levels, institutions, and cultural contexts in order to further understand how these tools influence writing development and language learning outcomes.

REFERENCES

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly, 13*(3), 319–340. https://doi.org/10.2307/249008

Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. Springer.

Heidegger, M. (1962). *Being and time* (J. Macquarrie & E. Robinson, Trans.). Harper & Row. (Original work published 1927)

Hyland, K. (2019). *Second language writing*. Cambridge University Press.

Luckin, R., Holmes, W., Griffiths, M., & Forcier, L. B. (2022). *Intelligence unleashed: An argument for AI in education*. Pearson.

Martin, F., & Bolliger, D. U. (2018). Engagement matters: Student perceptions on the importance of engagement strategies in the online learning environment. *Online Learning, 22*(1), 205–222. https://doi.org/10.24059/olj.v22i1.1092

Song, C., & Song, Y. (2023). Enhancing academic writing skills and motivation: Assessing the efficacy of ChatGPT in AI-assisted language learning. *Frontiers in Psychology, 14*, 1260843. https://doi.org/10.3389/fpsyg.2023.1260843

Teo, T. (2022). Technology acceptance in education: Research and issues. *Educational Technology Research and Development, 70*(3), 1465–1475. https://doi.org/10.1007/s11423-021-10045-0

Tria, J. Z. (2020). The COVID-19 pandemic through the lens of education in the Philippines: The new normal. *International Journal of Pedagogical Development and Lifelong Learning, 1*(1), ep2001. https://doi.org/10.30935/ijpdll/8311

Ryan, R. M., & Deci, E. L. (2023). *Self-determination theory: Basic psychological needs in motivation, development, and wellness*. Guilford Press.

Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model. *Management Science, 46*(2), 186–204. https://doi.org/10.1287/mnsc.46.2.186.11926

Yan Ye, Zhang, X., & Liu, Y. (2024). Artificial intelligence–supported writing feedback and student revision behavior in second language writing. *Computers & Education, 203*, 104834. https://doi.org/10.1016/j.compedu.2023.104834

Zhang, K., & Aslan, A. B. (2021). AI technologies for education: Recent research and future directions. *Computers and Education: Artificial Intelligence, 2*, 100025. https://doi.org/10.1016/j.caeai.2021.100025