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INFLUENCE OF AI WRITING TOOLS ON STUDENTS' LINGUISTIC COMPETENCE

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Abstract
This research explores the impact of artificial intelligence (AI) writing tools on students' language proficiency, in particular their grammar, vocabulary, coherence, writing quality and independent writing skills. This study employed a quantitative research design, with 150 undergraduate students from Karachi and Hyderabad. The study used a questionnaire to assess the use of AI and two writing tasks under the use and non-use of AI. Data were analyzed using SPSS, employing descriptive statistics, reliability analysis, linear regression, paired sample t-test and Pearson correlation. The results indicate that using AI writing tools has a positive impact on students' language ability, including their ability to use accurate grammar, develop rich vocabulary, and produce better quality writing. The quality of students' writing was better with the assistance of AI tools than without them. But the findings also show a strong negative association between the use of AI and independent writing skills, implying that over-reliance on AI writing tools may lead to a decline in students' independent writing skills. These results indicate the mixed effects of AI writing tools, with evidence that while they improve surface writing skills, they negatively affect language learning and development, as well as independent learning ability. This research highlights the importance of judicious use of AI tools in classrooms to harness the potential benefits while avoiding potential pitfalls. The findings offer valuable guidance for teachers, students, and policymakers on how to best incorporate AI tools in academic writing.

Keywords: artificial intelligence, Linguistic Competence, writing skills, AI tools, over-reliance, language ability.

1. Introduction

The advancement of artificial intelligence (AI) technologies has brought about profound changes in education, especially in the field of academic writing. AI writing tools like ChatGPT and Grammarly are readily available and increasingly being utilized by students to help them write. These systems use sophisticated natural language processing (NLP) techniques to produce content, offer grammar suggestions, vocabulary suggestions and enhance the quality of written work. Consequently, they have evolved from being mere writing assistance to indispensable tools in the academic writing process (Akanda & Talukder, 2026; Vieriu & Petrea, 2025). Their increased prevalence has sparked questions about their impact on students' writing and language skills.

The use of AI writing technologies has grown rapidly in academia. Research suggests that many students now use AI-based writing tools for writing essays, proofreading and editing their work, and generating ideas (Freeman, 2025). This usage pattern mirrors the overall transition to technology-mediated and enhanced learning environments, in which efficiency and convenience play a critical role. Moreover, systematic reviews have shown that AI writing tools have a positive impact on students' writing skills, focusing on grammar and vocabulary (Zheldibayeva et al., 2025; RSIS International, 2025). AI writing tools offer instant feedback, enabling students to detect and rectify errors as they write, potentially improving their writing performance. As a result, AI writing tools are recognized as beneficial learning and development tools.

However, the growing use of AI writing tools has led to a debate about their effects on students' linguistic competence. Linguistic competence is the capacity to use language appropriately and

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appropriately in various contexts. This includes several elements such as grammar, vocabulary, syntax and discourse. In particular, linguistic competence in academic writing not only relates to the proper use of language but also to the effective organization of ideas, building of arguments and communicating with the target audience (Strochenko et al., 2025). Consequently, to evaluate the effect of AI writing tools, it is important to understand the impact of these tools on both form and content of language use. On the one hand, a number of studies point to the benefits of using AI writing tools for improving students' writing. AI-powered tools are particularly helpful in enhancing grammar skills, as they can identify and correct errors students may miss (Farhan, 2025). Moreover, AI writing tools often offer vocabulary improvement suggestions, helping students to express themselves with a more diverse and rich vocabulary. The use of AI writing tools has also been found to boost students' confidence and motivation by alleviating the cognitive load of writing (Rashid et al., 2025). Finally, AI writing tools can be used as learning tools for students with language difficulties, particularly those for whom English is a second language, to help them produce and revise their writing, thereby enhancing their language proficiency (Song & Song, 2023; Motlagh et al., 2023).

Additionally, AI writing tools support personalized learning through individualized feedback based on students' writing styles. This personalized feature enables students to engage in the writing process through writing cycles, which involve revising and rewriting. These approaches have been shown to improve writing outcomes and foster learning, development and growth (Vieriu & Petrea, 2025). Moreover, the use of AI in education has been linked to improved efficiency, as students are able to produce more accurate and efficient writing. In this sense, AI writing tools are seen as valuable educational tools that can complement existing teaching practices and improve the learning experience (UNESCO, 2023). But, in addition to these advantages, there are also concerns about the negative impacts of AI writing tools on students' language proficiency. A major concern is the potential for over-reliance on AI content. Overuse of AI tools by students could lead to them becoming passive learners rather than active contributors to the writing process. This may decrease their involvement in the important cognitive processes of generating ideas, forming sentences, and solving problems (Farhan, 2025). Ultimately, this can lead to a shallow language knowledge, which prioritizes error correction over deeper language knowledge.

A significant concern is a loss of writing skills. Research has indicated that over-reliance on AI technologies can result in a decline in students' independent writing skills, particularly in terms of producing coherent and well-organized text (Jin et al., 2025). This has been referred to as the "agency gap," in which students' performance with the AI is greater than their language proficiency. In these instances, the enhancements in writing quality may be a function of the AI tools rather than the students' skills. As a result, students may find it challenging to showcase their linguistic competence in the absence of AI tools. Moreover, the use of AI writing tools has also been associated with decreased critical thinking and creativity. AI writing often adheres to certain conventions and formulas which can restrict students from fully exploring different linguistic possibilities to develop their unique writing voice (Chaparro-Banegas et al., 2024). This might produce well-structured and error-free writing, but it might also lead to a lack of creativity and originality. This is a major concern in academic writing, where critical thinking and analysis skills are crucial. Overuse of AI writing tools may reduce students' abilities to develop arguments, critique information and put forth original ideas.

Beyond the concerns outlined above, there is some evidence that AI writing technologies can affect the development of syntactic complexity and discourse skills. By promoting clear and simple sentences, AI writing tools may hinder the use of complex grammatical structures (Pryma et al., 2025). This may enhance readability but could also limit the development of more sophisticated linguistic skills required for more sophisticated forms of academic writing.

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In the long run, this might lead to a contraction in students' linguistic skills, making it harder for them to meet the demands of different writing tasks and readers. While there is a growing body of research on AI writing assistive tools, little research has examined the effect of AI writing tools on language learning. Much of the research to date has focused on writing performance, such as the improvement in grammar and coherence, rather than the cognitive and linguistic processes that are involved (Akanda & Talukder, 2026). Furthermore, a considerable portion of the research is based on self-reports, which may not be a reliable measure of writing competence. Finally, there is a need for comparative analyses of students' writing performance both with and without the use of AI tools to establish whether improvements in writing are due to a learning effect or the use of the AI writing tools.

In light of these challenges, there is a need for empirical studies that offer more insight into the effects of AI writing tools on students' linguistic abilities. This research should include objective indicators of writing quality, such as grammar, vocabulary usage and coherence, and also take into account how AI is used. Through such research, researchers can provide more robust and valuable insights into the impact of AI on language learning. Thus, the main aim of this research is to investigate the impact of AI writing tools on students' linguistic competence. The study seeks to determine whether AI tool usage has a positive or negative impact on various aspects of linguistic competence, such as grammar, vocabulary and coherence. Through a systematic research design and empirical approach, this study aims to add to the existing literature and offer insights and guidelines for the successful implementation of AI tools in the classroom.

2. Literature review

AI Writing Tools

AI writing tools are computer programs that use artificial intelligence (AI) - specifically, natural language processing (NLP) - to help people write, edit and enhance text. They offer capabilities like grammar checking, word suggestions, rephrasing, and writing generation (Akanda & Talukder, 2026). These include tools like ChatGPT, Grammarly and QuillBot, which provide real-time feedback and writing assistance. Studies show that these tools provide students with "digital scaffolds" that support them to enhance writing accuracy and fluency (Marzuki et al., 2023). Academic writing is increasingly incorporating AI writing tools for their efficiency and real-time feedback on linguistic elements such as grammatical accuracy, cohesion and vocabulary (Floris & Renandya, 2025). But they don't just provide feedback on errors; generative AI tools can generate text, presenting challenges around authorship, learning and skill acquisition (Shibani & Buckingham Shum, 2024).

Linguistic Competence

Linguistic competence is a person's knowledge and skill in using language appropriately and effectively in various situations. It involves several aspects, such as grammar, vocabulary, syntax, and more advanced discourse skills like coherence and cohesion (Strochenko et al., 2025). In the context of academic writing, linguistic competence goes beyond producing error-free sentences to the ability to develop coherent and coherent arguments, and to structure an argument in a coherent way (Strochenko et al., 2025). Research has shown that linguistic competence is a combination of surface-level skills (e.g., grammar and spelling) and deeper cognitive skills (e.g., idea development, discourse structure) (Pryma et al., 2025). And recent studies draw a distinction between surface linguistic competence (such as grammar and vocabulary) and deep linguistic competence (such as critical thinking, originality and grammar complexity), suggesting the need to assess both aspects when evaluating writing ability (Enriquez et al., 2024).

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Independent Writing Ability

Independent writing ability relates to students' ability to write without external help, including mechanisms of AI. This variable can be seen as the student's internalized linguistic proficiency, cognitive processing, and generation, organization and expression of ideas independently (Farhan, 2025). This is a crucial factor in assessing AI tools, as AI-assisted writing can improve writing performance, but not necessarily independent writing. This is due to an "agency gap", in which students' performance with AI is higher than when it is not, suggesting a gap between their competence and what they can do with AI manipulation (Şen, 2025).

Impact of AI Writing Tools on Linguistic Competence (H1)

Research indicates that AI writing tools play a crucial role in enhancing students' linguistic competence, especially in enhancing surface language skills. Research shows that AI tools improve grammar by detecting and correcting errors on-the-fly (Floris & Renandya, 2025; Luo, 2025). They also offer word choices, allowing students to expand their vocabulary with more advanced and nuanced words (Munawwaroh & Fahreza, 2025). Research has shown that students who use AI tools show improvement in their writing, specifically in grammar, coherence and organization (Wu, 2024). Similarly, empirical research shows that with repeated exposure to AI feedback, there are improvements in linguistic skills (Zheldibayeva et al., 2025). AI tools are especially supportive for language learners, as they lessen language barriers and aid in language learning (Jaramillo et al., 2025).

Furthermore, AI writing platforms support iterative learning, enabling students to draft and redraft their work many times, and therefore enhance the linguistic skills (Vieriu & Petrea, 2025). Furthermore, studies have also shown that AI tools increase motivation and self-confidence, given they provide students with real-time feedback and support (Rashid et al., 2025). But other researchers suggest that this enhancement primarily relates to the surface aspects of writing. Though AI tools improve students' grammar and vocabulary, it's not clear how they affect linguistic competence (Akanda & Talukder, 2026). This implies that the link between AI tools and linguistic competence is multifaceted and needs more research.

The Impact of AI on Writing (H2)

Comparative studies of AI-assisted and non-AI writing are essential in understanding the impact of AI tools. Studies show students who use AI tools write more grammatically correct and coherent texts than students who write without AI assistance (Alpar, 2025). Students receive feedback from AI tools to better structure their ideas and paragraphs, leading to better overall writing. Studies involving experimental interventions show a considerable improvement in writing using AI versus non-AI experiments. For example, AI-assisted students have better grammar, vocabulary and coherence scores (Wu, 2024). These results indicate that AI technologies are effective writing tools that improve performance results in the short term.

But this improvement is not all that it seems. A number of studies point out that while writing with AI leads to an improvement in technical quality, it may decrease creativity and critical thinking (Chaparro-Banegas et al., 2024). The suggestions provided by AI tools tend to be predictable, resulting in a lack of diversity and creativity in writing. Moreover, studies demonstrate that excessive use of AI tools can hinder students' ability to perform as well without AI assistance (Jin et al., 2025). This suggests that performance gains in AI-assisted writing may not be due to the development of writing skills, but rather the features of the AI tools. Therefore, although AI tools improve writing performance in the short run, their effect on independent writing skills in the long run is questionable. This underscores the need to compare writing with and without AI support to assess the impact of AI writing tools.

AI and Independent Writing (H3)

AI writing tools and independent writing ability have been a significant focus in recent research. Research has found that overusing AI writing tools may have a detrimental impact on

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students' independent writing skills (Farhan, 2025). Reliance on AI-generated text reduces the engagement of students in key cognitive activities like generating ideas, building sentences and evaluating their writing. Supporting this claim is research on the "agency gap" which demonstrates that students' writing performance with AI tools is often higher than their language skills (Sanz-Tejeda et al., 2025). This suggests that AI tools might give a false sense of competency, hiding deficiencies in students' writing abilities. Moreover, research shows that excessive reliance on AI tools can lead to a decrease in critical thinking and problem-solving skills (Shibani & Buckingham Shum, 2024). This passivity may result in a reliance on technology to come up with ideas. This may result in a loss of higher-order thinking skills, crucial for academic writing. Further, studies indicate that AI writing tools can restrict access to complex language constructs, which these tools tend to favour simplicity (Pryma et al., 2025). This may limit the acquisition of complex syntax, and the creativity of students' writing. However, some research indicates that the negative effects of AI tools on independent writing ability can be overcome by providing students with training. By teaching students how to appropriately use AI tools, these tools can be used as a supplement to independent writing (Biju et al., 2024). In summary, research suggests that although AI tools have many advantages, whether they positively or negatively impact independent writing ability is largely dependent on their use. Unregulated use might undermine linguistic skills, but regulated use can be beneficial.

Research Gap

The literature reviewed shows that AI writing tools have a substantial effect on students' writing, specifically facilitating grammar, vocabulary, and coherence. But these gains are often seen only in the AI assistance setting, and do not necessarily indicate linguistic competency. While there is substantial evidence for the positive effects of AI writing tools on surface-level writing skills, they may not improve deeper linguistic competence, such as independent writing and critical thinking. Comparative studies reveal the presence of an "agency gap", with students' writing scores using AI being higher than they are capable of.

Although there are increasing studies, there are some gaps. A number of studies only report subjectively measured data, which weakens their conclusions and results (Akanda & Talukder, 2026). Further, very few studies have examined writing with and without AI tools in the same group of participants, which provides insight into the effect of AI tools. So, an empirical study is needed that explores the association between AI writing tools and linguistic competence, using objective measures and comparative studies. This study seeks to fill this gap by examining the impacts of AI tools on students' grammar, vocabulary, coherence, and independent writing.

3. Methodology

This research study is based on a quantitative research design, which investigates the impact of AI writing aids on linguistic competence among students. The quantitative method is chosen due to the possibility of objectively measuring variables and testing the relationships between the use of AI and writing results statistically. Another comparative aspect is included in the study as the performance of students in their writing is evaluated in two conditions, AI-assisted and non-AI writing. This design enhances the validity of the findings as it puts the emphasis on quantifiable linguistic indicators, instead of on subjective opinions. The sample comprises 150 university-level students in the key academic institutions in Karachi and Hyderabad, Pakistan. The participants are selected through the purposive type of sampling method, and only those who are conversant with AI writing tools and are actively involved in their academic writing chores are selected. Diverse students are represented in terms of academic discipline to make sure that there is diversity in writing competence and AI usage trends. This amount of sample is also deemed to be sufficient to undertake statistical analysis and test the hypotheses.

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Two main methods are employed in the collection of data. To begin with, a structured questionnaire used to determine the level and frequency of the use of AI writing tools among the students. The questionnaire consists of Likert-scale items that help to measure trends in using AI tools and the overall attitude towards them. Second, the participants have to be involved in two writing tasks. The former is done with the help of AI writing tools whereas the latter is done without the aid of AI. This two-task method able to directly compare AI-assisted and independent writing and make a more valid assessment of the effect of AI tools. The experiment comprises of one independent and three dependent variables. The independent variable the degree of AI writing tool utilization that measured by the responses obtained using the questionnaire. Dependent variables linguistic competence score, writing performance and independent writing ability. The linguistic competence score reflects the quality of overall writing, writing performance indicates performance in the structured writing tasks and the independent writing ability is determined by performance in the non-AI writing condition. These variables have been chosen to take up both assisted and unassisted facets of writing.

The linguistic competence is measured by the use of objective and standard criteria. Accuracy of grammar is measured by determining the number of errors in each sample of writing. The richness of vocabulary is considered with the help of lexical diversity indicators; the coherence is checked with the help of structured scoring system which analyzes logical flow of ideas and their organization. Both AI-assisted and non-AI writing samples have a detailed writing evaluation rubric used to ensure consistency in scoring. This multi-dimensional measurement system guarantees that the measurement of linguistic competence of the students reliable and valid.

4. Data analysis

In this section, the statistical analysis provided based on SPSS which compare the effect of AI writing tools on linguistic competence of students. The analysis involves the descriptive statistics, reliability tests and hypothesis tests by the use of regression, paired sample t-test and correlation. A good interpretation is given at the end of each table to interpret the results.

4.1 Descriptive Statistics

Measures of central tendency and dispersion of the important variables were calculated using descriptive statistics.

Table 4.1 Descriptive Statistics

Variable	Mean	Std. Deviation	N
AI Usage Score	3.78	0.82	150
Linguistic Competence Score	74.25	8.64	150
Writing with AI	78.90	7.55	150
Writing without AI	70.12	9.21	150
Independent Writing Ability	69.85	8.97	150

The average score in terms of AI usage (3.78) shows that the students use AI writing tools moderately to frequently. The average of writing with AI (78.90) is significantly higher than the average of writing without AI (70.12) and this implies that AI tools can be used to enhance the writing performance. The independent writing ability mean (69.85) is however, lower meaning that the students performed poorly when they have to use only their skills. The values of standard deviation indicate a moderate variability i.e. the responses within the participants are fairly even.

4.2 Reliability Analysis

To determine internal consistency of the questionnaire items to measure AI usage, reliability analysis was done.

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Table 4.2 Reliability Statistics

Cronbach's Alpha	Number of Items
0.83	8

The Cronbachs Alpha is 0.83 which is above the acceptable value of 0.70 and this is an indication that there is a good internal consistency amongst the items of the questionnaire. This implies that the scale to be applied in measuring AI usage is valid and yield similar scores.

4.3 Hypotheses Testing

Linear Regression

Hypothesis: AI writing tools impact a great deal on linguistic competence.

An AI usage was taken as an independent variable, and a linguistic competence score was taken as a dependent variable in order to conduct a linear regression analysis.

Table 4.3 Model Summary

R	R Square	Adjusted R Square	Std. Error
0.62	0.384	0.379	6.88

R value (0.62) shows that there is a positive strong relationship between AI usage and linguistic competence. The value of R2 (0.384) indicates that about 38.4 percent of the change in the linguistic competence can be attributed to the use of AI that is a significant percentage in a social science study.

Table 4.4 ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	2745.12	1	2745.12	58.01	0.000
Residual	4401.88	148	29.74		
Total	7147.00	149			

The ANOVA table demonstrates that regression model is significant ($F = 58.01$, $p = 0.05$). This shows that the use of AI is likely to considerably predict linguistic competence and the model fits the data well.

Table 4.5 Coefficients

Variable	B	Std. Error	Beta	t	Sig.
Constant	52.13	3.21		16.24	0.000
AI Usage	5.86	0.77	0.62	7.62	0.000

The beta coefficient (= 0.62) shows that AI usage has a strong positive influence on the linguistic competence. The p-value (0.000) is lower than 0.05 thereby establishing the effect as being statistically significant. This implies that linguistic competence score rises with the rise in the use of AI. H1 is thus accepted.

Paired Sample t-test

Hypothesis: AI-assisted and non-AI writing is significantly different.

Paired sample t-test was used to compare the scores of writings in both conditions.

Table 4.6: Paired Samples Statistics

Condition	Mean	Std. Deviation	N
Writing with AI	78.90	7.55	150
Writing without AI	70.12	9.21	150

The average score of AI-assisted writing (78.90) is much higher than non-AI writing (70.12), which shows the better performance of the students in case of using AI tools.

Table 4.7 Paired samples test.

Mean Difference	Std. Dev.	t	df	Sig. (2-tailed)
8.78	6.45	12.34	149	0.000

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The results of the t-test indicate that there is a significant difference between the two conditions ($t = 12.34$, $p < 0.05$). This validates that writing with the help of AI greatly enhances the writing performance of students. H2 is thus accepted.

Pearson Correlation

Hypothesis: The independent writing ability has a strong correlation with the AI use.

Pearson correlation coefficient was done between the independent writing ability and AI use.

Table 4.8 Correlation Analysis

Variables	AI Usage	Independent Writing
AI Usage	1	-0.41**
Independent Writing Ability	-0.41**	1

Note: $p < 0.01$

Correlation coefficient ($r = -0.41$) reveals that there is moderate negative correlation between the use of AI and independent writing ability. It implies that the increased use of AI tools is related to the reduced performance in independent writing. It is statistically significant ($p < 0.05$), which proves that such effect is not by chance. As such, H3 is accepted.

5. Discussion of findings

The results of this study give clear evidence that AI writing tools can affect linguistic competence of students significantly but with a complex influence. The findings indicate a two-fold impact: on the one hand, AI tools can improve writing performance in some aspects, but on the other, they provoke certain concerns about the independence of writing and language autonomy of students. This part critically interprets these findings on the basis of current literature and theoretical views. H1 results suggest that there is a strong, positive impact of AI writing tools on linguistic competence. Namely, the regression analysis revealed a significant predictor of the score changes in linguistic competence with the use of AI. This result is in line with earlier studies that indicate that AI tools can lead to a higher degree of grammatical accuracy, vocabulary use, and coherence in student writing (Pryma et al., 2025; Al-Raimi et al., 2024). Through AI, students are able to recognize and fix linguistic mistakes via real-time corrective feedback, which is effectively applicable. This is a built-in feedback feature that decrease the time taken in revision and enable students to create linguistically correct content with less effort.

In addition, the results improve the thesis that the AI tools are used as scaffolding tools in learning. Recent research shows that AI-based writing environments enable students to learn through repetition, as they gradually improve writing performance over time as they are repeatedly corrected and advised (Liu et al., 2025; Zheldibayeva et al., 2025). This is in line with the idea of technology-enhanced learning, in which digital tools are used to aid the acquisition of skills by minimizing cognitive load to enable learning efficiency. But the findings also imply that such improvements are mostly limited to the surface of the linguistic competence. Although grammar and vocabulary improvement is evident, the results are not always indicative of improvement in higher order linguistic skills which include critical thinking, originality and the complexity of the syntax. This fact is in line with previous studies that suggest that AI tools are more likely to maximize correctness and clarity, and not encourage complex language use (Akanda & Talukder, 2026). Thus, despite the fact that H1 was supported, the scope of the improvement is confined to the technical aspects of writing.

The results of H2 indicate that there is a significant difference in the performance of the AI-assisted and non-AI writing. The t-test with the paired samples revealed the students achieved significantly better results when they were using AI tools than when they were alone when writing. This finding complements the current empirical data on the topic that AI tools can enhance writing performance in terms of form, arrangement, and linguistic correctness (Wu, 2024; Floris & Renandya, 2025). The suggestions generated by AI assist students in creating

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more coherent and well-structured texts, leading to better overall writing scores. This improvement though should be taken with caution. The increased performance of writing with AI assistance may not be a true indication of skill improvement. Rather, it can point out to the direct impact of AI tools on the writing process. This is in line with the argument in the recent literature that AI tools have the ability to artificially enhance writing quality without promoting underlying competence (Jin et al., 2025). The idea of the agency gap is especially applicable in this case, as it shows the gap between the performance of students, with the help of AI, and their own abilities.

Moreover, it has been demonstrated that writing AI can be more or less standardized, and it can restrict the scope of creativity and originality (Chaparro-Banegas et al., 2024). On the one hand, AI tools enhance clarity and coherence, but on the other hand, they can create homogenized styles of writing, which deprives students of the opportunity to make their voices unique. This brings about questions regarding the future consequences of using AI, especially in the academic sphere where one requires critical thinking and originality. Moreover, experimental studies reveal that, despite the improvement of the results in the short term, AI-assisted writing does not necessarily lead to long-term improvement (Bedaubekov, 2025). This is an indication that AI tools can be used as a performance tool and not as a learning tool particularly when one is not adequately guided on how to use it. Consequently, the supporting evidence of H2 is provided, nevertheless, the results emphasize the importance of the critical difference between the performance improvement and the real learning. The results of H3 indicate that there is a significant negative correlation between the use of AI and the independent writing ability. The analysis of correlation demonstrates that the greater the levels of AI use, the lower the independent writing performance. The finding is good empirical evidence of the fears about excessive dependence on AI tools.

The result aligns with the recent studies about the cognitive effect of AI-assisted writing. Research indicates that overuse of AI tools decreases the student's engagement in critical cognitive functions like generation of ideas, solving problems and constructing sentences (Farhan, 2025). Consequently, students can turn into a passive consumer of technology, instead of creating their own language, students can use the generated content by AI. This phenomenon can also be explained by the notion of the agency gap. Studies conducted by Jin et al. (2025) prove that students usually show a considerable improvement in their performance subjected to the use of AI tools in comparison to the performance when writing alone, which leads to a discrepancy between assisted performance and competence. Such a divide implies that AI applications could conceal inherent flaws in writing skills, giving an illusion of skill.

Moreover, the recent cognitive research has pointed out that AI tools could decrease mental effort and engagement when writing. Less cognitive engagement may prevent the acquisition of higher-order thinking, which is vital to writing academic texts (Alqurashi, 2025). This lessening of cognitive load could be behind the negative association of AI use, and independent writing skill that this study shows. The other critical aspect is the ease of language brought about by AI tools. Studies have shown that AI systems tend to be more focused on clarity and readability, which may result in simpler sentence constructions (Pryma et al., 2025). Although this increases readability, it can reduce the exposure of the students to more complex forms of language, thus inhibiting the acquisition of more sophisticated writing skills. In the long term, they may lead to decreased syntactic and linguistic diversity.

Nevertheless, there are studies that indicate that the adverse effects of AI tools can be alleviated in case of the guided and structured use in independent writing. By training students to critically work with AI tools, it is possible to provide feedback and, at the same time, participate in the process of writing (Biju et al., 2024). This implies that the effects of AI tools are not always negative but vary based on the way they are incorporated in the learning environment. In

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general, the results of the current research prove that AI writing tools can have a two-fold effect on the linguistic competence of students. On the one hand, they considerably improve such surface-level writing skills like grammar, vocabulary, and coherence. Conversely, they have adverse impacts on independent writing competence, and can impede the formation of rich linguistic and cognitive abilities. The results are consistent with the rest of the existing literature, which highlights the importance of responsible and balanced use of AI in education (UNESCO, 2023).

These findings have important implications on the education system and policymakers. Although AI technologies can be beneficial learning tools, their application should be controlled to avoid excessive reliance. Learning institutions must aim at ensuring that AI tools are incorporated in a manner that facilitates learning and critical thinking and not passive dependency. This can involve setting tasks that involve students using independent writing skills, and promoting reflective use of AI-generated feedback. Conclusively, this study has emphasized the significance of considering the subtle effect of AI writing tools on the linguistic competence. Although these tools have significant advantages in enhancing the performance of writing, they also come with challenges which need to be dealt with so as to achieve meaningful performance. The results highlight the necessity of a pragmatic method that aims at exploiting the benefits of AI with the aim of reducing the shortcomings that the technology may have.

6. Conclusion

This research aimed to test how AI writing aids in the development of linguistic competence in students with particular emphasis on grammar, vocabulary, coherence, writing performance, and independent writing. The results give a clear and balanced perspective of how such tools are influencing the contemporary academic writing. Instead of concentrating on the solely positive or negative influence, the findings reflect a two-faceted effect, indicating that the AI writing tools positively affect the writing process in some aspects but may negatively affect it in others. The research validates the fact that AI writing systems drastically enhance the general linguistic competence of the students, especially with regards to surface-level aspects of the language. Students who regularly used AI received a higher score in grammatical accuracy, vocabulary use, and organization of ideas. To a great extent, these enhancements are possible due to the fact that AI systems can offer real-time feedback and automated suggestions, which enables students to quickly spot and rectify any mistakes. This has made the students capable of writing more polished and linguistically accurate texts in a reduced period of time.

Moreover, the analysis of the results of AI-assisted and non-AI writing showed that there was a significant difference in the performance. Using AI tools, students always scored higher, creating more consistent and well-organized materials. This result indicates that AI tools can serve as powerful writing aids, and they can improve the writing results in the moment. This betterment, however, cannot be seen as an immediate sign of the greater linguistic competence. Rather it is the part played by AI in supporting the end product, as opposed to the inbuilt capabilities of the pupils. Concurrently, the research raises a crucial issue with the adverse correlation between the use of AI and the independent writing skill. The findings suggest that students who are highly dependent on AI tools have a lower performance when asked to write independently. It indicates that the excessive reliance on AI can decrease the involvement of students in the key cognitive activities, including the generation of ideas, sentence building, and critical thinking. This can lead to a dependency on support by students instead of building their linguistic competencies.

Such a lack of balance between enhanced assisted performance and reduced independent ability is indicative of a larger problem with the implementation of AI technologies in education. Although AI tools are convenient and efficient, there is a risk of passive learning. students can

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be even more concentrated on finding the right answers than at the knowledge of the principles of using the language. In the long-run, this may restrain the emergence of more advanced linguistic competence such as creativity and originality as well as the ability to develop complex arguments. The results of this research highlight the necessity of having a moderate and regulated attitude towards the use of the AI writing tools in academic practice. Instead of prohibiting and completely depending on these tools, teachers need to work on implementing them in a manner that does not substitute learning. AI tools are to be viewed as a method of feedback and improvement in addition to actively involving students in the writing process. It is also necessary to set assignments and assessments to test the independent writing skills, and students should be taught to write well without the use of technology.

To sum up, AI writing tools are an effective innovation in the field of education, which has important advantages in enhancing writing skills and language proficiency. Nevertheless, one cannot overlook their influence on independent learning and further development of the language. The issue is to strike the right balance between exploiting the benefits of AI and not to lose the necessary skills that make one a true linguistic competence. This study is an addition to the existing debate by offering empirical data on the advantages and disadvantages of AI writing tools and the need to use the tools responsibly and strategically to the educational process.

References

Akanda, F., & Talukder, T. (2026). AI writing tools in English writing: Reviewing teachers' and students' views on benefits and concerns. *Social Sciences & Humanities Open*, *13*, 102437.

Alpar, Ö. (2025). Evaluating Generative AI Tools for Improving English Writing Skills: A Preliminary Comparison of ChatGPT-4, Google Gemini, and Microsoft Copilot. *European Journal of Educational Research*, *14*(4).

Alqurashi, F. (2025). L2 learners' behavioral and cognitive engagement in AI-supported English writing.

Al-Raimi, M., Mudhsh, B. A., Al-Yafaei, Y., & Al-Maashani, S. (2024, March). Utilizing artificial intelligence tools for improving writing skills: Exploring Omani EFL learners' perspectives. In *Forum for Linguistic Studies (Transferred)* (Vol. 6, No. 2, pp. 1177-1177).

Biju, N., Abdelrasheed, N. S. G., Bakiyeva, K., Prasad, K. D. V., & Jember, B. (2024). Which one? AI-assisted language assessment or paper format: An exploration of the impacts on foreign language anxiety, learning attitudes, motivation, and writing performance. *Language Testing in Asia*, *14*(1), 45.

Chaparro-Banegas, N., Mas-Tur, A., & Roig-Tierno, N. (2024). Challenging critical thinking in education: New paradigms of artificial intelligence. *Cogent Education*, *11*(1), 2437899.

Enriquez, G., Gill, V., Campano, G., Flores, T. T., Jones, S., Leander, K. M., ... & Price-Dennis, D. (2024). Generative AI and composing: An intergenerational conversation among literacy scholars. *English Teaching: Practice & Critique*, *23*(1), 6-22.

Farhan, H. (2025). The Impact of AI-Powered Writing Tools on Students' Writing Performance: A Content Analysis and Future Prospects. *Research Gate*.

Floris, F. D., & Renandya, W. A. (2025). Artificial Intelligence Tools for Research Writing: Practical Tips for Teachers. *Tesl-Ej*, *29*(1), n1.

Freeman, J. (2025). Student generative AI survey 2025. *Higher Education Policy Institute: London, UK*.

Jaramillo, J. J., Chiappe, A., & Delgado, F. S. (2025). From struggle to mastery: AI-powered writing skills in ESL education. *Applied Sciences*, *15*(14), 8079.

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CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
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CONTEMPORARY JOURNAL OF SOCIAL SCIENCE REVIEW
Vol.04 No.02 (2026)

Jin, Y., Yang, K., Martinez-Maldonado, R., Gašević, D., & Yan, L. (2025). The Agency Gap: How Generative AI Literacy Shapes Independent Writing after AI Support. *arXiv preprint arXiv:2507.04398*.

Liu, J., Sihes, A. J. B., & Lu, Y. (2025). How do generative artificial intelligence (AI) tools and large language models (LLMs) influence language learners' critical thinking in EFL education? A systematic review. *Smart Learning Environments*, *12*(1), 48.

Marzuki, Widiati, U., Rusdin, D., Darwin, & Indrawati, I. (2023). The impact of AI writing tools on the content and organization of students' writing: EFL teachers' perspective. *Cogent Education*, *10*(2), 2236469.

Motlagh, N. Y., Khajavi, M., Sharifi, A., & Ahmadi, M. (2023). The impact of artificial intelligence on the evolution of digital education: A comparative study of openAI text generation tools including ChatGPT, Bing Chat, Bard, and Ernie. *arXiv preprint arXiv:2309.02029*.

Munawwaroh, K., & Fahreza, M. R. (2025). Integrating AI Tools in English Writing Classes to Enhance Student Accuracy and Coherence. *The Journal of Academic Science*, *2*(5), 1507-1516.

Pryma, V., Pelivan, O., Teletska, T., Tsobenko, O., & Zagrebelna, N. (2025). AI Writing Assistants and Student Competence: A Linguistic Aspect. *Arab World English Journal*, *16*.

Rashid, S., Malik, S., Abbas, F., & Khan, J. A. (2025). Pakistani students' perceptions about knowledge, use and impact of artificial intelligence (AI) on academic writing: A case study. *Journal of Computers in Education*, *12*(4), 1053-1078.

RSIS International. (2025). AI-powered tools for enhancing writing skills: A systematic review.

Sanz-Tejeda, A., Domínguez-Oller, J. C., Baldaquí-Escandell, J. M., Gómez-Díaz, R., & García-Rodríguez, A. (2025). The impact of generative AI on academic reading and writing: a synthesis of recent evidence (2023–2025). In *Frontiers in Education* (Vol. 10, p. 1711718). Frontiers Media SA.

Şen, F. (2025). Investigating the impact of integrating generative AI on learner autonomy and writing proficiency in EFL instruction.

Shibani, A., & Buckingham Shum, S. (2024, May). Ai-assisted writing in education: Ecosystem risks and mitigations. In *Proceedings of the Third Workshop on Intelligent and Interactive Writing Assistants* (pp. 4-6).

Song, C., & Song, Y. (2023). Enhancing academic writing skills and motivation: assessing the efficacy of ChatGPT in AI-assisted language learning for EFL students. *Frontiers in psychology*, *14*, 1260843.

Strochenko, L., Smaglii, V., Viktoriia, C., & Yukhymets, S. (2025). Academic Writing for Postgraduates Across Disciplines: A Lexico-syntactic Perspective. *Arab World English Journal*, *16*(1).

UNESCO. (2023). Artificial intelligence and the future of teaching and learning.

Vieriu, A. M., & Petrea, G. (2025). The impact of artificial intelligence (AI) on students' academic development. *Education Sciences*, *15*(3), 343.

Wu, Y. (2024). Study on the impact of utilizing ChatGPT and other AI tools for feedback in EAP writing classrooms on the discursive writing performance of English major students. *Transactions on Social Science, Education and Humanities Research*, *4*, 143-150.

Zheldibayeva, R., Nascimento, A. K. D. O., Castro, V., Kalantzis, M., & Cope, B. (2025). The impact of AI-driven tools on student writing development: A case study from The CGScholar AI Helper Project. *arXiv preprint arXiv:2501.08473*.