





Vocational ICT Students' Perceptions of AI Writing Tools in ESP Classrooms

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Abstract. With the proliferation of AI-powered tools in educational environments, new pedagogical possibilities have emerged for language learning and academic writing development. However, existing research has disproportionately concentrated on AI tool use in general EFL or conventional academic writing settings, leaving a notable void in the literature concerning ESP applications, especially within technically demanding disciplines such as ICT. This study seeks to address that void by investigating how vocational ICT students perceive AI-powered tools as instruments of writing assistance within field-specific English courses. A mixed-method research design was employed, drawing on structured questionnaire data from 41 student participants. The results demonstrate near-universal AI tool adoption, with 97.6% of respondents having used tools such as ChatGPT and Grammarly for academic writing. Frequent use was recorded for purposes spanning grammatical improvement, ideational support, and vocabulary development. While 75% of students attributed increased writing confidence to AI tool usage, a notably small proportion: 10%, strongly affirmed that AI tools alone constitute sufficient support for writing improvement. These findings suggest that vocational ICT students approach AI writing tools from a multidimensional perspective - seeking not only linguistic support but also practical, genre-conscious outcomes including clarity and coherence. The sophistication reflected in their responses points to a high level of digital literacy and a balanced understanding of AI's pedagogical affordances and limitations. The study consequently calls for the purposeful embedding of AI literacy and critical thinking skills within ESP curricula to cultivate responsible and effective AI use in vocational learning environments.

Keywords: AI-assisted Writing, ESP, ICT, Vocational Education.

1 Introduction

English formal writing plays a crucial role in both academic and professional fields. However, vocational students often face difficulties in mastering formal writing [1], [2], due to limited exposure to established conventions, particularly those in technical sectors such as Information and Communication Technology (ICT). To address this, English for Specific Purposes (ESP) courses have been mandated in higher education,

especially within vocational programs, since vocational education primarily aims to provide learners with the practical skills and competencies required for specific careers and industries. ESP requires English proficiency tailored to specific disciplines or professional context, necessitating a targeted and efficient instructional approach [3]. In line with this need, the present study investigates vocational students' perceptions of utilizing Artificial Intelligence (AI) to support their mastery of formal writing. Specifically, it explores how AI tools can enhance students' written reports and deepen their understanding of language use amid the growing proliferation of AI-based writing assistants.

Although AI tools are frequently utilized to facilitate students with writing and grammar, most research to date has been focusing on how well these tools work to improve writing quality [4], [5]. In recent years, the advancement of AI has introduced new possibilities in language learning and writing instruction. AI-powered tools such as ChatGPT, Google Translate, QuillBot, and Grammarly are increasingly used by students to assist in various aspects of writing [6], ranging from generating ideas and rephrasing sentences to providing instant grammar checks. These tools promise efficiency and accessibility, offering learners immediate feedback that can supplement traditional classroom instruction. For vocational students who may struggle with English proficiency, such tools are particularly appealing as they provide practical support in completing academic tasks and professional communication.

Although AI-assisted writing tools are frequently utilized to facilitate students with writing and grammar, most research to date has focused on evaluating their effectiveness in improving writing accuracy and quality [4]. Studies have commonly examined measurable improvements in grammar, vocabulary, and overall coherence after using these tools, often with a focus on general or academic student populations. However, there is limited research addressing how vocational students, especially in ICT fields perceive the use of AI writing assistants. Understanding learners' perceptions is critical, since attitudes toward feedback, trust in the tool, and the way students engage with AI suggestions all directly influence the extent to which these technologies can support learning.

To address the underexplored dimension of AI tool use within vocational ESP contexts, this study examines how ICT students perceive Grammarly as a writing assistance instrument. Grammarly was specifically chosen given its prominence as one of the most widely used AI-based writing platforms in academic environments and its distinctive capability to furnish instantaneous, context-informed feedback on grammar, clarity, and vocabulary, attributes especially valuable for non-native English learners in vocational settings who commonly struggle with writing accuracy and coherence.

The study's analytical focus encompasses students' responses to AI-generated corrective feedback, the extent to which such feedback cultivates writing confidence, and the degree to which these tools are meaningfully integrated into students' writing routines. In doing so, the research offers critical pedagogical insights relevant to the broader project of incorporating AI into ESP instruction. Its findings are projected to enrich the scholarly discourse on how AI-assisted tools can serve as instructional supplements, nurture independent learning capabilities, and better equip vocational students for the linguistic demands inherent in both academic and professional contexts.

2 Method

To underpin the empirical investigation, this study utilized a quantitative approach in which a questionnaire constituted the core data collection instrument. This was supplemented by a targeted review of contemporary scholarly literature, restricted to publications from the past five years addressing three interrelated areas: English for Specific Purposes (ESP), vocational education, and the pedagogical use of Artificial Intelligence (AI) in academic writing. The questionnaire was administered to the third-year vocational students from Informatics and Computer Engineering Department, particularly those who were taking the English proficiency test preparation course. This course primarily focuses on the TOEIC test, while also introducing other international standardized tests such as TOEFL and IELTS. Respondents were selected through purposive sampling to gather data from students who were most likely to provide meaningful information related to the research objectives, with a total of 41 participants.

To assess students' perceptions of AI-assisted academic writing, a thirteen-item questionnaire was deployed through Google Form in July 2025. The instrument was predominantly structured around a five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree), with ten items specifically designed to measure students' confidence in writing, their appraisal of AI tools' usefulness, and their attitudes toward Grammarly and other AI writing assistants. Sample items included: "Grammarly helps me improve sentence clarity," and "Using AI tools increases my confidence in academic writing." The remaining three questions were open-ended, inviting respondents to describe the types of feedback they found most useful and the challenges they experienced when using Grammarly.

Responses to the Likert-scale items were analyzed descriptively, while open-ended responses were examined through thematic analysis. The analysis followed an inductive approach, starting from initial coding of recurring ideas to the identification of emerging themes that represented students' experiences and perceptions. The themes were refined through iterative reading to ensure consistency and accuracy in interpretation.

3 Results

This section examines the extent of their use, the most preferred tools, and the frequency with which they are employed in writing. The survey findings show that from 41 students, 97.6% of the respondents reported having used AI tools to assist them with writing tasks such as essays, reports, or assignments, while only one respondent (2.4%) indicated that they had never used such tools. When asked how often they use AI tools when writing in English, the majority of students responded "sometimes" (43.9%), followed by "often" (39.0%). Meanwhile, a smaller proportion reported using them "always" (7.3%) or "rarely" (7.3%). The whole presentation of the data is shown in Figure 1.

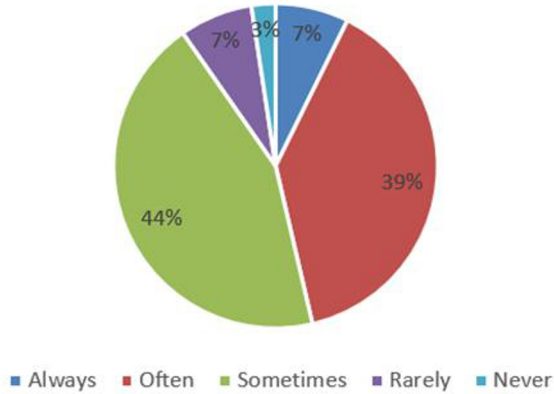


Fig. 1. Frequency of AI tool usage among students

An examination of the data indicates a clear hierarchy in AI tool utilization among participants. Conversational AI systems, predominantly represented by ChatGPT, recorded the highest usage frequency at 34.9%, followed by translation tools - most notably Google Translate: at 27.9%. Grammarly, whose primary function centers on grammatical accuracy and writing quality enhancement, was utilized by 23.3% of respondents. In contrast, paraphrasing tools such as QuillBot demonstrated more limited adoption at 11.6%, and Copilot registered the lowest usage rate among all tools examined, at 2.3%. A comprehensive visualization of these figures is presented in Figure 2.

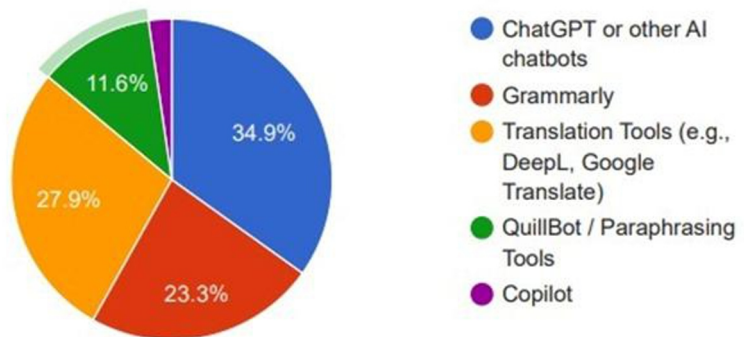


Fig. 2. Usage of AI tools

These findings suggest that most users rely on AI primarily learning, accordingly, the use of AI to assist the learning processes can be called AI-assisted learning. The survey also revealed that the majority of students used AI tools primarily to correct grammar and spelling (68.3%). A substantial proportion also reported using them to improve vocabulary and style (48.8%), to get ideas or inspiration (46.3%), and to rewrite or

paraphrase sentences (46.3%). Meanwhile, a smaller percentage (17.1%) indicated that their main reason was to speed up writing or to meet deadlines.

In terms of users’ perceptions of Grammarly’s suggestions and explores how these influence their confidence and overall writing skills, as shown in Figure 3.

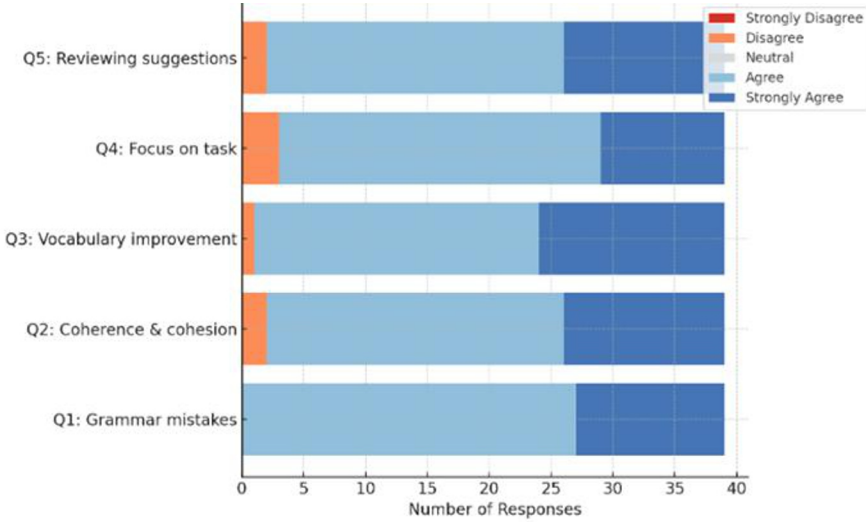


Fig. 3. Students’ perceptions of Grammarly usage

The Likert-scale items were designed to explore students’ perceptions of Grammarly’s role in supporting their writing development. Five questions were posed: (Q1) *Grammarly helped me understand my grammar mistakes better*; (Q2) *Grammarly helped me improve my coherence and cohesion in writing*; (Q3) *Grammarly gave me useful suggestions for vocabulary improvement*; (Q4) *Grammarly helped me stay focused on the task and answer the prompt well*; (Q5) *I reviewed Grammarly’s suggestions carefully before applying them*; (Q6) *I feel more confident writing IELTS-style essays after using Grammarly*; and (Q7) *Grammarly alone is enough to improve my academic writing skills*.

As shown in the chart, most students responded positively across all five items, with the majority selecting *Agree* or *Strongly Agree*. For Q1, students overwhelmingly indicated that Grammarly enhanced their understanding of grammar mistakes, confirming its primary function as a grammar-checking tool. Q2 and Q3 also received strong agreement, suggesting that students perceived Grammarly not only as useful for correcting errors but also for improving coherence, cohesion, and vocabulary use.

Q4, which asked whether Grammarly helped students stay focused on the task, showed relatively more variation, as several respondents selected *Disagree*. Q5 indicated that while many students reviewed Grammarly’s suggestions critically, a small proportion admitted to not always doing so. The overarching pattern emerging from the data substantiates students’ favorable appraisal of Grammarly as a constructive

aid in academic writing, with its perceived value being most prominently expressed in relation to grammatical accuracy, clarity of expression, and vocabulary enhancement.

Meanwhile, Q6 revealed that a large majority of students felt more confident writing IELTS-style essays after using Grammarly, showing the tool's positive effect on students' self-efficacy in academic writing. However, responses to Q7 were more mixed, as fewer students agreed that Grammarly alone is sufficient to improve their overall academic writing skills. This suggests that while Grammarly effectively supports grammar accuracy and confidence, students still recognize the need for human feedback and deeper writing instruction to achieve comprehensive writing improvement.

4 Discussion

4.1 The Use of AI Tools

Among the various language skills, writing presents considerable complexity for English language learners, a difficulty that is largely attributable to the fundamental grammatical and structural divergences between their first language and English [5]. AI tools are increasingly integrated into people's writing practices [6]. The findings indicate that vocational ICT students engage extensively with AI tools in their writing activities, consistent with recent research documenting AI's growing role in students' daily academic routines. The widespread preference for ChatGPT and Google Translate suggests that students prioritize accessibility and immediate feedback, both of which are key features that facilitate AI-assisted learning [6]. However, Grammarly's consistent use by nearly one-fourth of respondents suggests a growing awareness of tools that enhance accuracy and writing quality.

These findings suggest that students tend to rely on AI tools not only for linguistic accuracy but also for enhancing style and generating ideas in their writing. Grammarly was selected for this study because of its specific focus on enhancing writing quality through grammar and spelling checks. Its role as a writing assistant that supports students in improving spelling and grammar aligns with the increasing use of AI-powered tools such as ChatGPT and Grammarly among university students to enhance their writing proficiency [7], making it particularly relevant to the objectives of this research.

4.2 Students' Perceptions of Grammarly's Effectiveness

Student perceptions constitute a pivotal determinant in shaping the trajectory of their motivational orientation, degree of academic engagement, and overall scholastic achievement. Empirical evidence suggests that constructive perceptions of the learning environment are closely associated with elevated student engagement and motivation, which in turn serve as significant predictors of improved academic performance [8]. Within this educational landscape, the proliferation of AI-powered writing assistant tools has generated novel pedagogical opportunities for scaffolding students' writing

skill development and fostering greater efficiency in their academic work [9]. Evaluating the pedagogical effectiveness of AI-assisted writing tools, with particular reference to Grammarly, fundamentally depends on understanding the manner in which users process and act upon the feedback provided. Beyond grammatical considerations, learners are also required to exercise critical judgment over the content dimensions of their writing, recognizing that linguistic accuracy alone does not constitute comprehensive writing proficiency [10].

4.3 Confidence in Writing after Using Grammarly

Writing in English is considered a challenging task for students who learn English compared to other language skills [11]. For exam takers, the writing portion in its component sections frequently posed serious difficulties [6]. In this study, the respondents were enrolled in an English Proficiency Test preparation class that covered TOEIC, TOEFL, and IELTS. Although IELTS writing provides a standardized form that students can use as a model for their essays, it does not fully prepare them for the broader demands of university academic writing, which require deeper knowledge, research skills, analytical ability, and plagiarism awareness [12]. In comparison, TOEFL and TOEIC assessments are less focused on producing extended academic texts, making IELTS a more suitable reference for modeling essay structure. Therefore, one of the items in the questionnaire specifically addressed students' perceptions of writing IELTS-style essays. This was intended to explore how using Grammarly could affect their confidence in tackling academic writing tasks.

The findings revealed that the majority of students felt more confident in writing IELTS-style essays after using Grammarly. Specifically, 73.2% of the respondents agreed with this statement, while 22.0% strongly agreed. These results suggest that Grammarly had a generally positive impact on students' self-confidence in handling academic writing tasks, by helping students clarify complex academic concepts and organize their work [13].

4.4 Perceived Benefits and Limitations of Grammarly Feedback

To gain deeper insights, respondents were asked open-ended questions about the challenges they faced and the types of feedback from Grammarly they found most useful. These questions provided qualitative perspectives that complemented the earlier quantitative findings.

When asked about the feedback from Grammarly that was most useful for improving their writing, students responded predominantly positively. Most participants highlighted that Grammarly's grammar corrections, clarity enhancements, vocabulary suggestions, and sentence structure feedback were particularly beneficial for their academic writing. These responses suggest that students rely on Grammarly not only for mechanical accuracy but also for refining coherence and lexical choice, which aligns with [14] who found that effective corrective feedback plays a key role in improving academic writing. Meanwhile, neutral and negative feedback was minimal,

with only occasional remarks related to external factors such as the price of premium access or past experiences of limited usefulness.

The other open-ended question explored the kinds of feedback from Grammarly that students considered most useful for improving their writing. While many students appreciated Grammarly's feedback, they also reported several challenges when revising their writing. One of the most common difficulties was deciding whether or not to accept Grammarly's suggestions, since not all corrections fit the context or writing task. Some students found that the tool's feedback could be too formal, vague, or even misleading, which sometimes changed the original meaning of their sentences. Others mentioned that understanding feedback related to grammar, tenses, or advanced vocabulary could be confusing, requiring extra time to double-check and ensure clarity. This aligns with previous research indicating that Grammarly lacks comprehensive feedback that supports holistic writing improvement [15]. In addition, a few students pointed out technical issues, such as using Grammarly on mobile devices, as well as concerns about plagiarism detection and coherence. These challenges highlight that while Grammarly is helpful, students must still critically evaluate its suggestions to maintain their own writing style and intended meaning, while paying attention to the ethical considerations of using AI-assisted writing tools [16].

Moreover, the fact that many students use AI for idea generation and vocabulary improvement suggests that these tools play a motivational role in overcoming writer's block and language anxiety. This supports earlier findings by [14] and [15], who emphasized AI's capacity to boost learners' self-efficacy and autonomy in writing.

However, overreliance on AI tools also raises pedagogical and ethical implications. As suggested by [16], critical engagement and awareness of AI limitations are necessary to prevent plagiarism, dependency, and loss of individual writing voice. Educators should thus integrate AI literacy into writing instruction, helping students use these tools strategically and responsibly.

5 Conclusion

This study explored vocational ICT students' perceptions of AI writing tools in English for Specific Purposes (ESP) classrooms, with a particular focus on Grammarly. The results show that most students perceive Grammarly as helpful, trustworthy, and effective in improving their writing. Respondents generally reported increased confidence in writing after using Grammarly. Moreover, students tended to engage critically with the feedback provided, reflecting before accepting suggestions rather than relying on the tool unselectively. This highlights that AI-assisted feedback supports not only error correction but also the development of students' critical awareness in the writing process. Several methodological limitations warrant acknowledgment in the context of this study. The constrained sample size, compounded by the exclusive recruitment of ICT students from a single vocational institution, potentially undermines the transferability of the findings to other educational settings and student populations. In light of these constraints, prospective investigations are advised to incorporate broader and more diverse vocational student samples, triangulate

questionnaire data with observational methodologies conducted within actual classroom environments, and undertake systematic comparisons among different AI writing tools to examine their long-term instructional effects and the most effective modalities for their incorporation into ESP pedagogy.

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