



The effectiveness of integrating ChatGPT into Business English pedagogy to enhance tertiary students' writing skills

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Abstract

The study addresses the growing challenge of enhancing tertiary students' Business English writing proficiency in Sri Lanka, where conventional teaching methods often fail to provide sufficient individualized feedback and engagement opportunities. With the emergence of Artificial Intelligence (AI) tools such as ChatGPT, new opportunities have emerged for personalised, interactive, and feedback-driven writing instruction. Thus, this study investigates the effectiveness of integrating ChatGPT into Business English pedagogy to enhance tertiary students' writing skills, focusing on the Faculty of Commerce and Management Studies at the University of Kelaniya, Sri Lanka. A mixed-methods design was adopted combining quantitative data from 150 management undergraduates using structured questionnaires, with qualitative data from 10 purposively selected interviewees. Quantitative data were analyzed using SPSS, and qualitative data were examined through thematic analysis. The results indicated strong positive correlation between ChatGPT use and key aspects of Business English writing improvement; personalised feedback ($r = 0.915$), writing style adaptation ($r = 0.887$), and writing engagement ($r = 0.821$), all significant at $p < 0.01$. Regression analysis further showed that the three ChatGPT-related constructs significantly predicted students' reported Business English Writing Skills ($R^2 = 0.858$, $F = 294.336$, $p < 0.001$), with Personalised Feedback ($\beta = 0.713$), Writing Style Adaptation ($\beta = 0.478$), and Writing Engagement ($\beta = 0.467$) making significant positive contributions. Thematic findings supported these results, highlighting enhanced grammar accuracy, vocabulary, coherence, and motivation, alongside reduced writing anxiety. However, challenges such as over-dependence, limited critical evaluation, and risks of academic misconduct were identified. The study recommends that when responsibly integrated, ChatGPT holds substantial potential to enhance Business English writing proficiency and learner engagement in Sri Lankan higher education.

Keywords: ChatGPT, Business English, Writing skills, Tertiary education

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Introduction

Fast technological progress has brought a lot of changes in the sphere of education due to the development of various artificial intelligence (AI) tools used in teaching. Among these AI tools, ChatGPT, a conversational AI created by OpenAI, has gained popularity for its capacity to generate human-like text and interact in real time meaningful conversations with users offering explanations, suggestions and feedback across range of subjects, especially language learning. This newly evolved technology has opened new potential for educators to improve classroom education, particularly in language learning situations where writing remains a challenging and important skill. Therefore, educators worldwide are increasingly interested in the practical prospective of ChatGPT, particularly in higher education settings. It can be positioned as a valuable asset in language education, due to its ability to support writing where students often require consistent support beyond classroom. Previous research has highlighted the potential of ChatGPT to provide personalized instruction and support language learning, while also identifying limitations related to accuracy, complex ideas, and overreliance on AI-generated content (Baskara & Mukarto, 2023; Chen & Lan, 2023). Due to the recent introduction of AI in language learning, the education of Business English has been greatly impacted. The more global business communication depends on English, using tools such as ChatGPT in tertiary education is beneficial as it helps students understand how the theory will be applied in practice (Rathnayaka et al., 2024).

In ESP, and especially in Business English, implementation of AI tools such as ChatGPT can be considered a promising solution for helping students enhance their written communication skills in professional and academic settings. Bachelor's degree holders in Commerce and Management or any other related subject should be proficient in Business English not only to cope with academic tasks, but also to work effectively in professional settings. Written communication in Business English is not only about linguistic skills, but it is also about mastering the rules of discourse, such as formal structure, persuasive language and strategic expression. Thus, the implementation of ChatGPT can offer an additional resource of writing help, which is supposed to involve instant feedback and advice that can be useful in business communication tasks. According to recent studies, there are some benefits of ChatGPT implementation for writing fluency, idea generation, coherence, vocabulary, and communication in educational settings (Mustafa et al., 2024; Soelistiyowati et al., 2024; Truong & Tran, 2024).

In terms of Business English, the value of ChatGPT implementation is especially high due to the fact that professional writing involves the necessity to adapt one's language depending on purpose, audience, and context. Personalized feedback can help learners to find and fix linguistic mistakes in the paper, and adaptation of writing style can facilitate the production of professional communication. Additionally, interacting with AI-based writing tools can affect the motivation, confidence, and engagement of students in writing tasks. Some recent research results indicate positive effects of AI assistance on writing skills, learners' confidence and engagement, but there are some doubts about overreliance, originality, critical thinking, and authenticity of AI-assisted writing (Chen & Lan, 2023; Soelistiyowati et al., 2024; Wang, 2025).

In Sri Lankan higher education, enhancing the writing skills of tertiary students in Business English continues to be a pedagogical issue, especially among students enrolled in commerce and management-related courses. Traditional methods of teaching English have been linked to exam-oriented instruction and limited opportunities to engage in language communication in naturalistic contexts (Indrarathne & McCulloch, 2022). In relation to Business English, this is because students might have to write work-related materials like emails, reports, and other professional forms of communication that not only require accuracy but also control within the context and style. The recent trend among Sri Lankan university students to use ChatGPT implies increased interest in learning through AI-based applications, although some issues with the reliability of information and academic integrity have been raised (Rambukwella, 2024).

Literature indicates that ChatGPT is able to facilitate the development of various writing skills. For example, Chen and Lan (2023) found out that ChatGPT is capable of providing instant feedback and promoting engagement among Business English learners, as well as generating certain issues with accuracy and reliance. Soelistiyowati et al. (2024) found that students used ChatGPT to support idea generation, sentence structure, grammar, coherence, vocabulary, and writing expression, although concerns about overreliance and plagiarism remained. Mustafa et al. (2024) reported benefits for students' confidence and communication in business contexts, while Truong and Tran (2024) found improvements in coherence and vocabulary among students practicing writing with ChatGPT. Wang (2025) further reported gains in fluency and coherence while noting limitations in the development of critical thinking. Research in the Sri Lankan context has also begun to examine ChatGPT-assisted language learning, including vocabulary development among tertiary-level ESL learners (Wickramage et al., 2024). However, this emerging literature has not sufficiently examined the specific dimensions of ChatGPT-supported Business English writing investigated in the present study.

Although previous studies have examined ChatGPT-assisted language learning, academic writing, vocabulary development, and general learner engagement, limited empirical attention has been given to the relationships among specific dimensions of ChatGPT-supported writing and Business English writing skills among tertiary learners in Sri Lanka. In particular, previous Sri Lankan research has focused on areas such as vocabulary development, while comparatively less attention has been given to how personalized feedback, writing style adaptation, and writing engagement are associated with Business English writing skills. The existing literature therefore provides evidence of the general potential of ChatGPT but leaves a more specific empirical question insufficiently addressed: whether these three dimensions of ChatGPT-supported writing are significantly associated with tertiary students' Business English writing skills in the Sri Lankan context.

The present study addresses this gap by examining the relationships between Personalized Feedback, Writing Style Adaptation, Writing Engagement, and Business English Writing Skills among tertiary students at the University of Kelaniya. The quantitative component examines whether the three ChatGPT-related dimensions are significantly associated with students' reported Business English writing skills, while the qualitative component provides additional insight into students' experiences and perception of using ChatGPT for Business English writing.

Thus, the study seeks to provide insights into how AI can be effectively utilized to support Business English instruction while addressing pedagogical and technological concerns with the

aim of evaluating the effectiveness of integrating ChatGPT into Business English pedagogy to enhance tertiary students' writing skills in Sri Lanka. Accordingly, the study examines how the integration of ChatGPT is associated with the writing skills of Business English learners at the tertiary level and investigates the perceptions of and engagement levels of tertiary learners with ChatGPT as an instructional tool to develop Business English writing.

For the purposes of this study, the four constructs are operationally defined as follows. Personalized Feedback refers to students' perceptions of the extent to which ChatGPT provides immediate and individualized feedback that supports revision of their Business English writing. Writing Style Adaptation refers to students' perceptions of the extent to which ChatGPT helps them adapt their writing to formal and professional Business English contexts, including appropriate language and style. Writing Engagement refers to students' perceived motivation, confidence, and involvement in writing activities when interacting with ChatGPT. Business English Writing Skills refer to students' self-reported perceptions of their ability to produce appropriate Business English writing, including aspects of grammar, vocabulary, coherence, organization, and professional expression.

Importantly, Business English Writing Skills in this study were measured through participants' self-reported responses to questionnaire items using a five-point Likert scale rather than through an externally assessed writing task or writing rubric. Thus, the term "Business English Writing Skills" in this article refers to students' perceived writing ability rather than objectively assessed writing performance. Based on the objective of the research and the operational definitions of the constructs, the study hypothesizes that Personalized Feedback, Writing Style Adaptation, and Writing Engagement are positively associated with tertiary students' Business English Writing Skills. Particularly, it is hypothesized that the higher a student's perception of receiving Personalized Feedback, (i) the higher his or her self-reported Business English Writing Skills ; (ii) the more he perceives himself to be doing Writing Style Adaptation, the higher his self-reported Business English Writing Skills; and (iii) the more his Writing Engagement, the higher his self-reported Business English Writing Skills.

Methodology

Conceptual framework

The study was designed based on the conceptual framework presented in Figure 1.

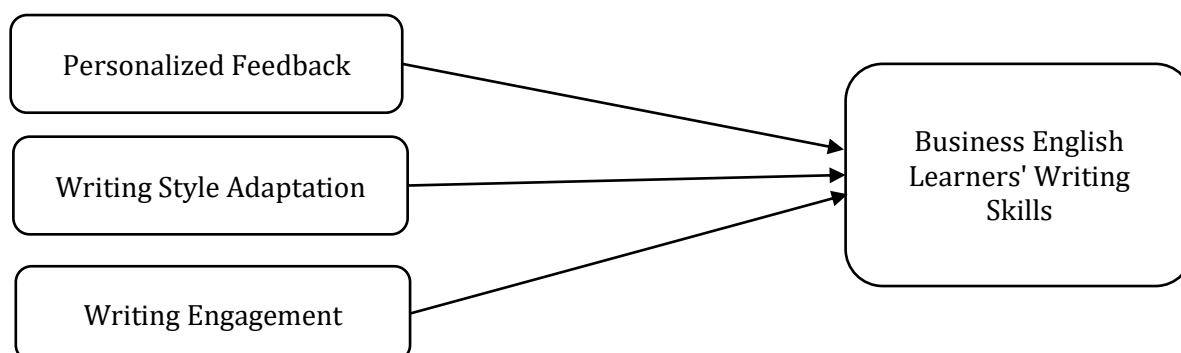


Figure 1. Conceptual Model

Research design

This research study uses the Research Onion model developed by Saunders to present a systematic and sequential research strategy (Figure 2). It employs a pragmatic paradigm in which it adopts qualitative and quantitative paradigms with a data collection and analysis approach that features a mix of deductive and inductive reasoning. This survey plan enables the capturing of data using both a structured questionnaire and a set of open-ended interviews to understand students' experiences and perceptions of using ChatGPT in Business English Writing. The use of both quantitative and qualitative research approaches is beneficial as they make the research results statistically credible while providing descriptions that are rich in context. A cross-sectional time horizon was used because the study examined participants' perceptions and experiences during a particular period rather than following them longitudinally.

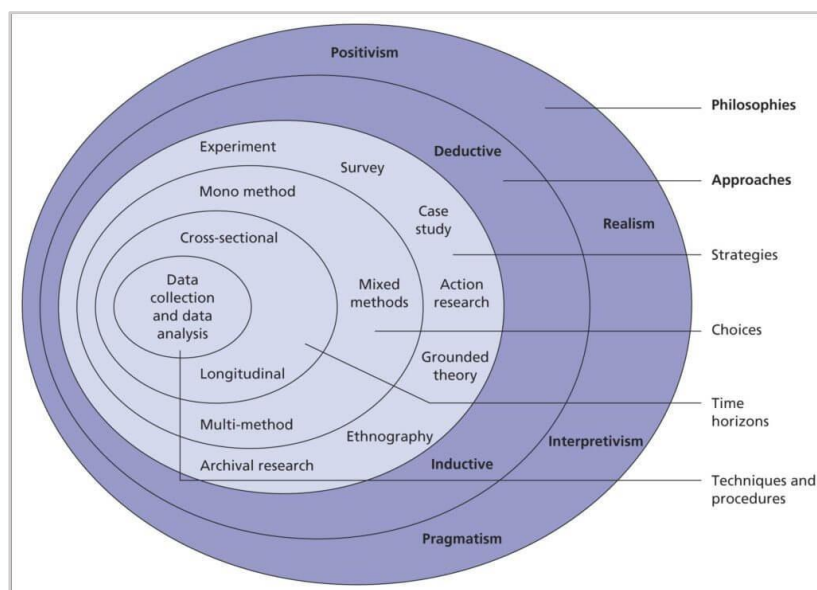


Figure 2. Saunderson's Research Onion Model (Source: Saunders et al., 2016)

More specifically, the study employed a convergent parallel mixed-methods design. Both qualitative and quantitative data were collected during the same timeframe and analyzed separately with the help of statistical and thematic analyses, respectively. Quantitative data were gathered to explore the relationships between Personalized Feedback, Writing Style Adaptation, Writing Engagement, and Business English Writing Skills. Qualitative data were gathered to gain contextual insight into students' experiences and perception of ChatGPT use in relation to Business English writing. In turn, both sets of results were further compared and interpreted with each other with the aim of finding commonalities and providing more detailed interpretation of the quantitative results. Hence, qualitative results were used to enrich the understanding of quantitative findings and not to replace them with statistical analysis.

Research population and sampling

The target population of the research consists of undergraduate students enrolled at the Faculty of Commerce and Management Studies, University of Kelaniya, Sri Lanka, since they are normally expected to write Business English. The convenient sampling strategy was applied to recruit 150 participants for the quantitative part of the research. Participants were required to be active users of ChatGPT since the present study examined students' experiences and perception of using

ChatGPT in Business English writing. Therefore, recruiting students who had actual experience of using the technology allowed them to respond to the questionnaire items on the basis of their own experience and not hypotheses. Convenient sampling strategy was chosen since the participants meeting the criteria and being available to the researcher could be recruited within a given timeframe and institutional environment. In other words, using the active user criteria helped align research objectives with the prior experience of participants. However, due to the fact that participants were recruited via convenient and not probability sampling, the sample differs from the general population of tertiary business English learners in access to ChatGPT, frequency of use, experience with digital technologies, motivation, and other aspects. Consequently, results should be interpreted keeping in mind that they pertain to the sample only and cannot be statistically generalized.

In order to identify participants for qualitative analysis, purposive sampling was performed in the quantitative data sample on the basis of 10 students who demonstrated different levels of ChatGPT usage. The reason behind selecting these participants is to be able to conduct qualitative analysis based on the diverse experience of ChatGPT usage for the purposes of Business English writing. The purposeful sampling in this research was performed in order to make sure that there will be diversity in terms of experience, and not statistical representativeness. The quantitative sample was useful for examining correlations between the study variables while qualitative sample served as a source of information on students' experience in using ChatGPT.

Data collection

To collect the data required for the current research, a structured online questionnaire was developed, and 150 undergraduate students of the Faculty of Commerce and Management Studies of the University of Kelaniya were chosen as the targeted group of respondents. The questionnaire comprised of two major parts where Part A involved gathering of the demographic data such as gender, age, academic year and students' use of ChatGPT to improve their Business English writing. Items in Part B were measured using a five-point Likert scale ranging from the relevant negative to positive response categories. The questionnaire was designed to measure students' perceptions and self-reported experiences of using ChatGPT in Business English writing. In particular, Business English Writing Skills were measured through students' self-reported perceptions rather than through an independently assessed writing task or an external writing rubric. Therefore, the dependent construct represents perceived Business English writing ability and should not be interpreted as objectively assessed writing performance.

For the qualitative part, 10 purposively selected students were interviewed using 12 interview questions each falling under four themes: feedback, writing approach, participation, and writing ability. These interviews lasted around 20-30 minutes and were conducted either face-to-face or online. The interviews served as additional information on top of the results collected from the quantitative survey.

The questionnaire was developed based on the aims of the study, and it covered the four dimensions associated with the ChatGPT-enhanced Business English writing: personalized feedback, writing style adaptation, writing engagement, and Business English writing skills. The questionnaire items were formulated to operationalize the four constructs identified in the

conceptual framework. Personalized Feedback was operationalized in terms of students' perceptions of the immediate and individualized feedback provided by ChatGPT to support their writing. Writing Style Adaptation concerned students' perceptions of ChatGPT's ability to help them adapt their writing to appropriate formal and professional Business English contexts. Writing Engagement concerned students' perceived motivation, confidence, and involvement in Business English writing activities when using ChatGPT. Business English Writing Skills concerned students' self-reported perceptions of their ability to produce appropriate Business English writing, including aspects such as grammar, vocabulary, coherence, organization, and professional expression. All construct items were measured using a five-point Likert scale. The questionnaire therefore measured perceptions of the four constructs rather than objectively evaluating students' written texts.

The internal consistency of the questionnaire was measured via Cronbach's alpha. The value of Cronbach's alpha coefficient was equal to 0.971 which means that a high internal consistency was demonstrated among the questionnaire items. Moreover, the Kaiser-Meyer-Olkin (KMO) index and Bartlett's test of sphericity were considered to evaluate the appropriateness of the data set for conducting further statistical analysis. These procedures were used to assess the adequacy and suitability of the correlation structure of the questionnaire data for subsequent analysis.

Data analysis

The quantitative data were subjected to descriptive, correlation, and regression analyses using Statistical the Package of Social Sciences (SPSS). Descriptive statistics were used to summaries the responses to the questionnaire items and the study constructs. Pearson correlation analysis was used to examine the relationships between Personalized Feedback, Writing Style Adaptation, Writing Engagement, and Business English Writing Skills. Multiple regression analysis was subsequently used to examine the extent to which the three predictor constructs statistically explained variation in students' reported Business English Writing Skills. Because the study employed a cross-sectional correlational design, the regression results were interpreted as statistical associations/predictive relationships rather than evidence of causal effects. Accordingly, the study does not claim that ChatGPT or any individual ChatGPT-related construct caused an improvement in students' writing skills.

For qualitative data, Braun and Clarke's (2006) thematic analysis approach was used. The responses given in the interviews were transcribed and were later coded and grouped into four themes, namely: feedback, writing approach, participation, and writing ability. Following Braun and Clarke's (2006) six-phase paradigm, thematic analysis involved familiarizing oneself with the data, creating preliminary codes, looking for themes, reviewing, defining, and reporting. To allow patterns to emerge organically from participants' narratives, the interview transcripts were manually coded using an inductive technique. A second coder independently examined a portion of the transcripts (about 25%) and discussed any disagreements with the primary researcher until an agreement was reached in order to increase the analysis's legitimacy and dependability. Through this procedure, essential themes were consistently identified, and inter-coder dependability was guaranteed.

Integration of the quantitative and qualitative findings occurred at the interpretation stage. The quantitative results identified the statistical relationships among the four constructs, while the qualitative findings provided participants' explanations and experiences concerning feedback, writing style, engagement, and writing ability. The two sets of findings were compared to identify convergent or complementary patterns. This integration provided contextual support for interpreting the quantitative findings and enabled the study to present both the statistical patterns and the participants' perspectives on ChatGPT-supported Business English writing.

Ethics statement

The research study followed ethical standards applicable for studies involving humans. In relation to the survey, participants were briefed on the aim of the study, voluntary participation, confidentiality of their information, and the use of their information before filling out the questionnaire anonymously. Submission of the questionnaire was an indication of informed consent for participation in the research. With regard to the qualitative interview, informed consent was secured from all the participants in the interview prior to conducting the interview sessions. This is in addition to explaining to participants the voluntary nature of participation, confidentiality of their responses and the fact that the responses will be used only for academic purposes. No personal information was collected in the research database.

The study also followed data protection regulations, ensuring compliance with ethical standards in research (Saunders et al., 2016). Participants were assured that their responses would be aggregated and analyzed collectively, preventing individual identification. Additionally, no deceptive practices were used, and all information provided to participants was accurate and transparent. Finally, the study ensured academic integrity by avoiding plagiarism and ensuring that data collection, analysis, and reporting were conducted honestly and objectively. These ethical measures reinforced the validity and credibility of the research findings.

Results

The study examined the effectiveness of integrating ChatGPT into Business English pedagogy to enhance tertiary students' writing skills through quantitative and qualitative analyses.

Descriptive statistics

According to the descriptive analysis, the questionnaire items were measured on a five-point Likert scale, with item-level mean values ranging from 3.33 to 5.00. The highest mean score was obtained for Writing Style Adaptation ($M = 4.49$), suggesting that respondents agreed on its usefulness. Writing Style Adaptation also had the highest standard deviation score ($SD = 0.48$) which was slightly more variant than the other components. Overall satisfaction ranged from good to excellent, with little variation between the answers given by the students. These results indicate that students positively perceived the usefulness of ChatGPT in improving their writing performance in relation to the four constructs.

Table 1: Descriptive statistics, positive correlations, and internal consistency of the study constructs

	Mean	Standard Deviation	Correlation with Business English writing skills (r)	Cronbach's α
Personalized feedback	4.3244	0.42471	0.915	0.838
Writing style adaptation	4.4867	0.47594	0.887	0.889
Writing engagement	4.4667	0.43735	0.821	0.807
Business English writing skills	4.4389	0.42587	-	0.794

Table 1 presents the descriptive statistics, correlations with Business English Writing Skills, and internal consistency estimates for the four study constructs. All four constructs demonstrated acceptable to high internal consistency, with Cronbach's alpha coefficients ranging from 0.794 to 0.889. The three ChatGPT-related constructs were positively and significantly correlated with Business English Writing Skills.

Reliability analysis

The reliability of the four constructs was examined separately using Cronbach's alpha rather than reporting only an overall coefficient. Personalised Feedback demonstrated good internal consistency ($\alpha = 0.838$), while Writing Style Adaptation showed high internal consistency ($\alpha = 0.889$). Writing Engagement demonstrated acceptable internal consistency ($\alpha = 0.807$), and Business English Writing Skills also demonstrated acceptable internal consistency ($\alpha = 0.794$). Thus, all four constructs exceeded the commonly used minimum threshold of 0.70. The previously reported overall Cronbach's alpha of 0.971 is therefore not used as the primary evidence of construct-level reliability because reliability is more appropriately reported separately for each multi-item construct.

Measurement adequacy

The suitability of the questionnaire data for factor-analytic assessment was examined using the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's test of sphericity. The KMO values ranged from 0.747 to 0.838 across the four constructs, while Bartlett's tests of sphericity were statistically significant for all constructs ($p < .001$), indicating adequate sampling adequacy and that the correlation matrices were suitable for factor-analytic examination. These results provide evidence of measurement adequacy; however, they should not be interpreted as establishing construct validity on their own. Additional construct-validity evidence would require factor-level evidence such as factor loadings or an exploratory/confirmatory factor analysis.

Correlation analysis

The strong correlation between Personalized Feedback and Business English Writing Skills ($r = 0.915$), on the other hand, requires a more cautious interpretation. One potential reason for this strong relationship can be attributed to the conceptual resemblance of the constructs, since the

perception of ChatGPT's feedback as helpful would also correlate with the perception of improving writing skills. Moreover, the variables under consideration have been measured by the same questionnaire and have been collected from the same participants at the same point in time. Thus, the method of measurement of the variables could have influenced the results obtained, and the correlation must be considered as an indicator of the strong relationship between the variables rather than the cause-and-effect relationship.

Writing Style Adaptation also presented a strong positive relationship indicating that students who perceived greater support from ChatGPT in adapting their writing style also tended to report stronger Business English Writing Skills. This is also supported by the result revealing that the selection of formal business writing styles from the options provided to the students by ChatGPT enhances their Business English writing skills. Writing engagement also demonstrated a similar positive relationship with business English writing skills indicating that increased interacting with ChatGPT positively influenced the students' motivation and engagement in writing activities. As with the other correlations, the cross-sectional and self-reported nature of the data does not permit a causal interpretation.

Multiple regression analysis

Multiple regression analysis was conducted to examine whether Personalised Feedback, Writing Style Adaptation, and Writing Engagement statistically predicted variation in students' self-reported Business English Writing Skills. The results are summarised in Table 2. The overall regression model was statistically significant, $R^2 = 0.858$, adjusted $R^2 = 0.855$, $F(3, 146) = 294.336$, $p < 0.001$. Thus, the three predictors collectively accounted for 85.8% of the variance in the reported Business English Writing Skills scores within this sample. Personalised Feedback was the strongest predictor in the model ($\beta = 0.713$, $B = 0.715$, $t = 8.503$, $p < 0.001$). Writing Style Adaptation was also a significant positive predictor ($\beta = 0.478$, $B = 0.428$, $t = 4.566$, $p < 0.001$), while Writing Engagement was a significant positive predictor ($\beta = 0.467$, $B = 0.460$, $t = 4.930$, $p = 0.004$). These findings indicate that each construct made a statistically significant unique contribution to the prediction of students' reported Business English Writing Skills when the three predictors were considered simultaneously.

Table 2: Multiple regression analysis and multicollinearity diagnostics

Predictor	B	SE	β	t	p	Tolerance	VIF
Personalized Feedback	0.715	0.084	0.713	8.503	< 0.001	0.932	1.073
Writing Style Adaptation	0.428	0.094	0.478	4.566	< 0.001	0.734	1.363
Writing Engagement	0.460	0.089	0.467	4.930	.004	0.762	1.313

Multicollinearity was investigated by calculating VIF and tolerance values. It was found that the VIFs were 1.073 for Personalised Feedback, 1.363 for Writing Style Adaptation, and 1.313 for Writing Engagement, while tolerances were 0.932, 0.734, and 0.762, respectively. These values suggest that multicollinearity was not a problem for the predictors used.

Because the quantitative constructs were measured using self-reported questionnaire items collected from the same respondents during the same data-collection period, the possibility of common-method bias cannot be completely excluded. In particular, the high correlations observed between the predictors and Business English Writing Skills may partly reflect shared measurement method and the conceptual proximity of the constructs. Therefore, the reported associations should be interpreted cautiously and should not be considered evidence of causal effects. Future studies could reduce this concern by combining self-report measures with independently assessed writing performance, longitudinal measurements, or other data sources.

Qualitative findings

Personalized Feedback, Writing Style Adaptation, and Writing Engagement were found to be the key themes of the analysis. The first theme was characterized by the students' gratitude towards the immediate and convenient ChatGPT feedback compared to other methods. So, Interviewee 1 said: "Unlike teachers who take days, ChatGPT gives me instant feedback which helps me revise my work quickly." In addition, the similar feeling was expressed by Interviewee 3: "ChatGPT helped me rewrite an entire paragraph by suggesting better sentence structures. It felt like having a private tutor." This theme demonstrates how the ChatGPT facilitates students' self-study and revisions, helping to identify and correct mistakes. Nevertheless, there were certain limitations that needed to be noted. For example, Interviewee 6 said: "Sometimes, it only corrects grammar but doesn't tell why it's wrong. That makes it hard to learn deeply." This opinion was also shared by Interviewee 7 who feared that overusing AI will not allow him/her to think critically or to learn grammar rules independently. In conclusion, while the ChatGPT is highly appreciated for the immediate and quick response and easy access, sometimes it lacks explanations. That is why the ChatGPT should be used together with teacher's advice or cooperation with peers in order to make sure that the students will develop the writing skills over time and will not get too dependent on this AI.

The second theme discussed students' experience in developing formal and professional business writing styles while interacting with ChatGPT. The participants admitted that ChatGPT has been very helpful in learning how to write formally and professionally. For example, one Interviewee said: "*ChatGPT taught me how to open and close formal emails. It helped my assignments sound more professional,*" while the other one noted: "*I use its suggestions to polish reports sometimes it helps me choose better business words.*" However, not everything was positive for the participants in their interaction with ChatGPT. For instance, one of the respondents said, "*It doesn't always understand cultural tone or the exact meaning I want to convey in a Sri Lankan business setting.*" Likewise, the other participant admitted, "*Some word choices didn't suit the context.*" It can therefore be assumed that even though ChatGPT proves to be useful when it comes to polishing the style, it sometimes makes suggestions that are not culturally or contextually relevant.

As for the Writing Engagement theme, it is possible to say that ChatGPT helped increase students' motivation, confidence, and emotional engagement in writing activities. According to the participants, ChatGPT made writing more fun and motivating, which increased their involvement in academic activities. For example, Interviewee 1 stated, "*It makes writing feel less like a chore. When I'm stuck, it gives me a push,*" and Interviewee 8 said, "*I spend more time writing because I enjoy seeing how ChatGPT improves my draft.*" These comments reflect how the tool reduces writing stress, encourages experimentation, and transforms writing into a more interactive and

dynamic experience. Interviewee 6 also compared it to *"brainstorming with a friend,"* illustrating the feeling of support students have when they use it. Nevertheless, there were some negative experiences as well. For instance, Interviewee 10 stated, *"Sometimes I follow it blindly and stop thinking for myself. It's easy to just copy the suggestions."* This idea shows the possible problem with passive engagement when students simply rely on the answers given by ChatGPT without using any critical thinking or imagination.

Generally, it can be concluded that both quantitative and qualitative data indicated positive associations between the three ChatGPT-related constructs and students' reported Business English Writing Skills. In spite of the fact that ChatGPT improves motivation, accuracy, and stylistic improvement, the pedagogical effectiveness of its implementation depends on how ChatGPT is integrated into the process of teaching and learning, based on a critical approach to the issues considered. If students continue to depend on AI-generated ideas continuously, their originality and skills in self-editing may suffer from this in the future. This finding correlates with socio-cognitive learning theory since students need to integrate the information rather than repeat it to learn something. In summary, ChatGPT can improve the learning process of writing and can be further advanced with additional reflective and culturally sensitive assistance.

Discussion

The findings provide evidence of strong positive associations between the three ChatGPT-related constructs examined in this study Personalized Feedback, Writing Style Adaptation, and Writing Engagement and students' self-reported Business English Writing Skills. The quantitative results showed that all three relationships were statistically significant, while the regression model indicated that the three predictors jointly explained 85.8% of the variance in reported Business English Writing Skills. These findings should, however, be interpreted as associations and statistical predictions rather than causal effects because the study used a cross-sectional design and self-reported measures. The qualitative findings provide additional contextual evidence that helps explain why students perceived these dimensions as useful in their Business English writing activities.

Personalized Feedback demonstrated the strongest association with Business English Writing Skills ($r = 0.915$, $p < 0.001$) and the strongest standardized regression coefficient ($\beta = 0.713$, $p < 0.001$). This indicates that, among the three predictors examined, students' perceptions of personalized feedback were most strongly associated with their reported Business English Writing Skills. The result is consistent with the qualitative findings, in which participants valued the immediacy and convenience of ChatGPT's feedback and described using its suggestions to revise sentence structures and identify writing problems.

The finding is also consistent with previous research. Yang et al. (2024) reported benefits of AI-assisted writing feedback for grammatical accuracy and formal writing, while Oktarin et al. (2024) found that AI-based feedback supported writing fluency and syntactic development. Similarly, Soelistiyowati et al. (2024) reported that students using ChatGPT in Business English contexts perceived benefits in idea generation and paragraph coherence. Thus, the present study is consistent with previous research in identifying feedback as an important perceived benefit of AI-assisted writing. At the same time, the magnitude of the correlation in the present study ($r =$

0.915) warrants caution. Both Personalized Feedback and Business English Writing Skills were measured through the same self-report questionnaire and at the same time. Consequently, the strength of the relationship may partly reflect common-method effects and conceptual overlap between students' perceptions of helpful feedback and their perceptions of improved writing ability. The result therefore demonstrates a strong association rather than establishing that personalized feedback caused an improvement in writing performance.

The qualitative evidence provides a useful qualification to this quantitative finding. Although students appreciated immediate corrections, some participants reported that ChatGPT did not always explain why an error was incorrect and expressed concerns about becoming dependent on AI-generated suggestions. This suggests that the value of immediate feedback may depend on how students engage with and evaluate that feedback rather than simply accepting it. Writing Style Adaptation also demonstrated a strong positive association with Business English Writing Skills ($r = 0.887$, $p < 0.001$) and was a significant predictor in the regression model ($\beta = 0.478$, $p < 0.001$). Compared with Personalized Feedback, its standardized regression coefficient was lower, indicating a smaller unique contribution when the three predictors were considered simultaneously. Nevertheless, the correlation indicates that students who reported greater support for adapting their writing style through ChatGPT also tended to report stronger Business English Writing Skills.

The qualitative findings help explain this relationship. Participants described using ChatGPT to develop formal tone, business vocabulary, and appropriate structures for emails, reports, and other professional texts. These findings are consistent with previous studies (Almarzooq et al., 2020; Khan et al., 2025), which reported that AI-supported writing environments can support awareness of formality, audience expectations, stylistic variation, and genre-related features. The present findings therefore extend previous work by showing that this perceived stylistic support is strongly associated with reported Business English Writing Skills within the Sri Lankan tertiary context.

However, the qualitative findings also revealed limitations. Participants noted that some ChatGPT suggestions did not adequately reflect Sri Lankan cultural or contextual expectations. This finding is consistent with Wang et al. (2024), who highlighted limitations in the contextual appropriateness of AI-generated feedback. Thus, although style adaptation was strongly associated with reported writing skills, students still require guidance in evaluating whether AI-generated language is appropriate for a particular audience, purpose, and cultural context.

Writing Engagement showed the third strongest correlation with Business English Writing Skills ($r = 0.821$, $p < 0.001$) and was also a significant predictor in the regression model ($\beta = 0.467$, $p = 0.004$). Although this association was slightly weaker than those observed for Personalised Feedback and Writing Style Adaptation, it remained substantial. The result indicates that students who reported greater motivation, confidence, and involvement in writing activities when using ChatGPT also tended to report stronger Business English Writing Skills.

The qualitative findings provide contextual support for this result. Participants described the writing process as more interactive, enjoyable, and less stressful when they could receive immediate responses from ChatGPT. A few of the participants stated that the tool motivated them

to keep writing in the event they encountered any challenge or writer's block. Such insights are generally in line with what Chowdhury and Haque (2023), Kohnke and Moorhouse (2025) and Tang (2023) found about relationships between AI-supported writing environment, motivation, confidence, and engagement of the learners. However, the qualitative findings also highlight a possible conflict between engagement and learner autonomy as some participants admitted that sometimes they accepted the proposals of ChatGPT without enough critical analysis. In other words, it is necessary to stress that increased engagement with AI does not necessarily mean enhanced learning. It means that productive engagement is conditional upon students critically analyzing, correcting, and reflecting on suggestions of AI.

In this study, it is possible to see that all three relationships measured quantitatively demonstrate a pattern according to which Personalized Feedback was the most strongly associated with Business English Writing Skills ($r = 0.915$; $\beta = 0.713$), followed by Writing Style Adaptation ($r = 0.887$; $\beta = 0.478$) and Writing Engagement ($r = 0.821$; $\beta = 0.467$). Qualitative findings also reflected this pattern as they showed that students appreciated immediate feedback, professional style support, and engaging writing. At the same time, some limitations of the tool, which are not addressed in the quantitative data, became evident as well including lack of explanatory power, culturally inappropriate suggestions, and potential overdependence on AI. Thus, the convergence of the quantitative and qualitative findings provides grounds for considering these three dimensions as key aspects of students' experiences with ChatGPT-supporting Business English writing. However, due to the fact that the quantitative indicators are self-reported and were collected only once, it is not appropriate to interpret the results as evidence of improvement of writing skills induced by ChatGPT.

Conclusions

There is a temptation, when confronting a technology as powerful and as rapidly evolving as generative AI, to call for comprehensive new legislation. That call should be resisted; not because the challenge is minor, but because Sri Lanka's existing legal resources are more capable than they are often given credit for, and because comprehensive legislation enacted without practice experience tends to produce either over-inclusive rules that exclude reliable evidence or under-inclusive rules that admit unreliable exhibits. The better approach, and the one this article defends, is targeted procedural reform anchored in existing legal principles.

Sri Lanka's courts have consistently held that technological sophistication does not substitute for demonstrable integrity. That holding predates AI. It does not need to be legislated again; it needs to be operationalized for the AI environment given procedural teeth through a certificate requirement, a disclosure obligation, expert verification standards, and a judicial checklist. Each of those elements is either already present in embryonic form in Sri Lankan law or is directly supported by principles that Sri Lankan courts already accept.

The comparative experience of England and Wales, the European Union, and India converges on the same conclusion from different institutional directions. Reliable AI-era adjudication requires procedural discipline: provenance documentation, validated methodology, bias scrutiny, calibrated disclosure, and structured judicial control. These are not foreign imports. They are the

evidentiary requirements of a system that takes seriously both the probative value of technical evidence and the irreversible consequences of convicting on unreliable material.

The practical path forward is staged. A joint practice direction can be issued now, clarifying disclosure requirements and prescribing the minimum contents of an AI Evidence Certificate. Statutory amendments to the Evidence (Special Provisions) Act, the Code of Criminal Procedure Act, and the Electronic Transactions Act can follow as experience accumulates. Training programs for judges, prosecutors, and defense practitioners can be developed in parallel. None of this requires Sri Lanka to wait for a regional or international consensus; the legal resources and institutional capacity to begin are already available.

Ultimately, what the AI era demands of criminal evidence law is not a new philosophy but a renewed commitment to an old one: that the weight placed on a piece of evidence in a criminal trial should be proportionate to the verifiability of the process that produced it. In a justice system increasingly confronted by synthetic media and automated analytics, judicial reliability will depend less on the persuasiveness of an exhibit's appearance and more on the auditability of its origins.

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Conflict of interest statement

The author declares no conflict of interest.

Data availability statement

The datasets generated and/or analyzed during the current study are not publicly available due to participant confidentiality but are available from the corresponding author upon reasonable request.

Author Contribution

The author was responsible for the conceptualization, methodology, data collection, data analysis, interpretation of results, writing, and revision of the manuscript. The author read and approved the final version of the manuscript.

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