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ARTICLE

Using AI Large Language Model (LLM-ChatGPT) to Mitigate Spelling Errors of EFL Learners

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ABSTRACT

Despite considerable efforts invested in English language teaching, the prevalence of spelling errors poses a significant obstacle for English as a Foreign Language (EFL) learners due to the intricate nature of the English writing system, which is characterized by a lack of direct, one-to-one correspondence between spoken and written forms. Additionally, the lack of emphasis on developing writing skills exacerbates this issue. Various language learning tasks, such as text generation, machine translation, and long-text summarization, now widely employ Artificial Intelligence Large Language Models (AI-LLMs). This study aims to harness LLM-Generative Pre-training Transformer (GPT) (Language Model GPT) for writing skills to mitigate spelling errors by providing automated feedback, spelling assistance, and opportunities for regular practice. It also aims to gauge the perceptions and attitudes of EFL learners toward using LLM-GPT as a reinforcement approach to minimize spelling errors and improve writing proficiency. A total of 60 EFL students would be involved and a between-subject design method using control and experimental groups would be used in this study. The findings of the study indicated that learners who were taught using LLM_GPT application outscored their counterparts in another group and easily remembered the spelling of words as shown in the post-test session. Moreover, the learners felt the LLM_GPT application had a positive impact on learning spelling of words.

Keywords: Language Learning Model (LLM); Chat Generative Pre-Training Transformer (GPT); Mitigate Spelling Errors; Artificial Intelligence; IT; EFL Learners

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1. Introduction

Students in the fields of humanities and social sciences regard the English language as the main factor that hinders academic success. They make errors in all learning skills when they attempt to acquire a language other than their mother tongue, which labels them non-native speakers. Such errors are tolerated by the language's teachers since learners are in continuous progress of learning. However, these errors should be diminished in advanced levels of language learning because the English as a Foreign Language (EFL) learners themselves should shoulder the onus to improve their linguistic performance and minimize such errors. On top of that are Spelling errors, which represent one of the main obstacles EFL learners encounter during their learning journey. Learners need extensive/massive exercises to master spelling as there is no correspondence between written and spoken forms in the English language [1]. With the diffusion of artificial intelligence (AI) tools, many studies prove their suitability in many language learning tasks such as text generation, machine translation, and text summarization. According to [2, 3], their performance in responding to tasks contributes significantly to language learning. This study aims to mitigate spelling errors by applying Large Language Model (LLM-Chat Generative Pre-training Transformer (ChatGPT)). This application is characterized by adaptable functions (customization) that give learners instant and immediate feedback and adaptive language learning activities in an enjoyable AI learning environment. It also aims to gauge the learner's perception about using LLM application to mitigate spelling errors.

2. Literature Review

Out of four English language learning skills, writing is often overlooked and receives less attention compared to other skills, despite its crucial role in communication. Students in all levels of English learning struggle to master writing skills, leading to generally lower scores in writing courses. The complexity of the English spelling system, with no direct one-to-one correspondence between spelling and pronunciation, presents a significant challenge for both teachers and learners [4]. Additionally, the less attention given to this skill in traditional teaching approaches resulted in low performance in it [5]. This challenge presents an opportunity for researchers to explore the practical use of AI applications as reinforcement strategies to address this issue. AI is one of the most amazing fields of computer science that constructs machines that can think and act intelligently, similar to humans. It has the potential to radically change how we think, live, and work. The era of AI promises countless ways to improve the quality of life. It has become a prevalent technology used in almost all fields, such as healthcare, finance, transportation, astronomy, etc. AI is capable of learning, adapting, and making decisions on its own, making it an oriental tool for solving complicated problems [6–8].

Current generation is obsessed with AI applications due to their accuracy and promptness in achieving tasks. In learning language, AI has applications called AI language models (AI-LM), which are currently used in many language learning tasks such as text generation, machine translation, and text summarization [9]. These models, such as Generative Pre-training Transformer 3 (GPT-3), have become potent in achieving stunning performance in many areas of language tasks. Radford et al. [10] introduced the Transformer language Model (TLM). It is used in understanding some language tasks such as natural language inference and answering questions. Its performance in responding to tasks is a good addition to learning a language. Brown et al. [11] introduced the GPT-3 language model in translation and summarization. They came up with the idea that this model shows great performance and enhances achieving the tasks related to translating text between different languages and summarizing long texts. Devlin et al. [12] introduced a model called BERT Language, which showed strong performance in many tasks such as natural language understanding and sentiment analysis. XLNet is another model used by Yang et al. [13] in writing a research paper. This model can understand the meaning of a word in a context and consider the relationship between words in a sentence, which leads to comprehending the meaning of a whole text. This model becomes useful in achieving tasks such as summarizing long texts. Another amazing application of IT is Natural Language Processing (NLP), which allows computers to interpret texts and generate speech. It also supports virtual assistants such as Siri and Alex which have the function to understand and respond to spoken commands [6].

Huge amounts of text data rely on these language mod-

els. By applying neural networks to learn and generate human-like text, they can perform various language tasks and have triggered potential applications in the concerned fields. Therefore, AI applications progress rapidly in learning and acquiring languages because of the dire need of advances in deep learning and creative applications of algorithms to enhance language learning and increase computing power. The systems of these applications are supported by algorithms and neural networks that help to learn from a vast amount of data, enabling machines to perform cognitive tasks with precision and speed, often surpassing human capabilities[14, 15]. AI applications are used actively to bridge the gap in learning a language. Unanimously, research has shown that language learners who use AI-driven tools demonstrate language acquisition proficiency compared to those who use traditional learning methods. Moreover, using these tools effectively enhances engagement and motivation by providing learners with instant feedback and adaptive language learning activities[16]. Examples of these applications are Machine learning and natural language processing (NLP) which created applications in language acquisition that help learners practice speaking and receive instant feedback in grammar and pronunciation. They also enhance autonomous learning, which is the major goal of language acquisition in general[17]. Gupta et al.[18], in their studies, have shown that learners perceive chatbot applications as useful language learning resources, as they offer conversational practice and immediate feedback. Another study by Zhai[19] stresses the importance of incorporating the AI dialogue system into the teachers' daily teaching routine. This system can be used to assist students in searching for information, providing automatic guidance and feedback, and answering routine questions during the class discussion forum. Livingstone[4] stresses the suitability of computer applications to correct the second and foreign language errors made by learners. He concludes that the use of high-quality multimedia applications and programs, to a significant extent, stimulates and fosters language learning. Reinforcement learning is a machine learning approach that helps learners achieve learning goals in a complex and uncertain environment. It allows the tools of machines and software to automatically determine the ideal behavior within a specific context to maximize performance. It is a method of trial-and-error learning, meaning it does not always yield the optimal solution. Its nature depends on the interaction between the tool and the environment. It chooses actions, observes rewards, learns from these experiences, and then adjusts its strategy to gain the maximum cumulative reward and become skilled at achieving the environment's goals[14].

Chen et al.[20] investigated the impact of AI-powered assessment tools on language education. They discovered that these tools, especially those based on structural AI frameworks, greatly improve students' language learning achievements. The analysis further indicated that formative-iterative assessments, brief intervention periods, and their use in secondary education settings play a crucial role in the effectiveness of AI-driven assessments. These results highlight the ability of AI to streamline and customize language assessments, ultimately enhancing educational methodologies. Lee et al.[21] conducted a meta-analysis on AI-supported individualized language learning, revealing its beneficial effects on language development. The study emphasized that AI-driven systems, particularly those utilizing machine learning and hybrid models, outperform traditional rule-based approaches. These AI-powered methods deliver tailored instruction by evaluating learners' progress and suggesting personalized learning strategies, ultimately improving language proficiency.

Karataş et al.[22] conducted a qualitative case study on the use of AI applications, including ChatGPT, in foreign language education. The research, which involved university students in Turkey, revealed that AI tools had a positive impact on learning, particularly in writing, grammar, and vocabulary development. Students reported higher motivation and engagement, crediting these improvements to the flexibility and accessibility of AI in diverse learning activities. This study offers important insights into both the advantages and challenges of integrating AI technologies into language instruction. Qiao et al.[23] conducted research in China to investigate the effects of AI-based instructions on speaking skills and self-regulation among EFL students. The study, which involved AI applications such as Duolingo, found that students who received AI-driven instructions exhibited notable improvements in speaking proficiency and self-regulation compared to those taught through traditional methods. These results indicate that AI technologies can effectively enhance speaking abilities and encourage self-directed learning among language learners.

With all these studies, there is still a dire need for more research to make the best use of AI integration in language acquisition. In a nutshell, the future of AI applications in second language acquisition looks promising, and it offers exciting chances for autonomous and effective language learning experiences.

Study goals

The study aims to achieve the following objectives:

1- To investigate the impact of using LLM-ChatGPT on writing skills to minimize spelling errors by providing automated feedback, spelling assistance, and opportunities for regular practice compared to traditional ways of teaching spelling.
2- To gauge the students' perceptions and attitudes of using LLM-GPT as a reinforcement approach to minimize spelling errors and improve writing proficiency.

The finding concludes that using LLM-ChatGPT is an effective tool that enhances writing and minimizes spelling errors. It sharpens the learners' memory and makes them remember the words' spellings by providing them with automated feedback, spelling assistance and chances for regular practice.

Study Questions

1- What is the impact of using LLM-ChatGPT on minimizing spelling errors? Is it more effective than the traditional way of teaching spelling?
2- What is the learners' attitude/perception of using LLM-ChatGPT in teaching spelling skills?

Tests

In the pre-test, all participants attended a paper-based spelling test. The researcher would dictate sentences including all 50 words, with a maximum score of 50, to evaluate their existing spelling performance. Each misspelled word would receive a -1 point. The total number of misspelled words was subtracted from 50 to determine the final score. At the post-test session, the two groups will be given the same content with the same words in order to know which group outscored the other. The researcher would use manual rubrics to rate the participants' performance in both tests.

GPT and ChatGPT

GPT is a large language model developed by experts in AI research labs. It is an advanced and powerful technology capable of generating human-like text. ChatGPT, created by San Francisco-based OpenAI, is a conversational AI system designed to process and respond to natural language. It is engineered to understand human language and generate relevant, useful responses to various tasks [24].

ChatGPT is synonymous with instructGPT, which is trained to follow instructions and complete specific tasks promptly with detailed responses [25]. It also includes a customization feature, allowing users to refine outputs by providing specific instructions [26, 27]. Katar et al. [28] found that researchers use GPT-3 as an adjunct tool to generate abstracts summarizing the main point of their research.

Undoubtedly, ChatGPT-3 is a double-edged sword; it is beneficial when used wisely and ethically at academic and scientific levels. On the other hand, misuse of ChatGPT results in many unpreferable consequences such as plagiarism and makes the users not self-reliant. It also negatively affects the human ability to think and judge [29]. To control its use, Qasem [29] suggested that this software should be integrated with all academic platforms to possibly cope with this application and curtail the percentage of those misusing it. McCollough et al. [30] believe that, currently, GPT exhibits considerable promise in the realm of academic tasks. However, future integration into academic activities necessitates ongoing development and refinement to enhance its functionality and alignment with the requirements of educational needs. The researchers [31–33] explain the nature of ChatGPT, highlight some IT tools that are currently used in many learning environments, and approve the suitability of these tools to improve learning and enhance academic skills.

This study will use ChatGPT as a reinforcement tool to reduce spelling errors among EFL learners. We feed the software with 50 commonly misspelled words. The customization feature of the application is designed to direct the learners' focus toward identifying misspelled words and providing them with opportunities for correction. In the event of two consecutive unsuccessful attempts, the application offers learners the correct spelling of words during the third trial. This trial-and-error approach, in conjunction with

the utilization of the ChatGPT application, is envisioned to promote an engaging and captivating learning atmosphere, ultimately facilitating learning and reducing spelling errors among learners.

Procedures and Methodology

In terms of ethical considerations, the researchers adhered to the principles outlined in the Helsinki Declaration. They got consent letters from the chairman of the English department to conduct this study on students. Also, they got oral consent from the selected students who showed readiness to get involved in this study. They were affirmed that their identities would be concealed and their scores would be used only for research purposes.

There are 75 EFL students in all sections of the Writing II course, and 60 of them have agreed to participate in this study. They are enrolled in the second semester in the Department of English, King Khalid University (KKU). The selection of these individuals was executed randomly, with each student being assigned to one of the two groups in an unbiased fashion. The method chosen in this study is a between-subject design using control and experimental groups. A pre-test and post-test design were used to explore if students' spelling errors could be diminished when using LLM-ChatGPT as a reinforcing teaching tool and to find out if there were any significant differences between the two groups' achievements. To identify the most challenging words for students, a set of 50 common words learners always misspell will be selected and used in this study. The study runs into three sessions; in session one, all students would be in pre-test to measure their performance in spelling. The pre-test shows no significant differences in the mean score of the control and experimental groups. The second session would be allotted to the control group (N = 32) who will receive traditional writing instruction with spelling error feedback (dictating the words within sentences and writing the feedback on the same papers). Meanwhile, the experimental group (N = 28) will receive training on how to open a free account in ChatGPT, which is accessible to all. Additionally, they will be trained to use ChatGPT as a writing enhancement tool, focusing on reducing spelling errors. These words will be fed to GPT. During the training sessions, the teacher will dictate the words within sentences, and students will write them on their ChatGPT portal. GPT software will inform students about misspelled words and provide two attempts for correction. Should the initial attempts prove unsuccessful, GPT in the third iteration will provide the accurate spelling of the words, thereby serving as a remedial measure to enhance students' spelling word memory retention. During the third session, a post-test will be administered to both groups, aimed at assessing the extent to which the application of GPT contributes to the improvement of writing skills and the reduction of spelling errors among students who have utilized this software in contrast to their counterparts in the control group who have not used this application. To gather student feedback, a questionnaire will be distributed to the experimental group, seeking insights into how the program positively influences their spelling skill. It has 20 items which are modified from the Unified Theory of Advance and use of Technology (UTAUT) created by Venkatesh et al.[34]. The integration of GPT into the language learning process within the context of this research aspires to serve as a catalyst for the enhancement of pedagogical methods in writing instruction. It seeks to empower EFL learners at KKU by cultivating their proficiency in writing, with a specific emphasis on augmenting their spelling accuracy[35].

Session 2

In the second session, the researcher would prepare 50 simple sentences, each containing a word from the list provided in Figure 1A. The participants would attend sessions for nine hours (three classes for each group). The students in the control group would receive traditional methods of teaching spelling, while the students in the experimental group would be trained on how to create individual accounts in GPT portal, how to use facilities of the program, and how to use customization function to give instruction to the software in order to respond to their orders.

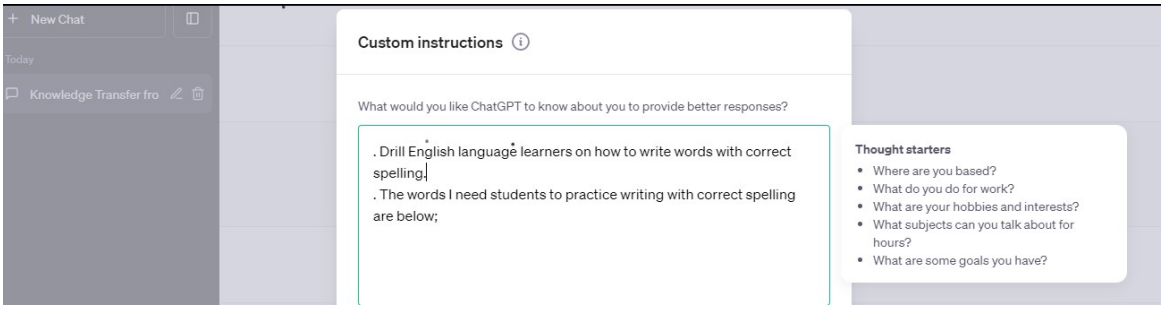
To help GPT software respond to needed tasks (correcting spelling errors), we provide specific and accurate instructions as follows:

- What would you like ChatGPT to know about you to provide better responses (**Figure 1A**)?

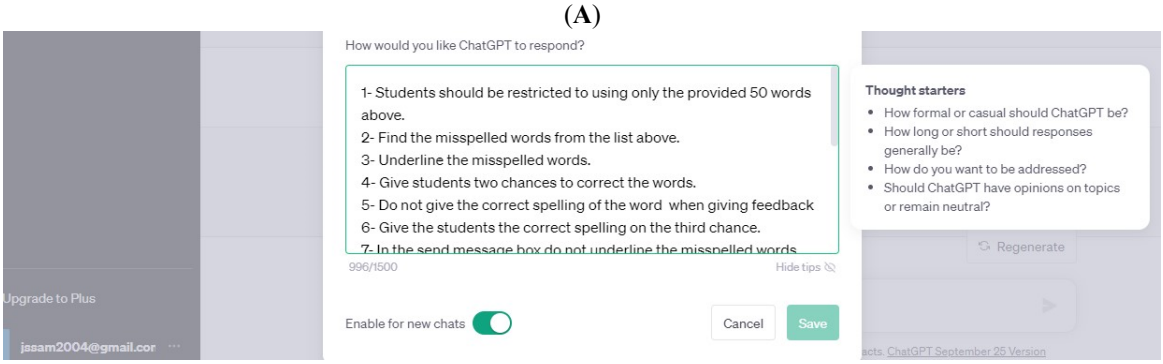
1- Drill English language learners on how to write words with correct spelling.
2- The words I need students to practice writing with correct spelling are below:
Knowledge, library, lighting, maintenance, noticeable, occasion, occasionally, official, parallel, parliament, pastime, pigeon, possession, preferable, principle, privilege, ignorance, immediate, independent, indispensable, intelligence, judgment, belief, calendar, category, cemetery, changeable, acceptable, accidentally, accommodate, acquire, a lot, foreign, fourth, questionnaire, receive, recommend, referred, reference relevant, religious, restaurant, schedule, sensible, separate, special, success, too, two, tomorrow.

- How would you like ChatGPT to respond (**Figure 1B**)?

1- Students should be restricted to using only the provided 50 words.
2- Find the misspelled words.
3- Underline the misspelled words.
4- Give students two chances to correct the words.
5- Do not give the correct spelling of the word when giving feedback.
6- Give the students the correct spelling on the third chance.
7- In the send message box do not underline the misspelled words with red color.



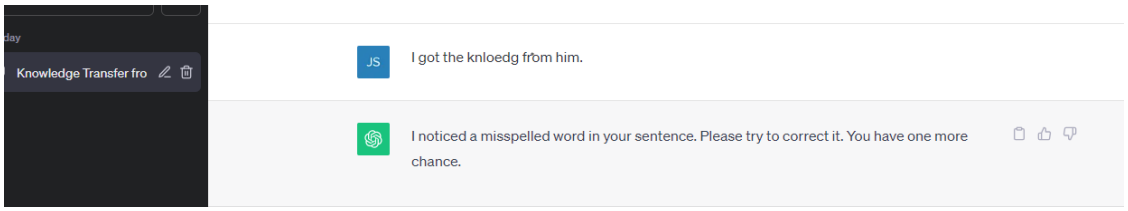
(**A**)



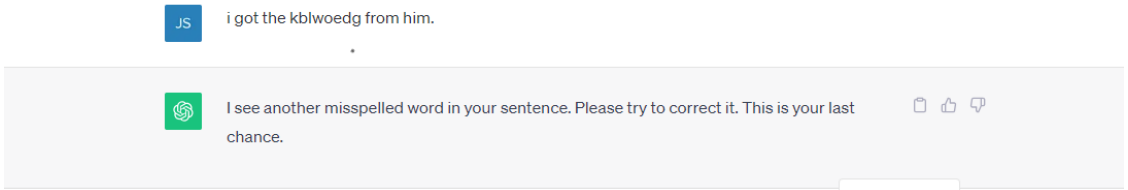
(**B**)

Figure 1. (**A**). What would you like ChatGPT to know about you to provide better responses? (**B**). How would you like ChatGPT to respond?

Students will be asked to preserve the provided instructions when writing sentences, which will be orally dictated by the researcher, within the designated space allocated for message input. If written incorrectly, the program will inform them about their wrong attempts and give them another chance for correction. If the second attempt is incorrect, it will provide the correct spelling and encourage them to continue with the next sentences (**Figure 2**).



(A)



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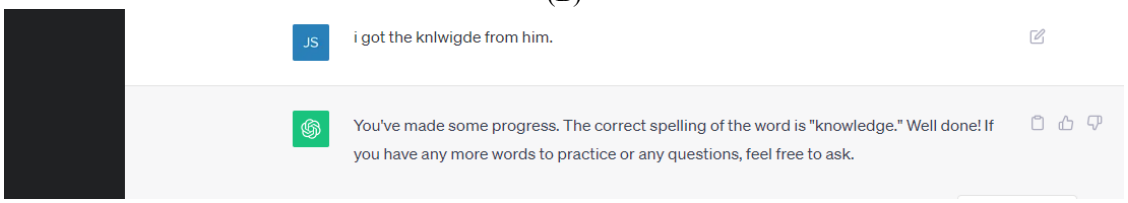

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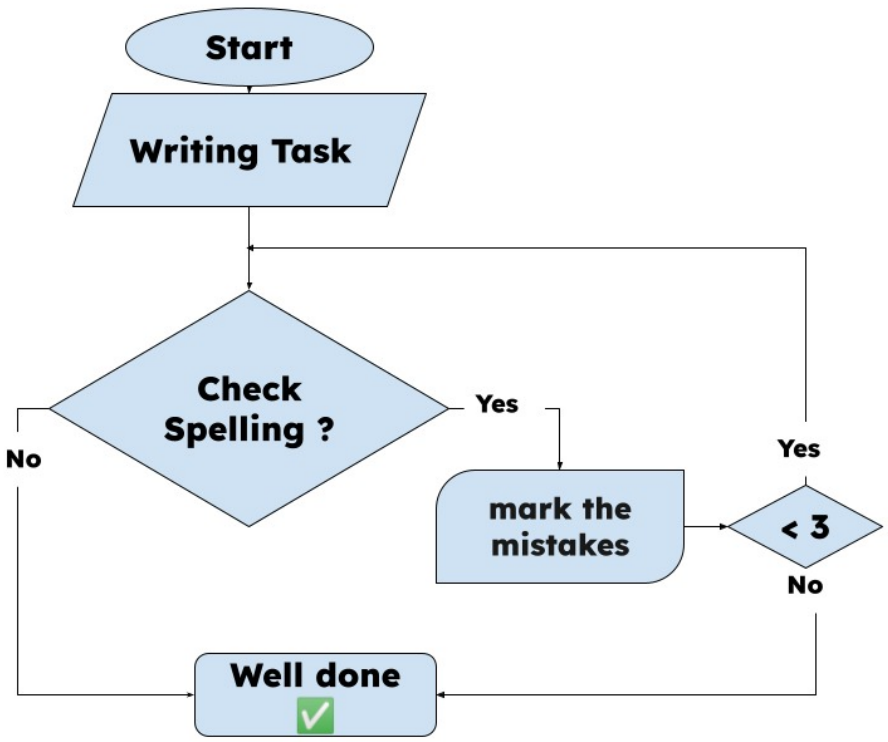

(D)

Figure 2. (**A**) GPT 1st remark to the participant. (**B**) GPT 2nd remark to the participants. (**C**) GPT gives correct spelling in the third chance. (**D**) Spelling correction process.

The above flowchart process for improving writing skills begins with the student attempting a spelling task. We check their spelling, and if there are no misspellings, the process moves forward. However, if there are errors, they are highlighted, and the student is asked to try again. If the second attempt is correct, the process continues; otherwise,

the errors are highlighted again, and the student is asked for a third try. If the third try is correct, the process proceeds, but if not, an automatic correction mechanism intervenes, correcting any remaining errors. The process concludes by recording the final spelling, whether corrected automatically or not.

Data Analysis

To know the means and standard deviation of learners' achievement in the tests, SPSS software was used to analyze the data. Similarly, a T-test was used to analyze the tests' scores in the two groups. A post hoc test was also conducted to know and compare the differences between the groups.

The learners' perception of using GPT as an enforcement approach of enhancing spelling skills was investigated through a questionnaire distributed to the participants (experimental group) hand to hand in the class. A total of 28 participants answered the survey questions.

3. Result

For normality and homogeneity of the sample, Levene's test on the pre-test was used to check whether there was a significant difference between the experimental and control groups. As shown in **Table 1**, a value of 1.506 indicates that the variability between the groups is approximately the same, and the participants were homogenous before the study was conducted. In **Table 2**, the T-test shows that the participants in the experimental group who used LLM-ChatGPT to learn spelling scored high marks (M = 13.81, SD = 2.89) compared to those in the control group who did not use it (M = 11.1, SD = 1.89). That means there were significant differences between the two groups. In a nutshell, using LLM-ChatGPT had a significant impact on enhancing spelling skills and reducing spelling errors, and the scores of learners who used GPT were significantly different from their counterparts who were taught using traditional methods.

Table 1. Homogeneity of sample.

	Levene's Statistic	**Df1**	**Df2**	**Sig**
Pre-Test of homogeneity	1.506	2	27	0.230

Table 2. Statistical analysis of T-test.

SPSS Analysis	**Experimental Group = 28**		**Control Group = 32**	
	M	**SD**	**M**	**SD**
Pre-test	9.79	3.3	8.82	2.87
Post-test	13.81	2.89	11.1	1.89

Questionnaire

As mentioned earlier, spelling errors are a common phenomenon among EFL learners. Scholars continuously work on developing tools to overcome this problem. LLM-ChatGPT is an enforcement learning approach used in this study to minimize spelling errors among EFL learners. The study substantiates the effectiveness of this application, with participants exhibiting positive sensitivity toward its use. To gauge the learners' attitude/perception toward using ChatGPT in reducing spelling errors, a questionnaire was distributed to the students in the experimental group (**Table 3**). The questionnaire contains 20 items considering the UTAUT-1 model which is modified by Hassan et al.[33]. The constructs include effort expectancy (1–5), performance expectancy (6–8), social influence (9–10), facilitating conditions (11–16), and behavioral condition (16–20). These constructs are implicitly incorporated in an integrated mode. A Likert scale is used to indicate the learners' responses, with the following codes:

1- Strongly Disagree, 2- Disagree, 3- Neutral, 4- Agree, and 5- Strongly Agree.

Table 3. Questionnaire analysis of the experimental group.

N.	Items	1	2	3	4	5	M	SD
1	ChatGPT application is useful in Writing's courses.	4 14%	5 17%	4 14%	13 46%	2 7%	4.19	0.765
2	ChatGPT applications help me reducing spelling errors.	1 4%	3 10%	4 14%	19 68%	1 4%	4.24	0.76
3	I can use ChatGPT application to enhancing other language skills.	1 4%	2 7%	8 28%	15 54%	4 14%	4.23	0.86
4	Using ChatGPT application increases the chance to score high grades in writing.	1 4%	3 11%	3 11%	18 64%	3 11%	4.19	0.69
5	Using ChatGPT did not improve my performance in writing.	14 50%	3 11%	1 4%	8 28%	2 8%	2.50	1.19
6	The use of GTPchat application did not improve my academic performance.	15 54%	4 14%	2 7%	5 18%	2 8%	2.48	1.17
7	I become skillful in using ChatGPT applications.	1 4%	2 8%	2 8%	19 68%	5 18%	4.45	0.912
8	Application of ChatGPT is easy to use.	3 11%	4 14%	1 11%	17 61%	3 11%	4.50	0.81
9	Teachers and senior students in my department encourage me to use ChatGPT applications.	0	0	6 21%	17 61%	5 18%	4.09	0.83
10	ChatGPT application needs group work working together.	15 18%	7 25%	3 11%	1 4.%	2 8%	2.66	1.13
11	I have full control over using GPT applications	00	6 21%	7 25%	9 32%	6 21%	4.43	0.914
12	I had enough sources to use this application.	6 21%	7 25%	7 25%	4 14%	4 14%	3.72	0.92
13	I am aware of how to use ChatGPT to minimize spelling errors.	1 4%	4 14%	4 14%	14 50%	5 18%	4.46	0.82
14	The prerequisite of ChatGPT application is to be skillful in computer skills	1 4%	1 4%	1 4%	17 61%	8 29%	4.37	0.85
15	I had difficulties in using ChatGPT application because it had complicated tasks.	19 68%	3 11%	1 4%	4 14%	1 4%	3.26	1.09
16	ChatGPT application is harmonious with other aspects of learning	3 11%	3 11%	5 18%	12 43%	5 18%	3.22	1.11
17	Using ChatGPT application suits my learning style.	1 4%	1 4%	2 8%	10 36%	16 57%	3.17	1.13
18	It is a good idea to use ChatGPT to diminish spelling errors.	2 8%	2 8%	2 8%	5 18%	17 61%	4.44	0.76
19	Incorporating ChatGPT makes learning more interesting	1 4%	0	1 4%	5 18%	21 75%	4.39	0.910
20	For me, ChatGPT application is depressing.	21 75%	5 18%	0	1 4%	1 4%	2.49	1.15

Generally, the participants in the questionnaire show a positive attitude toward using LLM-ChatGPT to improve writing skills and minimize spelling errors. In items 1–5 related to effort expectancy's construct, they strongly agree that ChatGPT is useful and helps improve spelling skills in particular and other language skills in general. In performance expectancy construct (items 6–8), they felt that ChatGPT application is easy. They became skillful in its application and ready to use it in other academic activities. In social influence construct (items 9–10), they strongly agreed that their senior colleagues and teachers always encourage them to use the application in academic activities. Regarding the facilitating condition construct (items 11–16), they confirmed having control over using the application and having the required resources to use it. In the construct of behavioral condition (items 16–20), the participant felt that the idea of using ChatGPT in learning is stunning and pleasant. The positive attitude the participants showed in using this application lays a foundation for generalizing its use in all language learning skills.

4. Discussion

Concerning the first research question, "What is the impact of using LLM-ChatGPT on minimizing spelling errors? Is it more effective than the traditional way of teaching spelling?" the study examines the impact of using LLM-ChatGPT on minimizing spelling errors. The results indicate that using LLM-ChatGPT has an effect on enhancing spelling skills and reducing spelling errors. It also reveals a clear

positive impact of using LLM_GPT on improving spelling skills because it provides learners with automated feedback, spelling assistance, and opportunities for regular practice compared to the traditional way of teaching spelling.

This finding aligns with the work of Radford et al.[10], who introduced the TLM model and demonstrated its effectiveness in helping language learners with tasks such as answering questions and natural language inference. Similarly, Brown et al.[11] in their GPT-3 model highlighted its success in tasks such as translation and summarization. The study also aligns with the BERT language model of Delvin et al.[12] who go beyond surface language structure to deep language structure. The study also aligns with the XLNet model of Yang et al.[13] in writing a research paper.

In addition, the study supports the NLP model of LeCun et al.[6], which enables computers to interpret text and generate speech, facilitating virtual assistants such as Siri and Alex. Finally, the study agrees with the idea of Livingstone[4] who stresses that AI applications are particularly effective in correcting second/foreign-language errors, emphasizing the role of high-quality multimedia programs in fostering language learning.

The LLM-ChatGPT application, while demonstrating its utility, also presents a potential downside associated with misuse. Such misuse can lead to unfavorable academic outcomes, notably the erosion of learners' self-reliance and an adverse impact on their critical thinking abilities. Qasem[29] suggested that there should be control over using AI applications in general such as integrating them with academic platforms and implying some restrictions to curtail the percentage of those misusing them. Oguz et al.[31] said that ChatGPT has a promising future but it needs further improvement in its functions to suit learning language policy.

Regarding the second research question, "What is the learners' attitude/perception of using LLM-ChatGPT in teaching spelling skills?" the result shows a positive attitude toward implementing LLM-ChatGPT in learning writing and reducing spelling errors. They affirmed that the application was interesting and they utilized this software to enhance their spelling skill. The result confirmed this perception and is aligned with the studies mentioned above.

5. Conclusion

The study displays the effectiveness of using LLM-ChatGPT on enhancing writing skills and reducing spelling errors. The participants remember the spelling of words better when using this software because it gives them automated feedback, spelling assistance, and opportunities for regular practice. Foreign/Second-language teachers may find value in the outcomes of this study and choose to incorporate them into their pedagogical strategies, leveraging the findings to bolster the spelling proficiencies of their students. Before that, students should get a university prerequisite course on how to use AI tools in learning. That would pave the road for them to incorporate these tools into the learning process.

Limitations

The study is not devoid of limitations, and these constraints could be addressed by researchers who share an interest in this domain. Some of these are;

1- The study did not include the impact of using LLM-ChatGPT to enhance autonomous learning. Therefore, some researchers may tackle this issue in future research.
2- This research focused on a limited number of words fed into the software. In further research, it is necessary to investigate the effect of using this application to drill students to correct the spelling errors in a whole text.
3- The instructors' perception/attitude is not measured in this study. Therefore, further studies are needed to investigate the perception of instructors on using LLM-GPT chat to minimize spelling errors among EFL learners.

Author Contributions

All authors contribute equally to this work.

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Conflicts of Interest

The authors did not report any potential conflicts of interest in this study.

References

[1] Van Lier, L., 2014. Interaction in the language curriculum: Awareness, autonomy and authenticity. Routledge: London, UK.

[2] Liu, Y., Chen, C.M., Chang, C.Y., 2021. Investigating the effects of an intelligent tutor with adaptive instructional support in mobile-assisted language learning. Interactive Learning Environments. 29(1), 31–48.

[3] Tabrizi, H.H., Jafarie, M., 2023. Intelligent (Language) Tutoring Systems: A Second-order Meta-analytic Review. Journal of Applied Linguistics Studies. 2(1), 30–42

[4] Livingstone, K.A., 2012. The Importance of Feedback and Reinforcement in Computer-Assisted Language Learning (CALL). Baraton Interdisciplinary Research Journal. 2(1), 43–51.

[5] Jaashan, H.M.S., Halim, T., Halim, S., et al., 2023. Poor Handwriting and its Knock-on Effect on EFL Learners' Academic Performance. Jilin Daxue Xuebao (Gongxueban)/Journal of Jilin University (Engineering and Technology Edition). 42(04). DOI: https://doi.org/10.17605/OSF.IO/QETHU

[6] LeCun, Y., Bengio, Y., Hinton, G., 2015. Deep learning. Nature. 521, 436–444. DOI: https://doi.org/10.1038/nature14539

[7] Bengio, Y., Courville, A., Vincent, P., 2023. Representation learning: A review and new perspectives. IEEE Transactions on Pattern Analysis and Machine Intelligence. 35(8), 1798–1828. DOI: https://doi.org/10.1109/TPAMI.2013.50

[8] Goodfellow, I., Bengio, Y., Courville, A., 2016. Deep Learning. MIT Press: Cambridge, MA, USA.

[9] Guo, C., Lu, Y., Dou, Y., et al., 2023. Can ChatGPT boost artistic creation: The need of imaginative intelligence for parallel art. IEEE/CAA Journal of Automatica Sinica. 10(4), 835–838. DOI: https://doi.org/10.1109/JAS.2023.123555

[10] Radford, A., Wu, J., Child, R., et al., 2019. Language models are unsupervised multitask learners. OpenAI blog. 1(8), 9.

[11] Brown, T., Mann, B., Ryder, N., et al., 2020. Language models are few-shot learners. Advances in Neural Information Processing Systems. 33, 1877–1901. DOI: https://doi.org/10.48550/arXiv.2005.14165

[12] Devlin, J., Chang, M.W., Lee, K., et al., 2018. Bert: Pre-training of deep bidirectional transformers for language understanding. arXiv preprint arXiv:1810.04805. DOI: https://doi.org/10.48550/arXiv.1810.04805

[13] Yang, Z., Dai, Z., Yang, Y., et al., 2019. XlNet: Generalized autoregressive pretraining for language understanding. Advances in Neural Information Processing Systems. 32. DOI: https://doi.org/10.48550/arXiv.1906.08237

[14] Sutton, R.S., Barto, A.G., 2018. Reinforcement learning: An introduction. MIT Press: Cambridge, MA, USA.

[15] Jovanovic, M., Campbell, M., 2022. Generative artificial intelligence: Trends and prospects. Computer. 55(10), 107–112. DOI: https://doi.org/10.1109/MC.2022.3192720

[16] Liu, X., Liu, F., Shi, M., 2021. Design and Practice of Blended "Golden Course" of College English Under the Guidance of OBE and POA. Journal of Jilin Provincial Institute of Education. 11, 78–82. DOI: https://doi.org/10.16083/j.cnki.1671-1580.2021.11.019

[17] Moya, S., Camacho, M., 2024. Leveraging AI-powered mobile learning: A pedagogically informed framework. Computers and Education: Artificial Intelligence. 7, 100276.

[18] AbuSahyon, A.S.A.E., Alzyoud, A., Alshorman, O., et al., 2023. AI-driven technology and Chatbots as tools for enhancing English language learning in the context of second language acquisition: a review study. International Journal of Membrane Science and Technology. 10(1), 1209–1223.

[19] Zhai, C., 2023. A systematic review on artificial intelligence dialogue systems for enhancing English as foreign language students' interactional competence in the university. Computers and Education: Artificial Intelligence. 4, 100134. DOI: https://doi.org/10.1016/j.caeai.2023.100134

[20] Chen, A., Zhang, Y., Jia, J., et al., 2025. A systematic review and meta-analysis of AI-enabled assessment in language learning: Design, implementation, and effectiveness. Journal of Computer Assisted Learning. 41(1). DOI: https://doi.org/10.1111/jcal.13064

[21] Lee, H., Lee, J.H., 2024. The effects of AI-guided individualized language learning: A meta-analysis. Language Learning & Technology. 28(2), 134–162. https://hdl.handle.net/10125/73575

[22] Karataş, F., Abedi, F.Y., Ozek Gunyel, F., et al., 2024. Incorporating AI in foreign language education: An investigation into ChatGPT's effect on foreign language learners. Education and Information Technologies. 29, 19343–19366. DOI: https://doi.org/10.1007/s10639-024-12574-6

[23] Qiao, H., Zhao, A., 2023. Artificial intelligence-based language learning: illuminating the impact on speaking skills and self-regulation in Chinese EFL context. Frontiers in Psychology. 14. DOI: https://doi.org/10.3389/fpsyg.2023.1255594

[24] OpenAI. 2023. ChatGPT. Available from: https://openai.com/blog/chatgpt/ (cited 10 October 2023).

[25] Cheng, K., He, Y., Li, C., et al., 2023. Talk with ChatGPT about the outbreak of Mpox in 2022: reflections and suggestions from AI dimensions. Annals of Biomedical Engineering. 1–5. DOI: https://doi.org/10.1007/s10439-023-03196-z

[26] Cascella, M., Montomoli, J., Bellini, V., et al., 2023. Evaluating the feasibility of ChatGPT in healthcare: an analysis of multiple clinical and research scenarios. Journal of Medical Systems. 47(1), 33. DOI: https://doi.org/10.1007/s10916-023-01925-4

[27] Deng, J., Lin, Y., 2022. The benefits and challenges of ChatGPT: An overview. Frontiers in Computing and Intelligent Systems. 2(2), 81–83. DOI: https://doi.org/10.54097/fcis.v2i2.4465

[28] KATAR, O., ÖZKAN, D., YILDIRIM, Ö., et al., 2022. Evaluation of GPT-3 AI language model in research paper writing. Turkish Journal of Science and Technology. 18(2), 311–318. DOI: https://doi.org/10.55525/tjst.1272369.

[29] Qasem, F., 2023. ChatGPT in scientific and academic research: future fears and reassurances. Library Hi Tech News. 40(3), 30–32. DOI: https://doi.org/10.1108/LHTN-03-2023-0043

[30] McCollough, C.J., Wallace, A.A., Luttrell, R., 2022. Artificial Intelligence: The Dark Side, Ethics, and Implications. In: Lipschultz, J.H., Freberg, K., Luttrell, R. (Eds.). The Emerald Handbook of Computer-Mediated Communication and Social Media. Emerald Publishing Limited: West Yorkshire, UK. pp. 671–684. DOI: https://doi.org/10.1108/978-1-80071-597-420221039

[31] Oguz, F.E., Ekersular, M.N., Sunnetci, K.M., et al., 2024. Can Chat GPT be Utilized in Scientific and Undergraduate Studies? Annals of Biomedical Engineering. 52, 1128–1130. DOI: https://doi.org/10.1007/s10439-023-03333-8

[32] Esplugas, M., 2023. The use of artificial intelligence (AI) to enhance academic communication, education and research: a balanced approach. Journal of Hand Surgery-European Volume. 48(8), 819–822. DOI: https://doi.org/10.1177/17531934231185746

[33] Hassan Ja'ashan, M.N., Abdulaziz Alfadda, H., Saleh Mahdi, H., 2022. Using a holographic application in learning medical terminology for English as a foreign language student. Interactive Learning Environments. 1–14. DOI: https://doi.org/10.1080/10494820.2022.2093913

[34] Venkatesh, V., Morris, M.G., Davis, G.B., et al., 2003. User acceptance of information technology: Toward a unified view. MIS Quarterly. 27(3), 425–478. DOI: https://doi.org/10.2307/30036540

[35] May, R., Zhang, X., Wu, J., et al., 2019. Reinforcement learning control for indoor comfort: a survey. IOP Conference Series Materials Science and Engineering. 609(6), 062011. DOI: https://doi.org/10.1088/1757-899X/609/6/062011