Exploring the application of ChatGPT in learning English of students – A study on perception of sophomores at Nguyen Tat Thanh University

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Abstract

This research focuses on analysing the application of ChatGPT, which is a natural language processing model, in learning English at the university level. A survey was conducted in 244 sophomore at Nguyen Tat Thanh University, to investigate their opinions on the use of ChatGPT in education. Results indicate that the majority of students hold a positive view towards using ChatGPT in learning English and believe that it can help improve their English skills. The research also proposes several ways to enhance the effectiveness of using ChatGPT in learning. In summary, this study highlights the potential of ChatGPT in supporting English education at universities.

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1 Introduction

In the context of globalization, proficiency in using English languages has become essential for both professional and daily life purposes [1]. However, English is not easy for everyone. Therefore, this research aims to advocate and demonstrate a multi-faceted and innovative perspective on the use of ChatGPT – an artificial intelligence tool to facilitate easier and more effective language learning for students. The study focuses on investigating the practical effectiveness of the widespread application of ChatGPT in English learning. In particular, the study explores whether ChatGPT can assist students in tackling questions related to grammar, vocabulary, and communication skills in language learning or possible risks of over-dependence. The research adopts a qualitative method through in-depth interviews to collect opinions and proposes solutions to potential issues, aiming to preserve students' autonomy in the learning process. With this research, we aim to aid students by leveraging the latest technology in artificial intelligence and natural language processing to support the learning process. Additionally, the findings from this study will provide valuable information for educational administrators and application developers to build similar products in the future.

ChatGPT utilizes advanced machine learning algorithms and has been extensively pre-trained on large text datasets, enabling it to produce detailed responses to user inputs. The model is highly versatile and can be fine-tuned for specific tasks, allowing developers to customize for their particular needs. As a powerful tool, ChatGPT has the potential to transform human-machine interaction to promote more natural and intuitive communication. Its applications are wide-ranging, including customer service chatbots, language translation tools, and virtual assistants. Additionally, there is increasing exploration of its potential in education, aimed at enhancing student learning experiences and fostering greater engagement.

2 Theoretical foundation and practical application

2.1 An Overview of ChatGPT

Đại học Nguyễn Tất Thành

ChatGPT is a large language model developed by OpenAI based on the GPT-3.5 architecture, designed to answer questions and engage in discussions with humans using natural language [2]. With extensive training data, ChatGPT possesses the ability to generate natural and coherent feedback on various topics. It can be applied in various contexts, including chatbots, virtual assistants, and support for automated content creation. ChatGPT has been evaluated as capable of producing natural and accurate responses in many real-world situations [3]. According to a scientific study [4], ChatGPT can be a valuable resource in higher education to enhance writing skills. It can generate text, summarize information, and outline content to save time and improve work quality. Furthermore, it can detect grammatical errors and style issues, making written content more comprehensible. Currently, ChatGPT is an attractive tool with over one million registrations within a week, as indicated by previous research [5].

In Viet Nam, recent studies have begun to explore the application of ChatGPT in English teaching and learning. In a study by Tran & Tran (2023) on the role of ChatGPT in developing critical digital literacies in language learning, they reported that ChatGPT not only aids in improving language skills but also enhances digital literacy among students by encouraging critical thinking and effective use of digital tools [6]. Another study focused on university lecturers' perceptions of ChatGPT in language teaching and assessment,

highlighting the model's potential to streamline assessment processes and provide consistent, high-quality feedback [7].

These studies collectively underscore the growing recognition of ChatGPT's capabilities in educational settings in Viet Nam, particularly in enhancing the teaching and learning of English through innovative, artificial intelligence-driven approaches.

2.2 The application of ChatGPT in enhancing writing skills for individuals at the elementary level

ChatGPT can be utilized to create adaptive learning systems that adjust teaching methods based on students' progress and learning performance. A study has demonstrated that an adaptive learning system based on ChatGPT model can provide more effective support for students in self-directed learning and reference [8], leading to improved performance in students' essay tests. The research indicates that developing a model that comprehends students' knowledge and adjusts the difficulty of generated exercises according to the students' abilities to use instruments. Furthermore, ChatGPT can assist teachers in grading students' essays, allowing more time for them to focus on other aspects of the teaching process. Furthermore, it can aid lecturers' in identifying grammar errors, vocabulary discrepancies, and writing styles issues that beginner writers may encounter and provide comprehensive methods for resolution without significant efforts.

Table 1 Comparison of ChatGPT and Grammarly

FEATURE	CHATGPT	GRAMMARLY
Correctness	Provides grammar, punctuation, and style suggestions	Extensive grammar, punctuation, and style correction
Tone Suggestions	Can generate text in various tones based on input prompts	Suggests tone adjustments to match the desired style
Full-Sentence Rewrites	Can rewrite sentences or paragraphs based on user prompts	Offers full-sentence rewrites for clarity and conciseness
Intelligent Editing	Generates content and suggestions based on user input	Intelligent editing with real-time suggestions
Generate Text	Can generate extended text on a wide range of topics	Primarily focuses on improving existing text
Catch Accidental Plagiarism	Can detect and highlight potential plagiarism issues	Detects plagiarism and provides originality reports
Sentiment Analysis	Can analyze and adjust text sentiment	Limited to tone suggestions

2.3 The application of ChatGPT in building fundamental knowledge in the writing domain

Large language models, such as ChatGPT, have the potentials to revolutionize teaching and support the education process [9]. For university students, these language models can assist research tasks and essay writing, as well as foster critical thinking and problem-solving skills [10]. These models can help students comprehend complex topics through summarized insights and apply acquired knowledge in practical scenarios. Despite significant limitations, ChatGPT holds immense potentials as an educational resource for enhancing writing skills. Effectively leveraging ChatGPT can empower students to improve their writing abilities, leading to broader applications in various contexts.

Moreover, these language models serve as indispensable tools for students to navigate intricate subjects by providing succinct summaries and facilitating the practical application of acquired knowledge. Despite inherent limitations, ChatGPT holds significant promise as an educational aid for enhancing writing proficiencies. Through strategic utilization of ChatGPT's capabilities, students can remarkably improve their writing skills, thus broadening the applicability of their expertise across various domains.

2.4 The influence of ChatGPT on the learning attitude of students in the writing subject

Large language models can also support the development of research skills by providing students with information and resources on specific topics. They can offer suggestions on unexplored aspects and current research themes, thus aiding students in better understanding and analyzing documents. However, there may be negative impacts on academic outcomes, such as using ChatGPT to plagiarize assignments. Therefore, when using these models, educators need to employ measures to mitigate such occurrences.
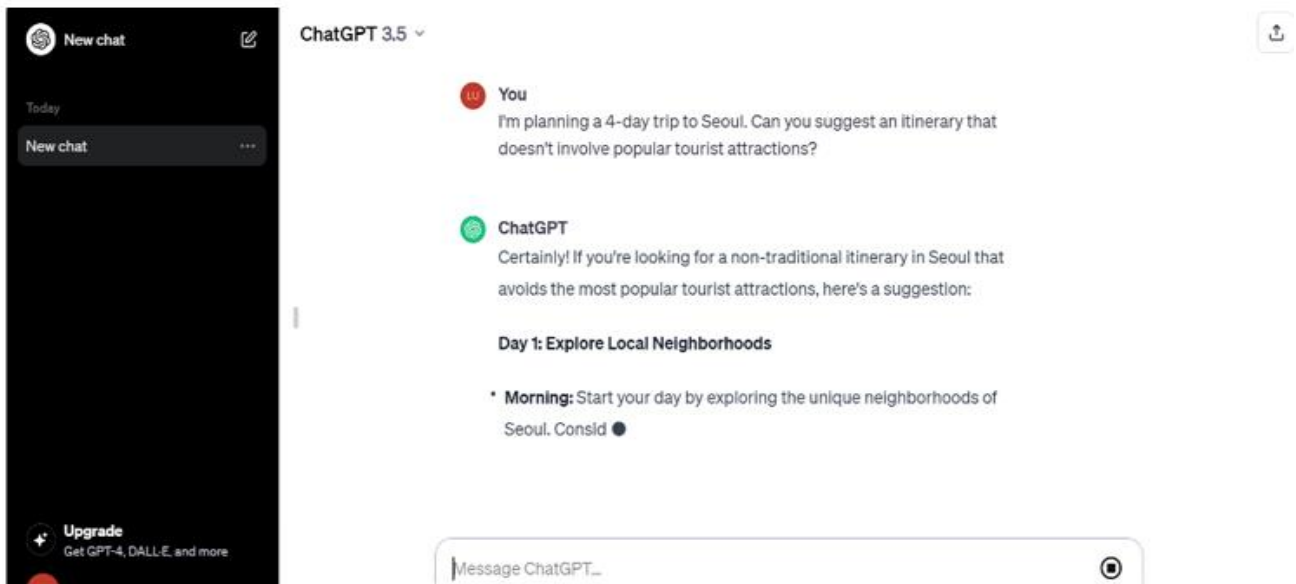

Figure 1 ChatGPT layout

The integration of Chat GPT into English teaching and learning aligns with theoretical frameworks such as communicative language instruction and constructivism. Additionally, it promotes learners' engagement, autonomy, and technology-enhanced learning in line with established best practices. Pedagogical approaches such as task-based language instructions and flipped learning effectively harness the potential of Chat GPT conversation in language education. Integrating ChatGPT into current English language curricula can significantly enhance pedagogical outcomes. ChatGPT delivers individualized support through adaptive learning modules and real-time corrective feedback, which facilitates the development of writing proficiency, syntactical accuracy, and lexical acquisition. Its application can be particularly advantageous within contemporary instructional frameworks, where ChatGPT can serve as a resource for pre-class preparation, allowing learners to engage more deeply in synchronous learning environments. Moreover,

ChatGPT can augment learners' research capabilities and their comprehension of scholarly materials. It is imperative, however, that educators supervise its integration to ensure that learners maintain cognitive autonomy and do not become excessively reliant on the technology. When strategically implemented, ChatGPT can be a transformative tool in advancing the efficacy of English language education.

However, while the question highlights the transformative role of ChatGPT conversation in fostering authentic communication, learner autonomy, and meaningful language practice, further research is warranted to explore its long-term effects, scalability, and optimal implementation across diverse language learning contexts [9].

3 Methodology

By using a qualitative methods approach, data was collected through a survey conducted at Nguyen Tat Thanh University during the academic year 2023-2024 by Google Form, targeting over 250 second-year English majoring students, with 244 valid responses obtained. The primary software used by students for language learning was ChatGPT, which was compared with Grammarly, a tool focusing on grammar correction. It's important to note that both ChatGPT and Grammarly, as used by the students, were accessible through both free and paid versions, allowing them to choose based on their needs and preferences.

Students primarily engaged in self-directed learning with ChatGPT, although they received preliminary guidance and reminders from their instructors on how to use the software effectively. After the initial orientation, students were encouraged to explore and utilize ChatGPT independently. Their progress was evaluated through their learning behaviors and direct assessments such as exams and written assignments, which also required the active involvement and responsibility of instructors in monitoring and assessing student improvement.

The survey instrument comprised 09 unstructured interview questions designed to explore various aspects of students' engagement with ChatGPT. These questions addressed their awareness of ChatGPT and its features, the potential applications of ChatGPT in language learning, as compared to the traditional learning method for IELTS essay writing, grammar testing, vocabulary explanations, and their willingness to use ChatGPT. Additionally, students were asked to identify the most useful features of ChatGPT in their learning process and to express their beliefs about whether ChatGPT could enhance their language skills. The data collection was carried out online, using the university's email system to distribute the survey link to ensure broad participation. The raw data was then automatically recorded and organized through the online survey platform, followed by a data cleaning process to remove incomplete responses and standardize the data format.

For data analysis, descriptive statistics, such as frequency distributions and means, were employed to summarize the quantitative responses, while thematic analysis was used to identify common themes and patterns in the qualitative data. Statistical charts in the form of pie charts were generated to visualize the responses, aiding in the interpretation and presentation of the findings. This approach allowed for a comprehensive understanding of how ChatGPT was utilized by students, how it impacted their learning experience, and the areas where further improvements might be needed.4 Results and discussion

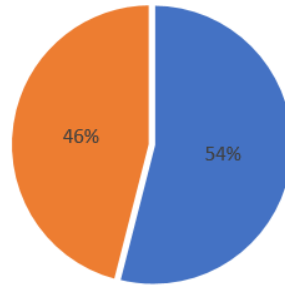## 4 Results and discussion

4.1 Result

The development of ChatGPT applications significantly influenced the enhancement of language expression skills as well as various other domains of learning. The study primarily focuses on the effective utilization of ChatGPT, with a particular emphasis on presentation and written expression in English. Through the collected data, the research team found that over 50 % of students expressed interest in using ChatGPT for language learning, while approximately 30 % were interested but concerned about potential side effects, and the remaining 20 % neither liked nor disliked using ChatGPT but did not oppose their application in their lives.
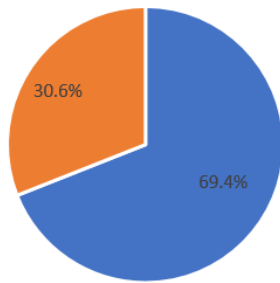
Figure 2 Percentage of students participating in the experience

Figure 3 Percentage of students compared to traditional learning methods
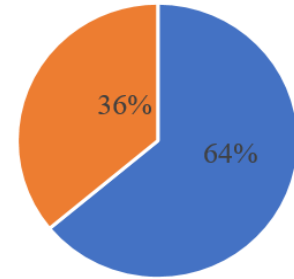
Figure 4 Percentage of students contributing to language proficiency improvement

According to the updated survey based on 244 respondents, 69.4 % express a desire to experience ChatGPT in learning to enhance grammar skills, gain a deeper understanding of vocabulary explanations, and improve quickly in generating test questions. However, approximately 30.6 % disagree with this notion because they believe that it may cause negative consequences instead of improving English skills.

According to the statistics presented in Figure 3, regarding the application of ChatGPT to improve language learning methods compared to the traditional approaches, approximately 54 % of individuals agree with this idea. They express a willingness to experience new environment that applies ChatGPT to enhance their English proficiency quickly. On the other hand, the remaining 46 % prefer the traditional methods without changing their familiar learning environment.

As shown in Figure 4, the survey indicates that 64 % of students strongly agree that ChatGPT is an excellent companion for developing their language skills. The ability to filter and evaluate results of ChatGPT, is widely acknowledged for providing the best survey experience for users. On the contrary, the other 36 % of students disagree and express concerns that ChatGPT may pose significant risks to their learning experiences. The results indicated that the majority of students were aware of ChatGPT and its features, identified various potential uses for ChatGPT in language learning, and expressed a willingness to incorporate it into their studies. Key features such as instant feedback and detailed explanations were highlighted as particularly beneficial. Overall, students believed that ChatGPT could significantly enhance their language skills,

especially in writing and grammar. These findings provide valuable insights into the acceptance and perceived effectiveness of ChatGPT among university students, highlighting a positive outlook towards the integration of AI tools in language learning.

4.2 Analysis of the dependent variables of students when using ChatGPT

Primary data was collected from 244 participants by Google form, and regression coefficients were estimated using the method of maximum likelihood estimation. In this analysis, A0 represents students applying the ChatGPT model; A1 is the cost of purchasing an account; A2 is the student's learning environment; A3 is the processing speed of ChatGPT; A4 is whether students work on group assignments with friends; A5 is the level of grammar accuracy.

Table 2 presents the results of the Logit regression model, where higher regression coefficients indicate a larger marginal effect of that factor. The R^2 coefficient of the model is 96.5 %, and Prob (F-stat) = 0.000, which is significantly lower than the α level of 5 %. Therefore, the regression model is meaningful, implying that the independent variables significantly influence the dependent variable A0.

Table 2 Estimated results of the Logit regression model

Variable Name	Coefficient	Variable Effect
LnA1	0.015***	2.493
LnA2	0.078**	0.148
LnA3	1.17**	0.251
LnA4	0.046***	0.357

LnA5	1.208***	0.093
Cons	0.603**	0.417
N	244	
Adj-R^2	0.965	

Note: Numbers in parentheses are P-value; represent significance levels of (10, 5, and 1), respectively; ns indicates no statistical significance.

In summary, as aforementioned, using the ChatGPT application does not require additional personal devices, and it depends on a solid psychological foundation between educators and students. Through surveys and data analysis, it is evident that students encounter several difficulties while using ChatGPT in the learning process, such as increased personal equipment costs, adjustments to the learning environment, and the ability to collaborate on group assignments. These challenges significantly impact the students' psychology, as compared to other factors. Despite these persistent challenges, students need to proactively seek solutions to overcome these difficulties, ultimately working towards achieving their own aspirations.

4.3 Discussion

The demand for utilizing OpenAI to bolster language learning is urgent, driven by the rapid advancement of AI technology. OpenAI, exemplified by tools like ChatGPT, holds promise in rendering language acquisition more accessible and efficacious than ever before. The formidable strengths of AI encompass its capacity for continuous learning, swift processing speeds, and innate conversational capabilities [11].

In tandem with harnessing ChatGPT's capabilities, users must possess certain proficiencies to effectively leverage this tool. These proficiencies include adept typing skills, robust reading comprehension abilities, and adeptness in language usage. Furthermore, users must cultivate patience and determination throughout the learning journey. Nevertheless, it is crucial to acknowledge the potential side effects of ChatGPT, as it operates on computer programming, making it is susceptible to errors such as syntax errors and inaccuracies in pronunciation. Therefore, users must exercise caution by cross-referencing results to ensure the accuracy of information. Moreover, understanding the tool's limitations is paramount for its judicious application in language learning endeavors.

On the other hand, ChatGPT currently faces issues like "hallucination," where it generates incorrect or contextually inappropriate vocabulary and ideas. It cannot fully control the relevance of generated text to specialized contexts. In contrast, writing tools like Grammarly ensure contextual appropriateness, grammar accuracy, vocabulary relevance, and tone and sentiment consistency before delivering responses to users.

Moreover, while ChatGPT can support language learning, it cannot entirely replace human interaction, such as the direct engagement and feedback from teachers. Students may miss out on the valuable direct learning experience that instructors provide. The widespread use of the application in the learning process at universities, with proper guidance and support from instructors, allows students to use it for self-study and practice writing methods. It also enhances testing procedures in competency assessments to prevent students from overly relying on the application, which could lead to cheating in exams.

5 Conclusion and recommendations

The widespread adoption of the ChatGPT application has made a significant contribution to supporting language learning because of its ability to generate text and provide automatic feedback based on user's requests and questions. This allows users to interact with a "machine" through input and feedback, helping to enhance the language skills of users. Using ChatGPT for English language learning in university settings makes the learning process more flexible, and enables students to study anywhere and anytime, with advantages such as providing quick and topic-relevant answers.

In summary, This study assessed the use of ChatGPT as a tool for English language learning in university settings, focusing on its effectiveness in supporting language acquisition. The results indicate that ChatGPT aids in improving students' writing skills by generating text and providing immediate feedback, though its accuracy and contextual understanding are limited. The findings underscore the practical benefits of incorporating AI tools like ChatGPT in education, highlighting their potential to enhance learning while also pointing out areas for improvement. Additionally, the adoption of ChatGPT contributes to the advancement of artificial intelligence research.

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Phân tích ứng dụng ChatGPT trong việc học ngoại ngữ của sinh viên - Nghiên cứu trường hợp sinh viên năm thứ 2 Trường Đại học Nguyễn Tất Thành

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Tóm tắt   Nghiên cứu này được thực hiện tập trung vào ứng dụng của ChatGPT - mô hình xử lý ngôn ngữ theo cách tự nhiên, trong việc học tiếng Anh ở chương trình Đại học trong việc dạy và học ngoại ngữ tại trường Đại học. Nghiên cứu đã tiến hành khảo sát (244) sinh viên năm thứ 2 tại trường Đại học Nguyễn Tất Thành để tìm hiểu về ý kiến của họ về việc sử dụng ChatGPT trong học tập. Kết quả cho thấy hầu hết các sinh viên đều có ý kiến tích cực về việc sử dụng ChatGPT trong việc học tiếng Anh, và tin rằng ứng dụng ChatGPT có thể cải thiện kỹ năng tiếng Anh của bản thân, và cho rằng nó có thể giúp cải thiện kỹ năng ngoại ngữ của họ. Nghiên cứu cũng đề xuất một số cách để cải thiện hiệu quả khi sử dụng ChatGPT trong giảng dạy và học tập. Tóm lại, nghiên cứu này nhấn mạnh tiềm năng của ChatGPT trong việc hỗ trợ giáo dục tiếng Anh ở đại học.

Từ khóa   ChatGPT, ứng dụng học ngoại ngữ, sinh viên năm thứ 2, Trường Đại học Nguyễn Tất Thành