

An Empirical Study on the Utilization of the Large Language Model, in English Education

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Abstract: *The study investigated the impact of a Large Language Model, on English learning among 20 undergraduate students enrolled in an English course in 2023. Data were collected through a survey that asked students about their opinions on using ChatGPT. The survey included 20 structured questions and also asked for open-ended responses to explore the advantages and disadvantages of using the large language model for English learning. In addition, the survey examined students' perceptions of the importance, necessity, difficulty, and interest of various English skills, asking them to rank them. Paired samples t-tests were used to analyze significant changes before and after the intervention. The results indicated significant improvements in learning effectiveness, a decrease in anxiety and stress, increased motivation and confidence, and enhanced participation. The students reported that using ChatGPT led to improvements in their vocabulary, grammar, reading, and writing skills. They also noted a slight improvement in their communication skills. Interestingly, the students perceived a decline in their listening skills after the intervention. However, they expressed a greater willingness to continue using ChatGPT for future learning, appreciating its accessibility, flexibility, and the enriching learning experience it provided. Lastly, the study identified challenges, including a lack of support for in-depth grammar, conversational practice, and exam preparation, as well as a potential overreliance on the tool. Therefore, the use of ChatGPT requires appropriate application based on the learning objectives.*

Keywords: Large Language Model; ChatGPT; English Education; English Skills

1. Introduction

Recent developments in Artificial Intelligence (AI) technology are showing a new paradigm in our society. AI has led professionals in education settings to an era of pedagogical innovation [1]. ChatGPT, in particular, is drawing attention, being utilized across various fields. This Large Language Model (LLM) is having a profound impact, particularly on English teaching and learning. It has been considered to be helpful in various aspects including linguistic, emotional, pedagogical, and environmental aspects [2].

In November 2022, ChatGPT emerged into the public consciousness. As a form of generative AI, it aims to produce nearly an infinite amount of new content. This large language model utilizes a massive corpus of textual data and generates unique human-like outputs to questions. ChatGPT responds to prompts that a user input. In a variety of ways, it customizes its responses to accommodate different language proficiency levels and users' familiarity with content. It also emulates the voice or style of historical figures, specific rhetorical approaches, or particular formats [1]. It can interact with its users in a natural conversational way. According to Tlili et al. Reference [3] stated, "[w]hile ChatGPT's primary function was to mimic human conversation, its capabilities extend far beyond that; it can literally create new things, such as a poem, story or novel, or act like anything within its capability" (p. 2).

Educators have expressed both excitement and concerns regarding the pedagogical use of ChatGPT [1]. According to Cha [4], concerns have been raised about its effectiveness. She pointed out that there is difficulty

in properly discussing the pros and cons of ChatGPT if it is not adequately educated and utilized. Students have also expressed negative views toward the necessity of English learning with ChatGPT.

Although increase interest has been paid in the use of ChatGPT in educational settings, studies on the educational applicability of ChatGPT are still in their early stages [2]. Particularly, experimental studies on utilizing ChatGPT in English language education are still limited. Moreover, specific implementation methods have not been thoroughly explored yet [4]. From this point of view, it is necessary to examine effective methods for incorporating ChatGPT into English education. In order to enable students to engage with it more efficiently and proactively, empirical studies are needed on the educational applicability of ChatGPT. Thus, this study explores its impact on English education by studying the students' thoughts and attitudes towards the utilization of ChatGPT in language learning. The research questions are as follows:

1. How are students' perceptions of ChatGPT changed following its application in their educational experiences?
2. What are the students' views on the benefits and drawbacks of employing ChatGPT in their English learning?

2. Literature Review

In recent years, there have been remarkable advancements in AI technology. In particular, the emergence of AI-based English learning chatbots has drawn significant attention. Reference [2] suggested some educational benefits of utilizing AI chatbots for English learning. First, they enhance language learning by increasing the four key language skills: reading, writing, speaking, and listening. Second, they provide students with personalized learning experiences based on their proficiency levels, interests, and preferences, which motivates them to study more, enabling effective learning. Third, AI chatbots offer emotional support, promoting positive emotions and confidence in language learning. Lastly, they foster communication among learners, facilitating the sharing of diverse knowledge and experiences.

There have been studies highlighting the positive role of AI-based chatbots in English language learning. The studies have found that chatbots enhance vocabulary and grammar knowledge [5], promote communication skills, and boost confidence and motivation [6]. They have been considered to be helpful in various aspects in language learning. According to [2], these early-stage chatbots were limited to assisting students in practicing target language speaking by mimicking native speakers. This posed limitations, making it challenging to be widely used in actual classroom settings.

According to [7], in order to effectively utilize AI-based chatbots in English classrooms, they must reflect the progress of the regular school curriculum with systematic content aligned with the English curriculum. Continuous management and evaluation systems for academic achievements should also be included. Moreover, they need to meet diverse requirements, interests, and motivations of students. From this perspective, ChatGPT has shown the potential to go beyond the role of an assistant chatbot in supporting students' English learning.

ChatGPT is a large language model using natural language processing (NLP) technology. It enables interactive communications by generating responses to user prompts [8]. Furthermore, similar to how humans acquire language without studying all types of grammar or syntax, it can grasp the structure and context of entire sentences through pre-training and a few dialogue samples. According to [9], this enables its self-learning and deep learning. In addition, with the ability to understand context, intent, and background even in long sentences or questions, ChatGPT possesses language proficiency comparable to human beings. Sometimes it excels not only in translation but also in sentence transformation, paraphrasing, question answering, and more [10].

There has been increased interest in the potential and effectiveness of ChatGPT in educational settings. Particularly, ChatGPT offers numerous advantages for language learners [2]. Most of all, students can be provided with a dynamic and interactive environment practicing their target language [11]. With ChatGPT, the students can simulate real-world conversations while receiving immediate feedback. They can also get help from ChatGPT in recognizing and correcting errors in real time. Furthermore, customized learning is available because it meets the students' unique needs while adjusting to their proficiency level [12].

Research in relation to ChatGPT in English learning settings has mainly focused on analyzing users' reactions, especially teachers' and students' perceptions of and attitudes towards applying ChatGPT to English teaching and learning [8], [13]. Other studies have explored the usefulness of ChatGPT in creating teaching materials for secondary school English speaking and reading [14, 15]. There have been experimental studies investigating its potential application in writing classes [16, 17] and translation classes [18].

The field of language learning, as highlighted by [2], faces a pressing demand for innovative approaches. It is crucial to examine effective methods for incorporating ChatGPT into English education, enabling students to engage with it more efficiently and proactively. However, studies on the educational applicability of ChatGPT are in their early stages [4]. Particularly, in English learning settings, experimental studies on its utilization are still limited. Therefore, the current study explores the impact of ChatGPT on English education to enable students to engage with it more efficiently and proactively. More specifically, this study seeks to investigate into students' thoughts and attitudes concerning English learning through ChatGPT.

3. Materials and Methods

3.1 Participants

Participants in the current study were 20 undergraduate students enrolled in an English course in the fall semester of 2023. All participants were taking Multimedia English classes twice a week at a university in Korea. Regarding the gender distribution, there were more male students than female students. Among the 20 students, 14 were male students while 6 were female. The age ranges of the participants in the current study were 20 to 26 years. There were 4 freshman students who were new to the college. 10 were sophomore, 3 were junior, and 3 were senior students.

The students were from different colleges at the university such as College of Global Cooperation ($n = 3$), College of Humanities ($n = 7$), College of Human Service ($n = 2$), College of Information Technology ($n = 7$), and College of Social Science ($n = 1$). The College of Global Cooperation consists of majors in global business and Japanese studies. The College of Humanities includes majors in English language and literature, German language and literature, Korean language and literature, digital/visual cultural contents, religious culture, and philosophy. The College of Human Service covers social welfare. The College of Information Technology comprised computer engineering, information and telecommunications, artificial intelligence and software fields.

Table 1. Demographic Information

Gender	Male 14 Female 6
Major	College of Global Cooperation 3 College of Humanities 7 College of Human Service 2 College of Information Technology 7 College of Social Science 1
Overseas Experience	Yes 3 No 17

Regarding their experience living abroad, three students reported that they lived in foreign countries for more than two years. One student lived in Belgium for two years, another stayed in England for two and a half years, and the other spent four and a half years in Canada studying English. However, most students had no prior experience living overseas.

3.2 Survey Questionnaire

The primary data for the current study were collected from a survey questionnaire. It was designed to examine students' experiences and perceptions of the use of ChatGPT in the EFL classroom. The questionnaire was personally delivered and collected in the classroom. The participants in the study were advised on the survey including its topic, purpose, and details. They were also informed that their participation was voluntary and their responses would remain anonymous.

Based on the previous research [19, 20], the survey questionnaire consisted of three sections. The first section was related to participants' demographics such as gender, major, year in school. The study also gathered their background information including the purpose of studying English and experience in living abroad. The second section comprised 22 questionnaire items investigating students' perceptions of using ChatGPT for English learning. The students were tasked with responding to 20 multiple choice questions using a 4-point Likert-type

scale rating from 1 to 4: strongly disagree, disagree, agree, and strongly agree. The questions were about students' belief, anxiety, stress, interest, motivation, and confidence regarding English learning with the use of ChatGPT. They also addressed self-directed learning, strategic learning, and goal-oriented learning using ChatGPT. Class participation, communication, and willingness to use were investigated as well. There were then two open-ended questions regarding advantages and disadvantages of using ChatGPT in EFL class (See Appendix).

In the third section, students were instructed to rank their English language skills — including grammar, vocabulary, reading, listening, speaking, and writing — based on their perceived importance, necessity, difficulty, and interest level. The skill that they found the most important was the one that had great meaning or influence on their life. The skill that they found the most necessary indicated the one that they would need to work on the most. The skill that they found the hardest referred to the one that they felt the least confident. They identified their strong and weak spots by ranking the skills from easiest to most challenging. Lastly, the skill that they found the interesting meant the one that they liked to study the most.

3.3 Research Procedure

Data were collected from 20 undergraduate students enrolled in an English course at a university in Korea. The course was titled, Multimedia English, and was offered as an elective. The classes were held during the fall semester of 2023. The students in the current study attended two 75-minute classes per week throughout the semester. The course objectives were to enhance English communication skills by studying essential vocabulary, phrases, and expressions for daily use. This course primarily focused on improving four language skills—listening, reading, writing, and speaking—by using various multimedia materials. It was also emphasized to understand different cultures expressed in authentic materials.

Before proceeding to the main experiment, all participants were required to fill out a pre-questionnaire. The pre-questionnaire was administered to gather background information about the participants' English learning experience. It was developed to collect their demographic information and perceptions of the use of ChatGPT for English learning. The students were tasked with responding to multiple choice questions on a 4-point Likert-type scale from 1 to 4. The questionnaire was delivered to the students in person in class. All the students completed and handed in their questionnaires to the teacher/one of the researchers in the current study.

The whole experiment using ChatGPT was conducted throughout the second half of the semester. Since it was an English course using various multimedia materials, the students learned how to improve their English skills with the use of different multimedia resources such as text and graphics, audio, and video. Throughout the first half of the semester, they studied world famous speeches, pop songs, and movies with/without captions. For the current experimental study, ChatGPT was introduced to the students after the mid-term exam. Throughout the second half of the semester, all students were required to make their own short videos. The participants were asked to create their own videos – short videos within 60 seconds – by using authentic materials focusing on everyday English. There were three tasks for this project: Preparation, Production, and Presentation. Throughout the project, the students used ChatGPT as a way to complete their tasks.

The students visited the website (chat.openai.com) or downloaded the ChatGPT mobile app and created their account. Then, the students were asked to have a voice conversation to interact with it. They had conversation with ChatGPT in classes. Throughout the second half of the semester, all students were required to make their own short videos. They were required to make short videos introducing a product that they wanted to promote. In order to choose a product to promote, the students visited one of the online grocery stores in the United States (<https://www.ralphs.com/>). *Ralphs* is an American supermarket chain in California, offering grocery shopping services both online and in-store. The students were asked to choose currently available products for sale to complete their video-making project. They needed to learn the item descriptions as well as the product information. If they had trouble, they used ChatGPT to understand the meaning. In order to shoot their video, they also made use of ChatGPT. The students used it to write their scripts and then utilized it as a grammar checker. When recording videos, they used ChatGPT for correcting their pronunciation.

After the main experiment, all participants were required to fill out a post-questionnaire. The survey questionnaire was about students' experiences and perceptions of using ChatGPT for English learning. It was handed out to the students in person in class. All the participants completed and handed in their questionnaires to the teacher/one of the researchers in the current study.

3.4 Data Analysis

For the current study, survey questions were developed to detect students' overall experience using ChatGPT for English learning. Descriptive statistics were administered to analyze students' responses to the multiple-choice questions using a 4-point Likert scale. Employing SPSS 24.0, paired samples *t*-tests were conducted to examine changes in students' perceptions. Thematic analysis was also performed to analyze students' responses to the open-ended questions. They were transcribed and converted to electronic formats. Irrelevant responses to the questions were excluded. All the responses were coded, analyzed, and cross-checked by the researchers in the current study. All researchers read and examined the responses together. They collaboratively assigned codes, identified patterns in the codes, offered interpretations, and compared their results.

4. Results and Discussions

4.1 Student Perceptions towards ChatGPT

The first research question focused on using a questionnaire to collect data on students' attitudes towards and perceptions of implementing ChatGPT for English learning. Paired samples *t*-tests were utilized to evaluate changes in participants' reactions before and after the experiment.

Table 2. Changes in Attitudes towards English Learning

Items	Stage	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>
Helpful for English classes	Pre	3.50	.51	-.81	.43
	Post	3.60	.50		
Effective for learning English	Pre	3.40	.50	-2.18	.04*
	Post	3.60	.50		
Relieve anxiety about English	Pre	3.05	.69	-2.27	.04*
	Post	3.50	.61		
Reduce stress about English	Pre	2.90	.85	-3.90	.00**
	Post	3.55	.60		
Motivation for English	Pre	3.35	.88	-2.33	.03*
	Post	3.70	.66		
Increased confidence in English	Pre	3.10	.79	-3.68	.00**
	Post	3.60	.68		
Increasing interest in English	Pre	3.15	.93	-3.94	.00**
	Post	3.75	.44		
To learn English on your own	Pre	3.05	.83	-3.24	.00**
	Post	3.60	.50		
Acquiring English learning strategies	Pre	2.85	.93	-2.77	.01*
	Post	3.40	.60		
Achieving English learning goals	Pre	3.00	.92	-2.27	.04*
	Post	3.45	.76		
Increased participation in English classes	Pre	3.25	.79	-1.00	.33
	Post	3.40	.68		

p* < .05, *p* < .01

The survey before and after the experiment was conducted. Table 2 shows the results of a pre- and post-mean analysis on survey items related to attitudes toward English learning after experiencing ChatGPT. A paired

samples *t*-test was used to compare the means of pre- and post-stages to determine if there was a statistically significant difference between these means.

Findings on classroom assistance showed a modest enhancement in how helpful participants found the English classes, with mean scores edging from 3.50 to 3.60 post-intervention. Despite this improvement, the statistical analysis did not consider this increase significant. However, the effectiveness of ChatGPT for learning English was evident, with mean scores rising from 3.40 to 3.60 ($p = .04$) indicating a significant positive effect.

The findings demonstrated a notable decrease in learners' anxiety related to English, with average scores climbing from 3.05 in the initial stage to 3.50 following the intervention ($p = .04$). In parallel, there was a considerable drop in stress levels regarding English learning, with the mean score rising from 2.90 before the intervention to 3.55 after it ($p < .01$). These changes between the pre- and post- stages were statistically significant, indicating its' effective role in alleviating psychological barriers in English language learning.

ChatGPT positively influenced learners' motivation for English, with the average score rising from 3.35 before the intervention to 3.70 afterwards ($t = -2.33$, $p = .03$). Furthermore, there was a marked improvement in students' confidence in their English language use, with average scores increasing from 3.10 to 3.60 ($t = -3.68$, $p < .01$). The data clearly indicate a significant and positive effect on the students' motivation and confidence.

Furthermore, the study highlighted significant gains in learners' interest in English, suggesting that the intervention was successful in engaging participants. The ability to learn English independently also received a boost, as indicated by the mean score increase from 3.05 to 3.60. These findings underscore the intervention's role in not only sparking interest but also in equipping learners with the strategies to pursue their language studies autonomously.

As for English learning strategies, the result showed significant improvement, an encouraging sign for educators aiming to instill effective learning methods in their curriculum. Similarly, the intervention seemed to aid learners in achieving their English learning goals, with a noteworthy advancement reflected in the significant *p*-value of the study. Notably, though, the data did not show a statistically significant shift in class participation. This suggests that while the intervention had a broad positive impact, it did not significantly affect learners' attendance or participation rates in classroom settings.

It can be concluded that from reducing anxiety and stress related to English learning to boosting motivation, confidence, and interest, ChatGPT appears to have provided learners with both the psychological and strategic tools necessary for improving students' English proficiency. While participation in classes remained unchanged, the overall positive outcomes position this AI tool as a valuable asset in the field of English language education.

Table 3. Changes in Perceptions of Language Skills

Item	Stage	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>
Improving English	Pre	3.35	.75	-.83	.42
Communication skills	Post	3.50	.83		
Improving English	Pre	3.45	.51	-2.35	.03*
Vocabulary	Post	3.75	.44		
Improving English	Pre	2.60	.82	-3.94	.00**
Grammar	Post	3.20	.95		
Improving English	Pre	3.60	.75	3.47	.00**
Listening	Post	2.85	.88		
Improving English	Pre	3.05	.94	-3.58	.00**
Reading	Post	3.70	.47		
Improving English	Pre	3.10	1.02	-1.31	.20
Speaking	Post	3.35	.75		
Improving English	Pre	2.80	.83	-4.49	.00**
Writing	Post	3.40	.75		

* $p < .05$, ** $p < .01$

Table 3 represents the results of a pre- and post-mean analysis on survey items related to perceptions of English proficiency after experiencing ChatGPT. A paired sample *t*-test was administered to determine if there were statistically significant changes between these means. English language proficiency encompasses a range of skills, including communication, vocabulary, grammar, listening, reading, speaking, and writing. The enhancement of these skills is essential for learners to effectively engage in academic environments where English is the medium of communication.

There was a slight improvement in students' perceptions of English communication skills, evidenced by an increase in the mean score from 3.35 to 3.50. Nonetheless, this change was not deemed statistically significant, with a *p*-value of .42. In contrast, the tool proved effective for enhancing English vocabulary, as reflected in the increase of the mean scores from 3.45 to 3.75, a statistically significant improvement (*p* = .03). Furthermore, a substantial improvement was observed in English grammar, with mean scores rising from 2.60 to 3.20, which was among the most significant improvements observed in the study (*p* < .01).

As for the four language skills, there was an interesting fact revealed from the survey. Contrary to other skills, listening showed a surprising decline after experiencing ChatGPT, with mean scores decreasing from 3.60 to 2.85. This was a significant decrease (*p* < .01), suggesting that this AI tool may have negatively impacted students' perceptions of their listening skills. English reading skill showed significant improvement, with mean scores rising from 3.05 to 3.70 (*p* < .01), one of the largest gains observed in the study. The improvement in speaking skill was moderate, with means increasing from 3.10 to 3.35. This change was not statistically significant (*p* = .20) while there were some improvements. There was a significant enhancement in writing skill, with the mean score improving from 2.80 to 3.40 (*p* < .01).

This tool demonstrates diverse effects on various English language skills. The students perceived that they could enhance their English proficiency with the use of ChatGPT. To be more specific, the notable enhancements in vocabulary, grammar, reading, and writing indicate that ChatGPT could significantly aid language learning in these areas. These findings are in line with the previous study [16], revealing the students' positive reactions with the satisfaction with the use of ChatGPT when revising their paragraphs. Similar to the findings of this study, the students found its feedback helpful and trustworthy. They believed that they could benefit from its instant responses, unlimited access regardless of time and space, and its accurate error correction regarding vocabulary, grammar, and paragraph flow.

However, the absence of significant improvements in communication and speaking skills suggests the need for a more targeted approach in these domains. The observed decline in listening skills is particularly noteworthy and merits further exploration. It seems that students recognized their listening proficiency was inadequate during activities involving questioning and receiving answers from ChatGPT. The complexity and depth of ChatGPT's responses might have made their comprehension difficult, leading students to perceive their listening capabilities as insufficient. This is also supported by the subjective feedback from the students, as referenced in Table 5 and 6. It may be hypothesized that the listening skill area could benefit from distinct approaches when using ChatGPT, such as employing suitable prompts.

Table 4. Changes in Future Use

Item	Stage	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>
Agree to use it for future English learning	Pre	3.40	.75	-2.35	.03*
	Post	3.70	.57		
Expect to use it for future English learning	Pre	3.40	.82	-2.67	.02*
	Post	3.75	.44		

**p* < .05

Table 4 presents data on participants' attitudes towards the future use of ChatGPT for English learning. The items are "Agree to use it for future English learning" and "Expect to use it for future English learning". Prior to the experiment, participants expressed a moderately positive inclination towards using a specific tool for future English learning endeavors, evidenced by an average score of 3.40 (*SD* = .75). After the experiment, this positive sentiment was notably enhanced, demonstrated by a raised average score of 3.70 (*SD* = .57). The statistical analysis validated this notable improvement (*t* = -2.35, *p* = .03), highlighting the experiment's effective role in increasing participants' readiness to adopt the tool for their upcoming English learning activities.

Similarly, participants' initial expectations for using the tool in English learning were represented by an average score of 3.40 (SD = .82). Following the intervention, there was a significant rise in expectations, with the average score increasing to 3.75 (SD = .44). This shift signifies a more unified agreement among participants regarding the tool's effectiveness in aiding future English learning efforts. The statistical analysis underscored the significance of this shift ($t = -2.67, p = .02$), indicating that this tool likely led to an enhancement in participants' expectations for using the tool to improve their English language skills.

This result suggests the effectiveness of ChatGPT in enhancing positive perceptions towards the tool's future use in English learning. This positive shift could be attributed to various factors, including improved English language skills, increased confidence, or a better appreciation of how the tool supports learning.

4.2 Advantages and Disadvantages of Using ChatGPT

Throughout the semester, students were instructed to utilize ChatGPT and report on the advantages they encountered when using it in their English classes. Their feedback was categorized by issues and is presented in Table 5.

Table 5. Advantages of Using ChatGPT

Issues		Comments
Accessibility of using Chatgpt (6)		Access to English is easy and convenient.
		Due to familiarity with technology, there is no resistance to adopting it.
		ChatGPT is user-friendly and accessible anytime, anywhere.
		ChatGPT promotes easy participation due to its accessibility, and it seems to enhance vocabulary.
Fun and interesting (6)		Using ChatGPT for English classes is fun.
		It makes learning English enjoyable.
		It's more interesting than classes that only use textbooks, and it's less boring.
Various useful expressions (3)		I can learn various expressions through ChatGPT.
		It enables me to learn authentic English and master expressions commonly used in real-life situations.
		It's useful for learning expressions used in real-life situations and various contexts, especially beneficial when traveling to other countries.
Reduced pressure (2)		It allows me to feel comfortable with English and not feel overwhelmed by studying it.
		Since it's not a person, there's no pressure, making it easy to practice.
Other opinions (3)	Easy to organize content (1)	It's easy to take notes, transcribe, and organize necessary words or expressions.
	Enhancing problem-solving skills (1)	It is very helpful because it provides frequently used words, idioms, and sentences in real life. By asking questions, this app can develop problem-solving skills.
	Improved flexibility (1)	It can enhance flexibility in English.

As for the benefits of using ChatGPT in English learning, six students mentioned accessibility. The students commented the platform for providing easy and convenient access to English education, highlighting its user-friendly nature and any time availability. The familiarity with technology among students further diminishes any resistance to adopting this innovative learning method, with its wide accessibility seen as an easy participation and potential vocabulary enhancement.

Students highlighted that the tool transforms English learning into an enjoyable and fun activity, offering a refreshing departure from conventional textbook-based teaching. They observed that ChatGPT brings a lively and more stimulating method to learning the language, incorporating pleasure into language learning and thus significantly enhancing the overall learning experience.

The diversity of expressions available through ChatGPT is another aspect highly valued by learners. The platform offers exposure to a variety of expressions, from those used in everyday English to phrases applicable in real-life scenarios. This range is particularly advantageous for learners aiming to master practical language skills or those intending to use English while traveling.

Furthermore, another beneficial aspect is its role in alleviating the pressure commonly experienced in traditional learning settings. The absence of human interaction on the platform alleviated the stress and apprehension frequently associated with language practice, fostering a more relaxed learning environment.

Beyond these core advantages, students also acknowledged additional benefits such as the ease of organizing learning content, the enhancement of problem-solving abilities, and increased flexibility in language use. These attributes underscore the multifaceted utility of ChatGPT in language education, showcasing its effectiveness not only in content delivery but also in promoting critical thinking, organizational skills, and adaptability in English proficiency.

In summary, ChatGPT emerges as a valuable and indispensable tool in the realm of English learning, providing a wide array of features that enable a more accessible, engaging, and enjoyable learning experience. It offers a diverse range of expressions to explore and a stress-free approach to acquiring language skills. The findings of the study support previous studies suggesting that ChatGPT offers numerous advantages for language learners. Reference [2] claimed that utilizing ChatGPT is helpful in various aspects including linguistic, emotional, pedagogical, and environmental aspects. With a dynamic and interactive environment practicing their target language the students can simulate real-world conversations with ChatGPT [11]. While receiving immediate feedback the students can get help from ChatGPT in recognizing and correcting errors in real time. In addition, as [12] pointed out, the students satisfied their unique needs adjusting to their proficiency level. This customized learning experience might have offered positive experience in English learning with ChatGPT.

Table 6. Disadvantages of Using ChatGPT

Issues		Comments
Learning limitations (6)	Limitations in grammar learning (4)	It can be helpful for conversational practice or English reading, but it's not beneficial for precise grammar study. Since it doesn't allow for intensive learning of grammar, I can't expand my grammatical knowledge. It's less efficient when I want to study English for exams, especially focusing on grammar.
	No opportunity for conversation (1)	There's also no opportunity for interaction or conversation with peers.
	Not helpful for exam preparation (1)	Learning English in an immersive, innovative approach to learning English is beneficial, yet it's not as effective for the specific requirements of English exams, such as for the College Scholastic Ability Test (CSAT) or TOEIC.
Difficulty in focusing (4)		It's easy to get distracted and engage in other activities outside of lessons.

	I feel like I'm unable to engage in deep learning on my own, struggle to study seriously, and tend to get distracted. While using ChatGPT, I find myself neglecting grammar study and vocabulary memorization. Additionally, I feel like my learning flow is frequently interrupted.
Difficulty in applying to real-life situations (3)	I find it difficult to apply ChatGPT's responses to various sentences or contexts directly. I'm unsure if the expressions given from ChatGPT can be effectively used in actual conversations. It seems there are limitations to improving speaking skills. Regarding reading, there appears to be a significant difference between the expressions and words used in the textbooks and those provided by ChatGPT.
Lack of effort (1)	I find myself not making the effort to speak or write directly, instead just asking ChatGPT. Since it manages to understand and respond even to vague queries, I feel like my ability to think independently is gradually diminishing.
No response (6)	

Table 6 outlines several disadvantages associated with using ChatGPT for English learning, categorized by specific issues and supplemented with comments from students. Students have highlighted several learning limitations associated with using ChatGPT, particularly in the context of grammar learning, conversational opportunities, and exam preparation. While the students mentioned its utility in conversational practice and reading, they could not study grammar in depth. This shortfall made it less suitable for learners seeking to significantly improve their grammatical knowledge or for those focused on preparing for grammar-intensive examinations.

Additionally, this tool did not facilitate interactive or conversational practice with peers, leading to a missed opportunity for enhancing communicative skills through direct interaction that could otherwise be achieved in face-to-face or group discussion. Furthermore, despite recognizing ChatGPT's unique and engaging approach to English learning, the students express concerns about its adequacy in meeting the specific needs of exam preparation, suggesting that a more focused and conventional study approach might be necessary for such purposes.

The students also showed concerns over the difficulty of maintaining focus while engaging with ChatGPT, highlighting distractions and a tendency for diverting attention to activities unrelated to study. This challenge in sustaining concentration on deep learning was viewed as a significant limitation, leading to interruptions in the learning process and a neglect of grammar and vocabulary studies. Furthermore, questions about the utility of the expressions in real conversations and their role in enhancing writing and speaking skills were raised. A noticeable gap between the language encountered in authentic texts and the output provided by ChatGPT has been observed, casting doubt on the tool's effectiveness in preparing learners for real-world language use.

Finally, one remarked on a reduced effort to actively engage in speaking or writing, opting to rely on ChatGPT's ability to interpret and answer even the most ambiguous queries. This dependency was feared to undermine the individual's capacity for independent thought and problem-solving over time. The absence of student responses to the question suggests that they did not identify any drawbacks to using ChatGPT.

The feedback suggests that while ChatGPT offers valuable opportunities for English language acquisition, there are notable limitations, particularly in areas requiring deep learning, focused study, and practical application. The comments reflect a need for more structured grammar learning, interactive conversational practice, and targeted exam preparation, which ChatGPT alone may not fully address. Additionally, the ease of use and accessibility might inadvertently lead to reduced learner effort and engagement in active language

production tasks. These insights highlight the importance of complementing ChatGPT with other learning strategies and resources to address its shortcomings and fully leverage its benefits in English learning.

In accordance with the current study, students in the previous study have expressed negative views toward the necessity of English learning with ChatGPT [4]. Reference [16] also pointed out that students found ChatGPT's descriptions insufficient, feedback incomprehensible, and responses misaligned. This means that although the potential of ChatGPT is remarkable, a balanced approach between AI-driven and human-driven feedback should be provided together. It should also be adequately educated and utilized to foster innovative changes in modern English education.

5. Conclusions

The current study tried to investigate students' perceptions of and attitudes towards ChatGPT in language learning, focusing on its potential benefits and limitations as observed through their educational encounters. To address the research questions, insights were garnered from surveys conducted before and after an experiment involving ChatGPT, highlighting its influence on attitudes toward English learning.

Regarding the first question, the study found that the effectiveness of ChatGPT in English learning was significant, with mean scores increasing notably in areas such as learning effectiveness, reduction in anxiety and stress, and enhancement in motivation and confidence among learners. Specifically, anxiety and stress related to English learning saw a significant decrease, while motivation, confidence, and interest in English notably increased post-intervention. Furthermore, learners demonstrated significant improvements in their ability to study English independently and in adopting effective English learning strategies, although classroom participation rates did not change significantly. These findings suggest that ChatGPT significantly reduces psychological barriers and enhances strategic learning approaches in English education, despite no observed change in class participation. Overall, the positive outcomes from this study underscore ChatGPT's value as a potent tool for enhancing English language proficiency, offering learners psychological support and effective learning strategies.

About the changes in language skills, the use of ChatGPT for English learning revealed mixed effects on these skills. While there was a slight, statistically insignificant improvement in communication skills, vocabulary and grammar saw significant enhancements, indicating ChatGPT's effectiveness in these areas. Surprisingly, listening skill decreased after using ChatGPT, a finding that contrasts with the significant gains in reading and writing abilities, and a moderate, non-significant improvement in speaking skill. The decline in listening skill suggests that ChatGPT might not support this aspect as effectively as it does others, possibly due to the AI's complex responses challenging students' comprehension abilities. This observation, coupled with student feedback, implies that a different approach, perhaps through tailored prompts, might be necessary to leverage ChatGPT more effectively for improving listening skill. Overall, while ChatGPT shows promise in enhancing certain English language skills, its varied impact highlights the need to address its limitations and fully capitalize on its potential in language education.

In relation to the future use of ChatGPT for English learning, students showed a shift from moderate to more positive responses. This change reflected an increased willingness and readiness to use ChatGPT for future English studies. The results underscored ChatGPT's effectiveness in enhancing participants' optimism about its application in language learning, likely influenced by improved language skills, increased confidence, and a greater appreciation of the tool's learning support capabilities.

As for the second research question, students provided feedback on the benefits and drawbacks of using ChatGPT in English classes. Regarding the advantages of using ChatGPT, it has significantly impacted English learning by offering unparalleled accessibility, enriching the learning experience with enjoyment, and exposing learners to a wide range of expressions. Students preferred its ease of use and the flexibility to learn anytime, which encourages participation and could potentially enhance vocabulary and expressions. This engaging and enjoyable approach to language learning has become a useful tool for both educators and learners, marking a new trend from traditional methods. The diversity of expressions and practical language skills gained through ChatGPT is particularly beneficial for those seeking to apply English in real-world situations. Moreover, this AI generated tool alleviates the pressure and stress commonly associated with conventional learning settings, thanks to its user-friendly interface and the absence of direct human interaction, which fosters a more relaxed learning environment. Beyond these core benefits, ChatGPT also aids in organizing learning content, enhancing problem-solving skills, and increasing language use flexibility. In short, ChatGPT emerges as an invaluable asset in the realm of English learning, providing a multifaceted platform that not only makes learning more

accessible and enjoyable but also supports a broad range of learning objectives. Its contribution to reducing learning anxiety, coupled with its ability to adapt to the diverse needs of learners, underscores its effectiveness in fostering a conducive learning atmosphere that promotes overall language proficiency.

In the second research question, students also highlighted key disadvantages of using ChatGPT for English learning, according to student feedback. The main issues included inadequate support for in-depth grammar study, lack of interactive conversational practice in real, and insufficient preparation for standardized English exams. They also reported difficulties in maintaining focus and applying learned expressions in real-life contexts, alongside a tendency to rely too heavily on ChatGPT for answers, potentially limiting independent thinking skills. Despite these challenges, the feedback indicates that ChatGPT has its merits but falls short in areas that require structured learning and practical application. To fully benefit from ChatGPT in English learning, it should be complemented with traditional study methods and interactive learning opportunities, addressing its limitations and enhancing the overall educational experience.

It is important to note that this study addresses concerns and the exploration of ChatGPT's role in English learning. While students have shown reservations about the need for ChatGPT in language education, citing doubts about its effectiveness, the research highlights a gap in understanding its benefits and challenges due to a lack of comprehensive education and application. By exploring students' perceptions of and attitudes towards ChatGPT in language learning, the current study suggests more engaged and proactive learning experiences with it. Given the initial stage of research into ChatGPT's educational applications, especially in language learning, this study offers innovative methods that effectively incorporate this large language model into English education. Finally, the study provides insights into the use of ChatGPT in English education fields.

The limitations of the current study include the lack of longitudinal data to determine the stable impact of using ChatGPT in language learning. Furthermore, the experimental group involved in the English course featured only 20 students in a university in Korea, showing that the study is limited by its small size and lack of generalizability. In addition, although the current study adopted a pretest-intervention-posttest structure, there was no control group. In order to avoid threats to validity, it is recommended that the future study include the control group. Lastly, learner variables might have affected the students' reactions to the use of ChatGPT. Therefore, learning styles or aptitudes should also be accounted for in future studies.

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Appendix

Survey Questionnaire – developed based on the previous research [19, 20]

This section of the survey includes questions about English learning using ChatGPT. Feel free to answer the questions on a scale of 1 (strongly disagree) to 4 (strongly agree).

1. The use of ChatGPT helps improve English proficiency.
2. The use of ChatGPT is effective in improving English proficiency.
3. The use of ChatGPT reduces anxiety about learning English.
4. The use of ChatGPT reduces stress related to learning English.
5. The use of ChatGPT enhances a greater desire to learn English.
6. The use of ChatGPT boosts confidence in English.
7. The use of ChatGPT makes English learning more interesting.
8. The use of ChatGPT aids in self-directed English learning.
9. Through the use of ChatGPT, various English learning strategies can be learned.
10. Using ChatGPT can help achieve desired English learning goals.
11. The use of ChatGPT increases participation in English class.
12. Using ChatGPT can develop English communication skills.
13. The use of ChatGPT is useful for studying English vocabulary.
14. The use of ChatGPT helps in studying English grammar.
15. ChatGPT aids in increasing English listening skills.
16. ChatGPT can be used to foster English reading skills.
17. ChatGPT can be used to enhance English speaking skills.
18. ChatGPT can be used to develop English writing skills.
19. I agree with the use of ChatGPT for increasing English proficiency.
20. I will continue to use ChatGPT for studying English in the future.

This section of the survey includes questions about English learning using ChatGPT. Feel free to answer the questions on a scale of 1 (strongly disagree) to 4 (strongly agree).

21. What are the advantages of using ChatGPT for English learning?
22. What are the advantages of using ChatGPT for English learning?



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