

Using AI ChatGPT for Improving FL Freshmen's Learning of English Structural and Semantic Features

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Abstract

The study explored the effect of using the *AI chatGPT* to improve the learning of FL structural and semantic features among some FL learners. The participants are 62 freshmen registered at the faculty of Foreign Languages and Translation, Misr University for Science and Technology (MUST). Two groups of participants were formed: a control group and an experimental group with 31 students each. Data collection was based on the use of the pre-posttests of English structural and semantic features. The experimental group was taught the English structural and semantic features through the use of *AI chatGPT*, while the control group received regular instructions. For the purpose of statistical analysis, both paired samples and independent samples t-tests were employed. The findings showed the experimental group's improvement in using the English structural and semantic features compared to the control group. Pedagogically, the study recommended the inclusion of *AI chatGPT* in teaching English structural and semantic features to freshmen at the faculty of Foreign Languages and Translation, MUST.

Keywords: *AI ChatGPT*, Structural and Semantic features, Pedagogical Implications

إستخدام تشات جى بى تى لتحسين تعلم طلاب الفرقة الأولى للغة الأجنبية للسمات التركيبية و الدلالية للغة الإنجليزية

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المخلص

قامت الدراسة الحالية بدراسة تأثير إستخدام تشات جى بى تى على تحسين تعلم طلاب الفرقة الأولى للغة الأجنبية للسمات التركيبية و الدلالية للغة الإنجليزية، و شارك فى الدراسة 62 طالب بالفرقة الأولى فى كلية اللغات الأجنبية بجامعة مصر للعلوم و التكنولوجيا (ماست)، و قد تم تقسيمهم إلى مجموعتين: مجموعة ضابطة و مجموعة تجريبية ضمت كل منهما 31 طالبا، و تم جمع البيانات البحثية من خلال الأختبار القبلى و البعدى للسمات التركيبية و الدلالية للغة الإنجليزية، و تم تدريس للسمات التركيبية و الدلالية للغة الإنجليزية للمجموعة التجريبية من خلال تشات جى بى تى فى حين تم تدريسها للمجموعة الصابطة من خلال الطريقة التقليدية، و تم إستخدام أختبار ب للعينات المقترنة و العينات المستقلة لغرض التحليل الإحصائى للدراسة، و أوضحت النتائج تفوق المجموعة التجريبية فى إستخدام للسمات التركيبية و الدلالية للغة الإنجليزية مقارنة بالمجموعة الضابطة، و ترويبا أوصت الدراسة بدمج تشات جى بى تى فى تدريس السمات التركيبية و الدلالية للغة الإنجليزية لطلاب الفرقة الأولى بكلية اللغات الأجنبية فى جامعة مصر للعلوم و التكنولوجيا.

الكلمات المفتاحية: تشات جى بى تى، طلاب الفرقة الأولى، السمات التركيبية و الدلالية للغة الإنجليزية، مضامين تربوية

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Introduction

Undoubtedly, the teaching of English structural and semantic features is important of the Egyptian EFL learners, particularly those at the tertiary levels who are in need for learning and developing comprehension of complex English structures. Mastering the English structural and semantic features is necessary, indeed, to improve students' communication skills whether spoken or written. Students need to comprehend different ways of forming various structural forms embodied in the different types of English tenses be it simple, progressive or perfect, past or present. Each of these English tenses has different structural features and subsequently conveys various meanings. For instance, there are different structures and meanings of using the verb 'learn' in different English tenses. For example, the verb 'learn' in 'he learns', 'he learned', 'he is learning', 'he was learning', 'he has learned', 'he had learned', 'he has been learning', and 'he had been learning' has different forms, indicates different usages and conveys different meanings. The Egyptian EFL learners are required to master these features so that they can improve their understanding of English conversations, reply to different received oral messages, properly understand reading comprehensions and improve their academic writing skills.

Over the past decade, there have been increasing calls for utilizing the advanced technology for the purpose of teaching English as a foreign language (TEFL). The advanced technology has come into various forms including the artificial intelligence (AI) applications. For instance, Marghany (2023a) emphasized that the heydays of sole reliance on traditional methods for teaching English in Egypt have gone and should be reconsidered due to the emergence of the connectivism learning theory. He explained that utilization of advanced technology cannot be avoided in teaching English in the Egyptian context and Egyptian EFL teachers and instructors should willy nelly exploit the various advantages offered by advanced technology in developing the Egyptian EFL students' mastery of language skills. According to Brown, Lee, Mireshghallah, Shokri and Tramèr (2022) and Perkins (2023), chatGPT is

one of the AI applications whose full potentials have not been realized yet.

Hüllermeier et al. (2023) clarified that since 2022 when the *Open AI* released the *chatGPT*, there has been a growing interest among educators in various disciplines to explore its potential benefits in teaching and learning. Likewise, different FL scholars have been exploring its possible utilization for teaching and learning the English language skills.

The present study adopts the AI chatGPT application introduced by Huang, Hew and Fryer (2022). It is defined as an AI-assisted chatbot which facilitates language learning through offering learning materials, holding machine-human conversation, and providing immediate feedback. It sustains personalized learning among EFL learners because its use is not only restricted to language classes, but students can use it at anytime and anywhere.

Perkins (2023) emphasized the need for further exploration of the *AI chatGPT's* potential in the EFLT process. In the realm of TEFL process in Egypt, recent several studies called for the utilization of AI applications in developing students' English language skills. In his research, Marghany (2023b) asserted the successful contribution of AI Grammarly-based instruction in developing the Egyptian undergraduates' essay writing skills. The study was a breakthrough that launched new horizons for the TEFL process in the Egyptian context. It indicated the potential use of AI applications to develop the Egyptian tertiary students' academic writing skills. It recommended that other AI applications can be utilized to develop different English skills as well not only at the undergraduate level but also at different educational levels.

Furthermore, Quora and Elmansi (2023) called for the importance of exploiting AI tools in teaching English skills. They called for holding training workshops to guide student-teachers on the appropriate employment of innovative advanced technology in teaching English including the AI tools. In addition, there are various calls for unveiling the *AI chatGPT's* potentials in the higher education institutions such as Baskara and Mukarto (2023). Therefore, it was necessary to explore the effect of using the *AI chatGPT* on improving the freshmen's understanding and performance in the English structural and semantic features at the Faculty of Foreign Languages (MUST).

Definitions of Terms

ChatGPT

ChatGPT (Chat Generative Pre-trained Transformer) is a series of popular generative AI chatbots developed and maintained by Open AI. (Ashfaque

et al 2022). The term refers to one of the newly emerged AI applications that was exploited and utilized in the current study in comparison with traditional teaching method to improve the investigated structural and semantic skills of the participants.

Structural Features

In the current research ,structural features refer to the formation and usages of the examined English tenses, namely the simple present and present progressive tenses, the simple past and past progressive tenses, the present and past perfect tenses, and the present and past perfect progressive tenses.

Semantic Features

The term refers to the intended structural meaning resulting from using each of the above-mentioned tense.

Context of the problem

The pilot study indicated poor knowledge on the part of participants in forming and using various English tenses whether simple, progressive or perfect. Consequently, the participants also had inadequate knowledge of interpreting the associated meaning to each tense.

Statement of the problem

In accordance with the endeavors of Faculty of Foreign Languages (MUST), the current study examined the effect of using the *AI chatGPT* on improving the FL freshmen's learning of English structural and semantic features. In contrast to the conventional method, the current study explored the possibility of using *AI chatGPT* to enhance the English-majoring freshmen's learning of EL structural and semantic features. The investigation includes the participants' ability to distinguish between the structural (grammatical) or semantic functions of FL vocabulary.

Questions

The questions raised by the current study are as follows:

1. How do the two examined groups differ in the pre-and-posttests of the structural and semantic features of English lexis?
2. What are the differences between the control group and experimental group in the posttest?
3. What is the effect of using the *AI chatGPT* on improving the FL freshmen's learning of English structural and semantic features?

Hypotheses

The following hypotheses are verified in the current study:

1. The two groups do not differ in their performance of the English structural and semantic features posttest.
2. There is no statistically significant difference between the experimental and control groups' performance in the posttest.
3. The *AI chatGPT* does not prove effectiveness in improving the experimental participants' learning of structural and semantic features compared to the conventional method applied to the control group.

Aim

The current study aimed to investigate the effect of using *AI chatGPT* on enhancing the experimental group's learning of FL structural and semantic features in comparison with the use of regular instruction in the case of the control group participants.

Below are aims of the current study:

1. Identification of the difference in the performance of each group in the English structural and semantic features pretest.
2. Determination of the difference between the two groups' performance in the English structural and semantic features posttest.
3. Verification of the *AI chatGPT* effect on improving the experimental participants' learning of the English structural and semantic features.

Significance

The present study has a paramount considerable significance for the development teaching English at the Faculty of Foreign Languages (MUST) and students at other faculties in the same university. The current study also sustains efforts of developing the teaching of English language in the Egyptian context. It reinforces the literature of TEFL in general and in the Egyptian context in particular. The study sustains the endeavors of using technological application in the TEFL process in Egypt. Significance of the present study stems from the fact that it provides implications for the TEFL process in Egypt.

Delimitations

Below are the delimitations of the present study:

1. A group of 62 English-majoring freshmen at the Faculty of Foreign Languages (MUST).
2. Some structural and semantic features such as the simple present and present progressive tenses, the simple past and past progressive tenses, the present and past perfect tenses, and the present and past perfect progressive tenses
3. The first semester of the academic year 2023-2024.

Literature review

Several studies had been conducted on the benefits of using AI *chatGPT* and its effect on developing EFL learners' proficiency in general without specifying the exact examined language skills. To the researcher's knowledge the current study is the first to handle the improvement of English structural and semantic features in light of utilizing the AI *chatGPT*. As the below reviewed studies do not include any relevant to the investigation of these features in association with the employment of AI *chatGPT*.

Baskara and Mukarto (2023) discussed the possible pedagogical implications that may result from using the AI *chatGPT* in language education. Baskara and Mukarto highlighted the necessity for incorporating the AI *chatGPT* into TEFL process in higher education institutions. Such incorporation sustains students' successful learning of English due to the facilities provided by the AI *chatGPT* including the availability of original learning sources and its ability to create a suitable learning environment. As such the AI *chatGPT* has the potential to develop the EFL learners' proficiency and achievement in different academic courses.

Along with traditional methods such as *communicative language teaching (CLT)* and *task-based learning (TBS)*, the AI *chatGPT* incorporation has numerous benefits like the provision of authentic learning materials which sustain students' communication ability and learning outcomes through its immediate feedback. It also has the learning personalization advantage since it affects the FL lesson plans in a way that meets the different students' needs. As such, it can influence the efficacy of teaching instruction provided to students and increase their participation in the teaching-learning process. Moreover, it can reinforce students' motivation towards FL learning by creating practice drills which enhance their FL proficiency.

Dai, Lin, Jin, Li, Tsai, Gasevic, and Chen (2023) examined the impact of chatGPT-based automated feedback on the improvement of language learners' achievement. Dai et al. investigated the clarity of automated feedback generated by the AI *chatGPT*. They also looked into the compatibility between language instructors' feedback and that generated by AI *chatGPT*. Data were collected through 103 reports on students' assignments. In addition, three experts evaluated the clarity of chatGPT-produced feedback. The three experts had to respond to a five-point Likert assessment scale. The five assessment points are zero= feedback was not comprehensible, 1= feedback was incoherent,

2=feedback was somehow incoherent, 3= feedback was incoherent and had no fluency, and 4= feedback was both fluent and coherent.

Dai et al. found that the automated educational feedback resulted from using the *AI chatGPT* provided language learning models can accelerate the improvement of language students' learning outcomes. Dai et al. clarified that the *AI chatGPT* generated feedback is more reliable, detailed and fluent compared to that provided by language instructors. In other words, it generated feedback does not only agree with that provided by language instructors but also more accurate, dialed and fluent. It also provides feedback during the tasks completion process marking the trouble spots of students' language skills. As such, language instructors can have better understanding of their students' learning needs.

Koraishi (2023) investigated the effect of *AI chatGPT* on developing FL learning materials and assessing the improvement of FL learning. He ascertained that the *AI chatGPT* has revolutionized FL education, inspired up-to-date teaching strategies, and improved students' learning outcomes. It is capable of processing students' produced language outputs. Moreover, it generates enormous FL words that can enhance students' learning of FL vocabulary. Thus, FL instructors have to adapt their teaching strategies to accommodate the teaching of those *AI chatGPT* newly generated words.

There is significant benefit behind exploiting these FL lists of FL vocabulary which can save time in enhancing students' capabilities of learning and using FL vocabulary. In addition, FL instructors should exploit the abundant flow of authentic learning sources and materials upload to the *AI chatGPT* to improve students' language skills such the realization of better understanding of FL reading texts, written communication abilities, and oral communication skills. It can positively affect FL curriculum planning and design process to cater for students' learning needs.

Meniado (2023) systematically reviewed studies related to the effect of utilizing the *AI chatGPT* on developing the process of teaching and learning English. Meniado discussed how the *AI chatGPT* can contribute to the assessment of English teaching and learning. He employed meta-analysis framework in reviewing the relevant studies. He concluded that the *AI chatGPT* contributed to the improvement of English language teaching through the assistance of designing FL lesson plans, facilitation of language learning inside and outside the classes, providing promptly individual feedback, and the assessment of FL learning outcomes.

However, Meniado reported that there are challenges that may hinder the utilization of *AI chatGPT* in FL classes. These challenges include inaccuracy of generated responses, prejudice and plagiarism, violation of students' privacy as other classmates can know each other errors. Moreover, guidance provided by the *AI chatGPT* is emotionless because it is a machine device in contrast to that provided by the EFL language instructors. It cannot also maintain the element of equality in distributing feedback to all students because students differ in the amount of their language output. It can seriously jeopardize the security of FL instructors' jobs.

Xiao and Zhi (2023) explored the benefits result from using the *AI chatGPT* in helping EFL students to fulfill FL learning tasks. In their qualitative study, Xiao and Zhi analyzed the participants' views on the advantages of using the *AI chatGPT* in learning English. Data were elicited through interviewing five Chinese undergraduates. The interviews were important in order to solve the current ethical debate in China about the *AI chatGPT* integration as an English language learning application.

The questions of semi-structured interview revolved around the participants' evaluation of the *AI chatGPT* success or failure in meeting the FL learning needs. The interview was divided into three parts. The first part measured the interviewees' informed knowledge about the *AI chatGPT*. The second part handled ways in which the participants employed this technique for learning English. The third part dealt with the participants' awareness of the drawbacks resulted from using the *AI chatGPT*. The participants critically evaluated the learning outcomes resulted from using it. Xiao and Zhi emphasized that it is a promising tool that can be usefully used in language education.

Method

Research design

The research design of pre-and-posttest approach was adopted I the current study. The quantitative and qualitative analyses were paralleled in the present study (Huang, Hew and Fryer, 2022, Hockly, 2023 and Marghany, 2023a&b). Quantification of elicited data covers the employment of paired samples t-test and independent samples t-test. Qualitative analysis implies the description of all participants' performance in the pre-and-posttests of the English structural and semantic features.

Participants

The participants include 62 English-majoring freshmen at the Faculty of Foreign Languages (MUST). They were into two groups: one

is control and the other is experimental. Thirty one participants were distributed to each group. The age range of participants is between 19 and 20 years old. Thirty seven participants were females and twenty five participants were males. The study was carried during the first semester of the academic year 2023-2024.

Procedures

The freshmen at the Faculty of Foreign Languages (MUST) are required to study a core course of Basic Grammar. The administration of the pre-and posttests of the English structural and semantic features were carried out at the beginning and end of the first semester at the academic year 2023-2024. The test design relied on Azar and Hagen’s (2000) *Understanding and Using English Grammar* (Appendix A). After the pretest administration, the control and experimental groups were created comprising 31 students each.

The two groups studied the contents indicated in Table 1 over a period of ten weeks with two hours weekly. The *AI chatGPT* was employed to teach the contents of Basic Grammar course to the experimental group while the control group studied the same contents by using the conventional method. The experimental participants had to register on the *AI chatGPT* online free at <https://chat.openai.com/auth/login>. Websites of the *AI chatGPT* activities used to train the experimental participants on using the English structural and semantic features are shown in Appendix B.

The test of English structural and semantic features was judged by a panel of three TEFL professors seeking the comments on the selected questions. As such some questions were deleted and were replaced by others. For instance, the test first draft included questions on the verb inflectional forms ‘-s’, ‘-es’, ‘-ies’, and ‘-ed’. These questions were replaced by error correction questions. The test was internally valid as it was designed to measure the participants’ knowledge about specific structural and semantic features of some English tenses. It was also externally valid as it can be replicable to other rules of English grammar. The test was also piloted through the administration to twenty five English-majoring freshmen. The test reliability coefficient was .87 in an indication of high reliability.

Table 1: Contents of structural and semantic features taught to both groups

<ul style="list-style-type: none"> - Present simple - Past simple - Present perfect - Past perfect 	<ul style="list-style-type: none"> - Present progressive - Past progressive - Present perfect progressive - Past perfect progressive
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In the treatment, the experimental students were exposed to authentic learning materials uploaded by the researcher via the AI chatGPT facilities. These materials provided audio-visual explanations of all investigated and taught English structural and semantic features. They helped students to recognize different usages and the subsequent different meanings conveyed by each tense. The experimental students were divided into 6 groups with five participants in five groups while group six comprised 6 students. As such, the experimental students had the opportunity to discuss in group the various usages related to each of the examined tenses and write down their comments for the purpose of the researcher's consultations.

The group discussion and the general discussion held among all experimental students vividly sustained their understanding of the proper usage of each tense. In other sessions, the experimental students completed various tasks pertinent to the examined and taught English structural and semantic features. After completing their tasks, the experimental students were allowed to consult the chatGPT for the accuracy of their answers. It promptly provided answers and feedback had deepened the experimental students' comprehension of the examined and taught features. A separate file is attached including samples of the experimental students' chat via the AI chatGPT.

Data Collection Instruments

The elicitation of data depended on the pre-and-posttests of the English structural and semantic features. The tests were adopted from Azar and Hagen's (2000) *Understanding and Using English Grammar*. The tests comprise six main questions with each question contains five items. Each question bears five marks and the test is marked out of 30 marks. The questions tested the participants' knowledge about the usage and the meanings of the early mentioned English tenses.

Question one tested the participants' ability to determine the grammatically correct or incorrect sentences. Question two verified the participants' ability to correct errors in English sentences. In question three, the participants' knowledge about the different usages of the simple present and present progressive tenses was tested. In question four, the participants were required to explain the differences in meaning of the italicized verbs in a set of sentences. In question five, the participants were asked to choose the sentences that are true about the given sentence. In question six, the participants were required to complete a set of sentences by using the present perfect or the present perfect progressive.

Results and Discussion

The main purposes of quantifying the elicited data were determining the differences between both groups in using the English structural and semantic features in the pre-and-posttests. This purpose was realized through the use of paired sample t-test. Data quantification also determined the improvement of using these features in the posttest. This purpose was achieved by using the independent samples t-test. Data quantification helped to state the statistical significant differences between both groups' performance in using the English structural and semantic features in the pre-and-posttests. Such statistical significant differences are often determined through the employment of independent samples t-test.

In terms of the pretest results, Table 2 shows that both groups were poorly low in using the English structural and semantic features. The control group attained the minimum and maximum scores of (13-15) compared to (14-15) for their counterparts of the experimental participants. The mean score of the former was (22.19) compared to (22.20) for the latter. The participants found difficulty in determining the exact past tense of two actions occurred in the past; they mostly failed in distinguishing between the simple past tense and the past progressive. The participants showed confusion in the distinction between the simple present tense and the present progressive as well. The perfect and perfect progressive tenses whether present or past were very problematic to all participants.

Table 2: Descriptive statistics of the paired

	Mean Score	SD	Min.	Max.	N
Control pretest	22.1971	2.04715	13	15	31
Control posttest	35.4321	4.70462	15	23	31
Experimental pretest	22.2001	2.18403	14	15	31
Experimental posttest	46.6742	8.36904	19	29	31
Valid Number					31

As such, the present study accepts the first null hypothesis that there is no difference between the two groups' performance in the English structural and semantic pretest. The finding disagree with those found by Baskara and Mukarto (2023), Dai et al. (2023), Koraishi (2023), Meniado, 2023, and Xiao and Zhi (2023).

As indicated in Table 3, the outperformance in English structural and semantic feature posttest was in favor of the experimental group. The experimental participants had higher minimum and maximum posttest score (19-29) compared to that of the control group (15-23). The former's mean score (46.67) was largely higher than that of the control group (35.43). Its posttest standard deviation (8.36) was higher than that of the control group (4.70) as well. This indicates that the experimental participants made fewer structural and semantic errors compared to the control group in the posttest. The finding led to the rejection of the second hypothesis that there is no different between the performance of both groups in the English structural and semantic posttest. The finding is similar to those introduced by Baskara and Mukarto (2023), Dai et al. (2023), Koraishi (2023), Xiao and Zhi (2023).

Table 3: Results of paired samples t-test

Participants	Mean Score	SD	N	df	t-value	Sig.
Control pretest	22.1971	2.04715	31	30	3.715	0.007
Control posttest	35.4321	4.70462	31	30		
Experimental pretest	22.2001	2.18403	31	30	10.642	0.004
Experimental posttest	46.6742	8.36904	31	30		

Table 3 also shows that both groups' pretest performance is not statistically different. In contrast, the experimental groups' outperformance in the English structural and semantic posttest is statistically different from the control group's performance. The result is based on the p value with is less than 0.05. The result is compatible with those findings reported by Baskara and Mukarto (2023), Dai et al. (2023), Koraishi (2023), Meniado, 2023 and Xiao and Zhi (2023) .

Table 4 introduces the results of independent samples t-test. It computed the gained mean scores of each group. Apparently, the experimental students had higher gained mean score (24.47) compared to that of the control group (13.23). The difference between the two groups' gained mean scores is statistically significant as the p value is less than 0.05. The finding asserts the effectiveness of using the *AI chatGPT* in teaching the English structural and semantic features to the experimental participants in comparison to the use of traditional method in the case of the control group. The finding rejects the fourth null hypothesis about the

effectiveness of using the *AI chaGPT* on teaching the English structural and semantic features. The finding is in agreement with those finding reported by Baskara and Mukarto (2023) Dai et al. (2023), Koraishi (2023), Meniado, 2023, and Xiao and Zhi (2023).

Table 4: Results of independent samples t-test

Participants	N	GM	SD	df	t-value	Sig.
Control	31	13.235	2.65747	30	6.927	.000
Experimental	31	24.4741	6.18501	30		

It is clear that the findings agree with those found by Baskara and Mukarto (2023), Dai et al. (2023), Koraishi (2023), Meniado, 2023, and Xiao and Zhi (2023). The pretest results indicated that all participants had poor knowledge about using the English structural and semantic features. Their poor knowledge was attributed to the confusion of the proper usage of test English tenses. Participants were unable to differentiate between the usage of the present/past perfect tenses and the present/past perfect progressive. Similarly, the use of two action verbs within a sentence was problematic for most participants, particularly the past simple tense and the past progressive.

Although the participants had studied these tenses at earlier different educational stages, they attained poor pretest performance. The result revealed a defect in teaching English tenses to Egyptian EFL learners since primary through secondary schools. Participants did not really comprehend how these English tenses differ in usage. The main reason could be the Egyptian EFL teachers' reliance on using the Arabic language in providing FL grammar instructions in the classroom. Thus, Egyptian learners could have a clear ample picture of how to use these tenses properly, correctly and accurately. This was obviously apparent in the participants' inability to correctly determine the exact semantic meanings of some English sentences due to their failure of comprehending the semantic connotations of these English tenses. As such, the remedial treatment should start at early levels of teaching English tenses to Egyptian EFL learners. The involvement of Arabic language as a medium of instruction could hinder the development of sound FL cognitive system responsible for comprehending the English tenses. Thus, avoidance of employing contrastive analysis could be useful when teaching FL structural and semantic features to Egyptian EFL learners.

The posttest results showed greater improvement in the experimental group's proficiency in comprehending and applying the English structural and semantic features compared to the control group. The improvement was attributed to the *AI chatGPT*-based remedial treatment given to the experimental students. Such training provided them with ample opportunities to practice the different taught English tenses. The *AI chatGPT* practice and immediately provided corrective feedback had enhanced and deepened the experimental students' understanding of the various usages pertinent to different taught English tenses. As a result, the experimental students were able to overcome pretest difficulties. They managed to differentiate between the usages of the present simple and the present progressive tenses. They also acquired the ability to differentiate between the different tenses of two action verbs occurred in the past. The *AI chatGPT*-based remedial treatment also contributed to solve the great difficulty faced by the experimental participants in the pretest to distinguish between the usages of the present/past perfect and the present/past progressive tenses. The understanding of these four perfect tenses needs intensive practice as that provided by the *AI chatGPT*-based remedial treatment. Thus, the experimental students acquired language sensitivity necessary for having better understanding and the ability to distinguish between these English tenses.

On the contrary to the traditional method use in the case of the control group, the *AI chatGPT* effectively affected the improvement of experimental students' comprehension and achievement in the English structural and semantic features. The improvement is attributed to the characteristic advantages of using *AI chatGPT*. The experimental students were exposed to different *chatGPT*-generated learning materials and largely benefited from its feedback. It produces questions related to the learning tasks and provides successful learning environment for students. The *AI chatGPT*-produced questions are comprehensive in the sense that they the development of target different language learning skills. Therefore, the academic staff at Faculty of Foreign Languages (MUST) should find ways to exploit the *AI chatGPT* in teaching the English academic courses to enhance students' proficiency levels. The faculty junior teaching staff should be trained to use it, so as to effectively help in fulfilling their teaching duties. In addition, the experimental can be utilized on other educational stages. For instance, the FL curriculum planning and design should look into ways of integrating the *AI chatGPT* into FL teaching in the Egyptian context.

Conclusion

The current study concluded that the *AI chatGPT* effectively contributed to the improvement of the experimental students' English structural and semantic features. On the contrary, the regular instruction, employed to the control group, was not as effective the *AI chatGPT* in developing these skills for the control group participants. Consequently, language instructors at the faculty of Foreign Languages (MUST) should incorporate the *chatGPT*-based instruction in teaching the English academic courses in order to elevate the students' proficiency levels. There is a huge potential of using the *AI chatGPT* in developing the TEFL process in Egypt. Thus, there is a need to conduct more research and studies in order to attain the ample potential offered by the *AI chatGPT*.

Recommendations

The following topics are recommended for further studies:

1. The *AI chatGPT* can be applied to other educational levels in Egypt.
2. The effect of using *AI chatGPT* on the Egyptian students' motivation and attitudes towards learning English can be investigated.
3. The impact of employing *AI chatGPT* on the EFL teachers' teaching strategies is a potential research topic as well.
4. Another possible research topic maybe the effect of *AI chatGPT* on FL curriculum planning and design.
5. The use of *AI chatGPT* can be investigated in relation to teaching other English language skills.

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