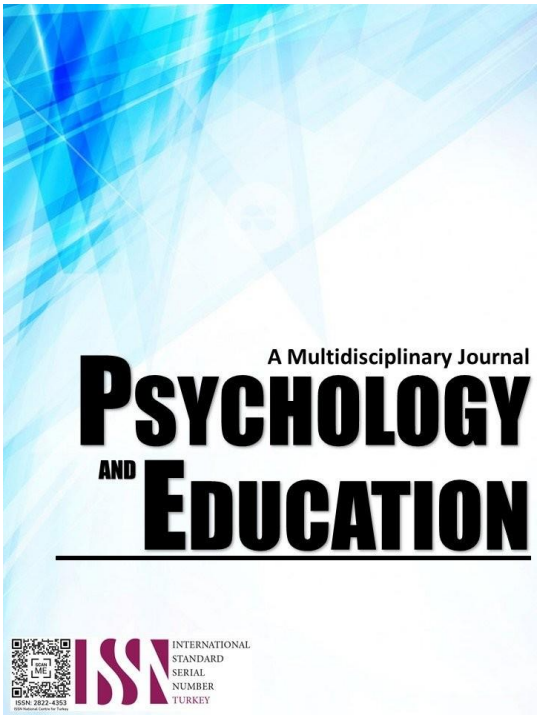
REVISITING SUBJECT-VERB AGREEMENT MASTERY: THE EFFECTIVENESS OF CHATBOTS AS PRACTICE TOOLS



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Research Article

Revisiting Subject-Verb Agreement Mastery: The Effectiveness of Chatbots as Practice Tools

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Abstract

With AI tools such as ChatGPT in the fast-changing education domain, there is a potential scope for improving student learning through integration. The effectiveness of ChatGPT as a practice partner in enabling mastery of subject-verb agreement among senior high school students was investigated in this study. A quasi-experimental pretest-posttest design was ut which involved eighty (80) eighty senior high school students from Lala Proper Integrated School. The learners accessed ChatGPT for one hour per day for five consecutive days to answer subject-verb agreement exercise questions. Their grammatical ability was measured using a teacher-made test before and after the intervention. The mean score rose from 15.6 (pretest "Fair") to 21.4 (posttest "Good"), so the mean difference reaped is 6.00 points. This mean difference signifies considerably higher average pretest to posttest scores or very likely an academic gain coincidence with the intervention. Since the assumption of normality was not met, a Wilcoxon signed-rank test was used in lieu of a parametric test. The fact that the test statistic value is 0.00^{a}, meaning the sum of the ranks of the differences is so extremely small, occurs when most of the students scored better on the posttest than the pretest to an extreme degree – a strong indication of consistent improvement throughout the sample. The accompanying p-value of <.001 implies that there exists less than a 0.1% chance that this consistent upward trend was a result of mere chance. In other words, results are statistically very significant, the probability of such a level of change occurring, through random chance is low extreme. These findings confirm that ChatGPT used as a practice partner, positively and quantitatively affected student competence for mastery in the subject-verb agreement. The interactive and reactive nature of the chatbot may have also been influential to the students' engagement, confidence and the understanding of grammar rules. Therefore AI-based instruments such as ChatGPT demonstrate a lot of promise in helping to supplement traditional instruction and to solve persistent problems associated with grammar in the classroom.

Keywords: *ChatGPT, subject-verb agreement, AI in education*

Introduction

The adoption of technology in education has accelerated rapidly in the last couple of years. Digital tools enable students to learn more flexibly, more accessible, and more student-centered. Of these tools, Chatbots were noticed for their ability to support students in unheard methods. They were usually used to answer questions, provide instant feedback and steer learners through lessons. Since they could be accessed at any time, chatbots came in useful to students who required extra help outside the classroom.

Many schools transitioned online and blended learning after the COVID-19 virus. This change caused educators to look for tools that could assist students in retaining their engagement in their studies. Chatbots were amongst the solutions that appeared. They contributed to reducing the communication gap between students and teachers, particularly in remote learning (Al-Tamimi et al., 2024). Their speed of provision and the customization of feedback made them applicable in various learning circumstances.

Human language learning was particularly supportive due to chatbots. They were created to support students with reading, words, speaking, listening and writing. Several chatbots including "Ellie" or "Gengobot" were developed as language partners. Such tools gave students an opportunity to practice conversation in a safe low-pressure environment. Learners may commit errors without insulting them which enabled them to continue practicing and trying (Yang et al 2022. Haristiani & Rifai, 2021).

Another advantage of chatbots in their application was their ability to support the individualized learning. The students could select the time and way they interacted with the chatbot. This made learning flexible, and learners could do it at their own pace. In big classrooms where it was not easy to pay enough attention to each student, chatbots provided individualized support and guidance. This encouraged responsibility and self-direction; this was a valuable skill in modern education (Jeon, 2022; Haristiani & Rifai, 2020).

Research also revealed that chatbots increased student motivation and participation. When the activity was interactive and fun, learners were ready to participate in lessons. Chatbots used game-like formats or conversations to offer vocabulary or grammar tasks thus learning became more fun (Vázquez-Cano et al., 2021). Students were less tense and, therefore, often more willing to try hard tasks or practice skills they were unsure about.

Barely these advantages, chatbots were not perfect. According to some studies, chatbots sometimes provided confusing or wrong answers. These eroded students' trust and learning. Also, the design of the chatbot and the interaction with the users shaped the experience of learning for the students (Gökçearslan et al., 2024). If a chatbot was too complicated to use or worked poorly, the students became disappointed, not supported.

Despite these difficulties, there were many experts who believed that in the classroom chatbots had great potential. The majority have

concerned themselves with how they contribute to the general skills such as speaking and vocabulary. However, fewer studies explored the way chatbots facilitated the learning of grammar rules. They often applied their attention to one important grammar topic, namely subject-verb agreement. This rule, which was simple, was difficult for many learners to apply in real communication.

A subject verb agreement was a part of English grammar too. It implied that one had to match the number of the subject and verb of a sentence. For instance, "She runs" was a grammatical form while "She run" was not. Even the most advanced learners could slip up here and especially in writing. The common form of teaching was worksheets, drills, or teacher led reviews, but they did not always provide enough practice and immediate feedback.

Since chatbots provide quick feedback, modeled correct usage, they can have potential of helping students in subject-verb agreement. They also provided the students with more opportunities to practice the rules in a natural way/ conversation or short tasks. Because students could use the chatbot in their own time, they could squeeze in some extra practice. This may have helped them build confidence/accuracy with time.

This research sought to determine the effectiveness of chatbots as practice buddies to assist Lala Proper Integrated School students to be able to understand and use the subject-verb agreement. It explored how students interacted with the chatbot, how their grammar improved or learnt here and the way they perceived learning while using the chatbot.

Research Questions

This study aimed to examine the effectiveness of chatbots as practice partners in improving senior high school students' mastery of subject-verb agreement at Lala Proper Integrated School in the school year 2024 – 2025. Specifically, this study sought to answer the following questions:

1. What are the pretest scores of the respondents on subject-verb agreement?
2. What are the posttest scores of the respondents on subject-verb agreement after using the chatbot?
3. Is there a significant difference between the pretest and posttest scores of the respondents?

Methodology

A quasi-experimental research design, specifically a pretest-posttest design, was used in this study to assess the effectiveness of chatbots in improving students' mastery of subject-verb agreement. The respondents' subject-verb agreement skills were measured through a pretest before they engaged with the chatbot intervention. Following the intervention, a posttest was administered to measure any changes in their performance. This design allows for the evaluation of the chatbot's impact on students' grammatical skills by comparing pretest and posttest scores, without the need for random assignment.

Participants

The respondents of this study were 80 Lala Proper Integrated School senior high school learners and covered a specific sample using well defined inclusion criterion. These were students in the General Academic Strand (GAS), Humanities and Social Sciences (HUMSS), and Technical-Vocational Track (TVL) and their age were from 16-18 years old. They were selected by purposive sampling based on their language proficiency levels since there had been recent academic performance and teacher recommendation of their proficiency in English. This was to make sure only the reasonable persons could be used to determine the efficacy of chatbots in facilitating mastery of subject-verb agreement. The process of choosing also paid attention to whether the students were enrolled in Academic Year 2024 – 2025, and regularly in class and available all through the period of the study, thus making them a good sample representative for the target population.

Research Instrument

The main tool of collection of data for the study was a teacher-made 30 item multiple choice test developed to determine student mastery of subject and verb agreement. For every item, the student had to make a choice with the correct verb in the grammatical construction of a sentence and a right or wrong scoring format. For instance, one of the things was: "Ana ___ a banana every morning," (a) eat (b) eats. The correct answer is "eats." A variety of rules of subject-verb agreement was discussed in the test, including the singular and plural form of subjects, the case of compound subjects, special cases with indefinite pronouns and collective nouns.

To confirm that the test had content validity, the test was checked and validated by three experts in the study of English language education. These experts scrutinized the items to measure the relevance, clarity of content, and alignment to the prescribed competencies of learning, to refine the instrument. A pilot test was also carried out with a cohort of similar students to the actual participants so that clarity of instructions and suitability of the test items could be confirmed. The instrument internal consistency was measured, using Cronbach alpha which produced a coefficient of reliability of 0.717 and was acceptable as a coefficient. The same pool of test items was used in the pretest and the posttest; however, items were re-arranged on the posttest to eliminate the potentiality of item recall and to ensure the integrity of results. This test became the primary source used for analyzing the success of the chatbot intervention at students' level of understanding of the subject-verb agreement.

Procedures

The formal consent from the school authorities of Lala Proper Integrated school was obtained prior to undertaking the study. When approved, the experiment was conducted in the second semester second quarter of Academic Year 2024–2025. The study started with the administration of the pretest on a Monday, during normal class hours, the students had an hour to answer the test in their respective havens of learning. This first test endeavored to establish the level of mastery the learners already had with subject-verb agreement. Right after the pretest, the researcher presented the intervention tool, the ChatGPT Free Plan, as a practice buddy for improving grammar. Students were oriented on the way to access and communicate with chatGPT, as well as given some step-by-step instructions on using ChatGPT for practicing subject-verb agreement.

The intervention was done under the teacher's supervision whereby students utilized ChatGPT for one hour daily for five days within the school compound. These training sessions were incorporated into their normal class schedule in order to have a consistent and compliant practice. On the subsequent Monday, the same thirty-item test was given, in the same location, with the items having been scrambled to reduce recall during class hours as the posttest. Following the post test, the researcher gathered, arranged and found the data in order to perform statistical analysis. The following procedure was developed in order to test the effectiveness of ChatGPT as a learning tool for enhancing students' understanding/applications of subject-verb agreement rules.

Ethical Considerations

Ethical considerations were strictly observed throughout the conduct of the study. Anonymity of the respondents was ensured by not requiring any identifying information in the test papers or data sheets. Participation was voluntary, and informed consent was obtained from both the students and relevant school authorities before the study began. The purpose and procedures of the research were clearly explained to the participants, and they were assured that their responses would be used solely for academic purposes. Confidentiality was maintained by securely storing all data and limiting access only to the researcher. Additionally, the intervention using ChatGPT Free Plan was conducted in a safe and supervised environment, ensuring that students were not exposed to any harmful or inappropriate content during the process.

Results and Discussion

This section presents the findings according to the study's research questions. To compare the mean and find out the significance between scores, Wilcoxon Test was used, as the assumptions such as normality were not met. It was computed using JAMOVI 2.6.26.

Pretest scores of the respondents on subject-verb agreement

Table 1. *Students' Pretest Scores on Subject-Verb Agreement*

	Mean	SD	Minimum	Maximum	DE
Pretest	15.6	2.30	10	21	Fair

Descriptive Equivalent: 27 – 30 Excellent, 23 -26 Very Good, 19 – 22 Good, 15 – 18 Fair, 1 – 14 Needs Improvement

Table 1 presents the pretest scores for students' subject-verb agreement during the first phase of the study. The test comprised of 30 items of multiple-choice types were given in a classroom as all the test related work was directly conducted under the teacher and researcher, ensuring standard testing conditions and avoiding academic dishonesties. The test was given a time frame of one hour to take by the students, which was capable of measuring their initial knowledge of their subject-verb agreement concepts before any intervention is applied. The results presented mean a score of 15.6 with a standard deviation of 2.30 meaning that performance had moderate variations across the 80 student respondents. The scores registered were lowest at 10 and highest at 21. Referencing the descriptive equivalent scale developed for this study, the overall performance level was interpreted as "Fair" indicating that a large number of students showed partial or basic mastery of rules on subject-verb agreement. The fact that they perform at this level indicates that there is need for more interesting, individualized purveyor of instructional strategies in an effort to improve the mastery of this lesson by the students.

The results conform to the available literature which show that students, especially in the contexts where English is not their first language, they often suffer from enduring subject-verb agreement problems. For example, Pandapatan (2020) determined that English major students often struggled with the most basic of the rules of grammar because of first language interference and limited vocabulary base, which could impede proper uses of verbs. Similarly, Rueda (2022) found that BAELS students committed subject-verb agreement errors with indefinite pronouns and compound subjects, a generic problem even in students from a language-focused academic background.

Posttest scores of the respondents on subject-verb agreement

Table 2. *Students' Posttest Scores on Subject-Verb Agreement*

	Mean	SD	Minimum	Maximum	DE
Pretest	21.4	2.62	15	27	Good

Descriptive Equivalent: 27 – 30 Excellent, 23 -26 Very Good, 19 – 22 Good, 15 – 18 Fair, 1 – 14 Needs Improvement

Table 2 displays the students' posttest scores on subject-verb agreement achieved after the five-day chatbot-assisted intervention. The posttest was given after administration of the intervention of the intervention after the regular class hours. The same 30-item teacher-made test, administered at the pretest, was then also used but the items were randomly arranged to avoid recall and maintain test validity. The test was performed in an academic environment under the control of the researcher and the teacher for control purposes and the equality of testing conditions. Students were given one hour to complete the assessment.

The mean score of the results was 21.4 with a standard dev of 2.62. Scores were between 15 and 27, showing significant change from the pretest results. From the descriptive equivalent scale used in this study, the students' performance on the posttest was read as "Good" reflecting superior mastery in subject-verb agreement. Such major improvement implies a positive impact made on students' learning outcomes by the integration of Chatbots as practice tool.

The results are consistent with increasing evidence on learning from AI-driven tools. Chatbots can offer flexible and interactive material for learners of foreign languages to boost their learning of grammar rules because they support them during real-time conversations (Vázquez-Cano et al., 2021). Similarly, according to Haristiani and Rifai (2021), the introduction of chatbots drives autonomous learning and enhances student motivation, two essential aspects of acquiring a skill in language. Based on these findings, Albaar et al. (2024) pointed out that although traditional classroom teaching is vital, the use of digital resources such as Chatbots can still make a difference to students' results by having the possibility of personalized support to support teacher delivered instruction.

Additionally, Maghamil and Sieras (2024) discovered that, using the ChatGPT feature, the students' academic performance was enhanced through improved grammar, content accuracies, and organizational skills which are central competencies in both writing and overall language for development. Even though their research area was academic writing, the concept of grammar reinforcement and immediate feedback applies in support to the practice of subject-verb agreement. This in turn stimulates the argument that ChatGPT, if appropriately incorporated into instructional design, can become an effective supplementary tool for grammar instruction.

In sum, post-test performance demonstrates the promise of ChatGPT to raise students' level of understanding of subject-verb agreement through repetitive, rotating and student-centered task-based exposure. The learning advances discovered imply that AI-assisted instruction may become effective as a supplement to the traditional style of learning, especially as regards grammar orientation.

Significant difference between the pretest and posttest scores of the respondents

Table 3. *Significant Difference on Students' Scores on Subject-Verb Agreement*

	Mean Difference	SE Difference	Statistic	p-value	Remarks
Pretest – Posttest	-6.00	0.387	0.00[a]	<.001	Highly Significant

Note. H_a µMeasure 1 - Measure 2 ≠ 0 [a] 3 pair(s) of values were tied

Table 3 compares the students' pretest and posttest scores on the subject verb agreement while it is presented through statistical analysis. The pretest was given on the first day of the week and during the normal class period and gave the students one hour to fill in an answer the 30 teacher-made test questions. Post test after a five-day intervention when students spent an hour a day with Chatbots, it was administered the following week in the same conditions. In order to reduce the recall bias, the posttest items were randomized so that the reliability of results was not compromised.

A mean difference of -6.00 between the t-test scores in pre-test and post-test was observed with standard error of 0.387 through the analysis. The t-statistic value showed a strongly significant difference which was supported by a p value of <.001. That negative mean difference indicates that, on average, students' posttest scores were six points higher than pretest scores which means a significant improvement in masters of subject-verb agreement after the chatbot intervention. Thus, it shows the chatbots can be a practice tools in learning grammar.

These findings validate the effectiveness of chatbot-aided instruction for grammar learning. The significant difference in scores validates previous research on the effectiveness of interactive and adaptive learning technology. Chen et al. (2020) demonstrated that chatbot-based learning tools enable the learning of grammar and vocabulary through adaptive, feedback-providing interaction. Likewise, Yang et al. (2022) emphasized the fact that chatbots enable active use of the language and encourage learner engagement, both of which are critical to learn grammatical rules.

Furthermore, students typically experience difficulty in writing with grammatical rules, especially when building intricate sentence structures (Abeywickrama & Amaraweera, 2023). The improvement observed indicates that the ChatGPT-based intervention efficiently overcomes these challenges. Chatbots offer repeated exposure to language input and provide individualized feedback, allowing students to recognize and correct errors in the moment. This strategy is particularly useful in settings where individual teacher feedback may not be possible. As Abeywickrama and Amaraweera (2023) point out, interactive digital tools make language practice meaningful and are critical in supporting grammar teaching.

In brief, statistically significant posttest score increase, supported by strong theoretical and empirical research, highlights the worth of incorporating chatbot technology in grammar pedagogy. The evidence reveals that these devices can assume a central position to improve language correctness, especially in learning environments with limited one-to-one support.

Conclusion

According to the findings of the study, it can be concluded that practicing with ChatGPT enhanced the mastery of subject-verb agreement among students to a large degree. The comparison of the mean scores of the pretest and the posttest clearly indicates that the chatbot intervention enabled the students to grasp the rules better. The findings that are extremely significant indicate that the improvement was not random but was a direct result of the practice they gained from the chatbot. The change from "Fair" to "Good" on the descriptive scale indicates that the students could grasp and apply rules of subject-verb agreement more successfully after the intervention.

The study also shows how the integration of chatbots in grammar practice can provide students with a more interactive, personalized learning experience. There was immediate feedback from the chatbot, and it allowed students to learn at their own pace, which would be likely to increase their confidence and consolidate learning. This shift in performance shows how AI tools like ChatGPT can impact language learning in a positive manner, giving students a welcoming learning environment where they can practice and improve their skills. The findings show that the students can achieve remarkable improvement in learning if they are provided with the right tools and facilitation.

According to the findings, it is recommended that educational institutions implement AI-based tools such as ChatGPT in language learning or lessons, particularly for the practice of subject-verb agreement. With the positive impact on students' mastery of subject-verb agreement, chatbots can be a valuable complement to traditional teaching methods, providing individualized, interactive learning experiences. Schools must make ChatGPT available for students outside of regular class hours for additional practice and provide training for teachers on the effective implementation of these tools in their practice. Institutions must review and assess the effectiveness of chatbot implementation regularly by monitoring students' progress and collecting feedback from students and teachers. This will make the implementation of AI tools continuously improve and provide long-term support for students' mastery of grammar.

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