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From Assistance to Over-Reliance: Rethinking ChatGPT's Role in Grammar Learning

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ABSTRACT

This study examines a notable trend among language learners: their reliance on ChatGPT bots for generating grammatical information. The use of these tools reflects a positive response to advancements in technology. While the study acknowledges the benefits of ChatGPT in facilitating learning for both teachers and students, it also addresses a critical concern: the accuracy of the information provided by these bots. Some students may assume that the information from ChatGPT is always reliable, leading to an over-reliance on its outputs, particularly regarding grammatical concepts. To investigate this issue, the study analyzed 12 randomly selected ChatGPT bots, each responding to a grammatical query. The results revealed a concerning lack of accuracy, with scores ranging from 0% to 80%, and none achieving a perfect score of 100%. To further understand user awareness of these limitations, two questionnaires were distributed to language instructors and learners. While both groups recognized the utility of ChatGPT, instructors expressed significant concern over students' misconceptions and their over-reliance on these tools. Acknowledging the limitations of ChatGPT, instructors are actively warning their students about those limitations, which is crucial for their effective learning. Given that learners often feel confident in ChatGPT's reliability, educators need to establish guidelines for its appropriate use in the classroom to mitigate over-reliance. Additionally, experts in various fields could provide references and resources that enhance the accuracy of information generated by such tools, making them more valuable for users across different specialties.

Keywords: ChatGPT; Grammar; Nominalization; Accuracy; AI Tools; Teaching; Learning

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1. Introduction

The field of educational technology is undergoing a rapid transformation, profoundly influencing the dynamics of teaching and learning environments. Among the most revolutionary technological innovations to emerge in recent years is Artificial Intelligence (AI), which has had a significant impact on education. In particular, the concept of Artificial Intelligence in Education (AIED) has garnered substantial attention due to its potential to revolutionize traditional educational practices. AIED has not merely introduced new tools; it has fundamentally altered our understanding of education, shifting away from conventional teaching methods and providing fresh perspectives on how knowledge is disseminated and acquired.

One of the most notable advancements in AI technology is ChatGPT, an AI-powered chatbot developed by OpenAI and released in November 2022. The acronym stands for Chat Generative Pre-Trained Transformer^[1]. Since its introduction, ChatGPT has made significant entrances into educational contexts, marking a radical shift in the way students and educators engage with learning materials^[2]. Its capabilities have added a new dimension to both teaching and learning, offering innovative ways for students to interact with content and gain insights.

While ChatGPT has gained widespread adoption in educational settings, it is not without controversy. It has been recognized as a transformative tool that enhances the teaching and learning experience, yet it also raises critical questions and concerns among educators and researchers alike^[3]. The reactions to ChatGPT's integration into the classroom are mixed; some educators embrace its potential, while others caution against its implications for student learning and autonomy.

Proponents of ChatGPT argue that its integration into education presents numerous advantages for both teachers and students when utilized effectively. For instance, ChatGPT can generate tailored content in response to specific requests, providing answers to a wide array of questions and offering personalized solutions to learners' inquiries. Its constant availability ensures that students receive immediate support and feedback, which can significantly enhance their learning experiences^[4]. Moreover, ChatGPT serves as a valuable resource for students navigating complex subjects, offering them real-time assistance and guidance tailored to

their individual needs^[5].

Conversely, some researchers express concerns regarding the incorporation of ChatGPT in educational contexts. One significant issue is the reliability of the information it provides. As ChatGPT sources data from an extensive network, there are instances where the information may be inaccurate, potentially misleading learners^[6]. Additionally, there is a growing worry that reliance on ChatGPT could foster dependency among students, leading them to bypass critical thinking and problem-solving processes^[5]. Prolonged use of the tool may even have an adverse effect on students' handwriting skills and self-confidence^[7]. Furthermore, since students often do not cross-reference information obtained from ChatGPT with other sources, they risk accepting incorrect data as fact^[8].

The challenge of learning a foreign language, particularly in mastering grammar, has historically been a significant challenge for students. Traditional methods, such as classroom instruction and textbook learning, have often resulted in diminished interest and motivation among learners^[9]. However, ChatGPT has emerged as a powerful ally in overcoming these challenges, particularly in enhancing students' understanding of grammar and alleviating their apprehensions surrounding it^[10].

The benefits that ChatGPT offers to students learning grammar are extensive. Its round-the-clock availability allows learners to practice their language skills at their convenience, making it a flexible tool for language acquisition. The interactive, chat-based structure of ChatGPT creates an engaging environment where students can refresh their grammatical knowledge and apply it in real-time. Many learners utilize ChatGPT to receive corrections for grammatical errors, obtain constructive feedback, and swiftly address spelling mistakes^[11]. By providing immediate insights into grammatical usage, sentence structure, and appropriate word choices, ChatGPT has redefined the grammar learning experience, making it more enjoyable and effective compared to traditional methods^[9].

Despite the advantages, it is essential to approach the use of ChatGPT with caution. Educators are advised to supervise students' interactions with the tool and regularly assess the accuracy of the information provided^[12]. Grassini also emphasizes the necessity of teacher oversight to mitigate the risk of students developing an overreliance on ChatGPT,

which could hinder their independent learning and critical thinking skills^[13].

In summary, while the use of ChatGPT may pose risks to students' independent thought and language expression skills, outright prohibition of this tool in academic settings is not a viable solution, as articulated by Dwivedi et al.^[14]. Therefore, this study aims to analyze the impact of ChatGPT on the grammar learning of English as a Foreign Language (EFL) university students. From researchers' firsthand experiences, ChatGPT proved to be extremely helpful in teaching basic grammatical rules, including verb tenses, modals, regular and irregular forms, parts of speech, phrases, and clauses. However, when teaching more advanced grammatical levels, in which students were introduced to specialized terms and concepts such as sentence patterns and types, restricted and non-restricted phrases and clauses, or changing sentence focus, it was observed that ChatGPT bots sometimes made linguistic errors in generating information related to these terms and concepts.

The central research questions guiding this investigation include:

1. To what extent does ChatGPT's language output demonstrate an understanding of specialized grammatical concepts such as nominalization?
2. Is ChatGPT's grammatical knowledge limited? And is it always a suitable reference for language learners?
3. How do language teachers perceive the validity and trustworthiness of ChatGPT's grammatical guidance?
4. How can the grammatical capabilities of ChatGPT be further improved?

2. Review of Literature

In recent decades, ChatGPT has gained significant traction within the educational sector, capturing the interest of both educators and students alike. This literature review aims to provide a comprehensive overview of the benefits and challenges associated with this technology for both teachers and learners.

2.1. ChatGPT in Teaching

Teachers today are navigating the complexities introduced by chatbots like ChatGPT. While the accessibility of

such tools is anticipated to enhance the teaching process, educators have raised several concerns regarding their impact. Karaköse and Tulubas argue that ChatGPT creates a dynamic and enriching environment for both learners and educators^[15]. It fosters innovation and creativity, prompting educational leaders to rethink traditional teaching and learning methods. Rather than dismissing ChatGPT as a mere novelty, they emphasize the importance of harnessing human intelligence to manage and maximize the benefits of this technology effectively.

Further supporting this perspective, Kiyakova and Angelova conducted a study involving university professors from Trakia University in Bulgaria, which revealed a generally positive attitude towards integrating ChatGPT into their teaching practices^[16]. Despite their apprehension about the potential for students to overly rely on the information generated by the chatbot, these educators recognize its value as a supportive tool that enhances their teaching activities and boosts student engagement.

In a similar vein, Nguyen explored the perceptions of English as a Foreign Language (EFL) teachers in Vietnam regarding the incorporation of ChatGPT in writing classes^[17]. The study found that teachers are enthusiastic about using ChatGPT to facilitate instruction in writing and research methodology. Many educators have begun to incorporate chatbots into their lesson planning and resource creation, appreciating their ability to provide customized learning materials and ideas. Notably, the majority of teachers reported encountering minimal technical difficulties, highlighting ChatGPT's user-friendly design. The study also underscores the critical need for professional development to equip instructors with a deeper understanding of ChatGPT's capabilities and potential risks, thereby ensuring its effective implementation in language education.

Kohnke, Moorhouse, and Zou conclude their technology review by asserting that AI-driven tools, including applications like ChatGPT, have become integral to the educational landscape^[18]. Consequently, both language teachers and learners need to cultivate advanced digital competencies. This skill set will enable them to leverage the advantages of these technologies while simultaneously preparing them to address the inherent challenges and drawbacks.

Students utilizing various ChatGPT applications have increasingly developed independent learning strategies out-

side the confines of traditional classroom settings. However, Leng highlights a significant limitation of these chatbots: their ability to communicate complex scientific information effectively^[19]. This issue is particularly pertinent in medical education, especially in subjects like anatomy. Lengthy discussions in the study emphasize the ongoing need for improvements and careful regulation of ChatGPT as an educational tool.

A systematic review conducted by Albadarin et al. analyzed 14 selected studies that examined initial efforts to integrate ChatGPT into educational practices by both learners and teachers^[20]. Their findings indicated that educators found ChatGPT to be a valuable resource for enhancing productivity and efficiency. Teachers utilized technology to create lesson plans, generate quizzes, provide additional resources, and answer student inquiries, which not only saved time but also enabled more dynamic and engaging teaching methodologies.

In conclusion, we can reflect on Ho's assertion regarding the indispensable role of teachers in the educational landscape, particularly in the realm of English language learning, despite the pervasive presence of AI in various aspects of our lives^[21]. This highlights the enduring need for human insight and guidance in the face of rapidly evolving technological advancements.

2.2. ChatGPT in Learning

The increasing role of AI in education has significantly transformed the learning landscape, enabling students to personalize, adapt, and tailor their educational experiences to suit their individual needs and learning styles better. AI-powered chatbots, particularly ChatGPT, have emerged as valuable assistants in students' learning journeys. Educators are now acutely aware that their students have access to these readily available resources, which can help them answer questions, complete writing assignments, conduct research, analyze information, and engage in practice exercises.

However, students exhibit varying attitudes and perceptions towards these chatbots. This diversity was the focus of a study conducted by Tu and Hwang, who employed a draw-a-picture technique alongside epistemic network analysis to explore students' conceptions of ChatGPT^[22]. Their findings revealed that while most university students acknowl-

edged the supportive role of ChatGPT in their learning, some viewed it as an on-demand tutor that could be consulted at any time and from any location. Despite this positive outlook, the study indicated that many students do not fully utilize the advanced learning support that ChatGPT can offer, often limiting their engagement to basic interactions.

Concerns regarding the effective use of ChatGPT are particularly pronounced among educators. According to research by Allehyani and Algamdi, as well as Stojanov, teachers worry that beginner learners may lack the necessary skills and knowledge to interact critically with ChatGPT, which could hinder their ability to use the technology effectively^[23, 24]. For novice learners, distinguishing between accurate and misleading information in the content generated by ChatGPT poses a significant challenge. Conversely, Stojanov noted that more advanced learners, who possess prior knowledge and have developed critical thinking skills, are better equipped to benefit from interactions with ChatGPT^[24]. These students can assess and evaluate the quality of information provided, utilizing their existing knowledge as a foundation for their analyses.

In a focused study, Lestari and Wicaksono examined how students employed ChatGPT to tackle grammar tasks assigned by their instructors^[25]. The grammar tasks included multiple-choice questions, dialogue completion, paragraph gap-filling, and picture series storytelling, all of which were closely tied to writing skills. Their research identified three distinct methods students used when engaging with ChatGPT. The first method involved students copying and pasting sentences into the chatbot for automated responses. The second method had students translating sentences from their native language into English using the chatbot. Lastly, some students provided specific instructions to the chatbot regarding how they wanted their responses formatted.

A systematic review conducted by Albadarin et al. analyzed 14 selected studies that highlighted the initial attempts at integrating ChatGPT into educational practices by both learners and educators^[20]. Their findings revealed a mix of positive and negative impacts on learners. On the positive side, the review indicated that students have utilized ChatGPT as a virtual assistant, benefiting from its ability to provide instant feedback, on-demand answers, and explanations of complex topics. This has facilitated easy access to educational resources and enhanced their writing and language

skills through activities such as idea generation, essay composition, translation, summarization, and grammar checking. Additionally, learners have leveraged ChatGPT to support their personalized learning by clarifying assignments and providing structured learning plans. However, the review also highlighted concerns regarding the overuse of ChatGPT, which could diminish innovative thinking and collaborative learning. Relying too heavily on quick answers may hinder students' critical thinking and problem-solving abilities, resulting in a superficial engagement with the material.

Further exploring the implications of ChatGPT in education, Ali et al. examined both the benefits and challenges associated with its use in educational environments^[26]. They noted that the capabilities of ChatGPT in natural language processing, text generation, and performance evaluation present significant opportunities for enhancing the educational experience and personalizing learning. Their research underscored the positive impact of ChatGPT on student engagement and accessibility. However, the authors also expressed concerns regarding the quality and potential bias of ChatGPT's responses, as well as the risks of plagiarism and questions about the authenticity of educational content.

Research by Ho delved into learners' behaviors, perceptions, and attitudes towards using ChatGPT in learning English^[21]. Her findings highlighted the students' need for guidance from teachers and traditional classroom environments, despite their acknowledgment of ChatGPT's effectiveness in acquiring specialized vocabulary, translation, grammar checking, and paraphrasing. She noted that many students tended to rely excessively on ChatGPT for quick solutions to challenges encountered in their English studies.

Kucuk conducted a comparative study examining the benefits and concerns associated with using ChatGPT for grammar learning and teaching among English as a Foreign Language (EFL) students^[7]. The study involved two groups: a control group and an experimental group. The control group received traditional grammar instruction through teachers and textbooks, whereas the experimental group benefited from grammar education facilitated by ChatGPT. The results showed that students in the experimental group demonstrated significant improvements in their grammatical skills compared to those in the control group. Most participants expressed satisfaction with the integration of ChatGPT into their grammar lessons, concluding that while some concerns

remained, the advantages of using ChatGPT for grammar learning outweighed the potential drawbacks.

Lastly, Lo et al. conducted a systematic review to develop a comprehensive understanding of ChatGPT's influence on student engagement^[3]. Their findings revealed both positive and negative impacts of learning environments supported by ChatGPT. From a behavioral perspective, many students actively engaged with ChatGPT during their learning activities. However, a lack of understanding regarding its proper use could lead to problematic behaviors such as plagiarism and cheating. Emotional responses varied, with some students expressing satisfaction while others experienced disappointment related to the accuracy and credibility of ChatGPT's responses. Cognitively, students were able to learn effectively from ChatGPT, which enhanced their understanding and academic achievement. Nevertheless, there were concerns that excessive reliance on the chatbot could negatively impact students' critical thinking skills.

Although research on ChatGPT is still in its early stages, numerous studies have begun to explore its advantages and disadvantages in educational settings. However, there remains a notable scarcity of research specifically addressing its effects on grammar learning and teaching. This indicates a pressing need for further investigation, particularly concerning its application to specific language features, such as grammar tasks.

3. Methodology

3.1. Research Design

Generative AI has recently made significant strides in our lives, fundamentally changing how both teachers and learners perceive the processes of teaching and learning. This study highlights the widespread adoption and utility of one of the most prominent AI tools, ChatGPT. While viewing this development as a positive advancement in education, it aims to remind users—especially those in the education sector—that ChatGPT primarily functions as a tool, generating responses based on the information it has been trained on or has access to.

To achieve its objectives and address its research questions, the study collected data by evaluating generative questions related to a specific grammatical concept: "nominalization." This quantitative approach was complemented by

qualitative methods to provide a comprehensive understanding of how language teachers and learners recognize and navigate potential “lapses” that may occur when generating grammatical concepts using ChatGPT.

3.2. Sampling

The sample of the present study included:

- 12 Chatbot interfaces showcasing responses to a grammatical request from 12 randomly selected chatbots.
- 35 participants completed the language instructors’ questionnaire.
- 150 participants completed the language learners’ questionnaire.

3.3. Instruments of the Study

To achieve the study’s objectives, the researchers employed the following instruments:

1. Chatbot interfaces: The researchers collected responses from various chatbots to generate grammatical questions related to “Nominalization.”

2. Two Questionnaires:

First Questionnaire: This was distributed to language instructors at Princess Nourah University. It consists of six questions. It utilizes a Likert scale that allows respondents to indicate their level of agreement with statements ranging from “strongly disagree” to “strongly agree.”

Second Questionnaire: This was distributed to language learners at Princess Nourah University, and it consists of two parts. The first part assesses participants’ familiarity with ChatGPT. Those unfamiliar with ChatGPT were asked to select reasons from provided options, along with an “other” option for additional comments. Learners who were familiar with ChatGPT were then asked to respond to ten statements using a four-point Likert scale, with options including “strongly disagree,” “disagree,” “agree,” and “strongly agree.”

3.4. Data Collection

To achieve the goal of this study, the researchers adopted the following methods to collect the data:

1. A request regarding a specialized grammar concept was submitted to various ChatGPT applications to assess their accuracy in generating responses. The request was “I need example sentences containing ‘that’ as a nominalizer.” The answers were analyzed, and the results were documented according to their level of accuracy in correctly reflecting this linguistic concept.
2. Two questionnaires were created using Google Forms. The first was distributed to language instructors to assess their reliance on ChatGPT for preparing and delivering grammatical tasks. It also aimed to gauge instructors’ awareness of the limitations of ChatGPT applications in supporting certain grammatical concepts. The second questionnaire was distributed to English language learners, gathering information on their reliance on ChatGPT for learning and completing grammatical tasks. Additionally, it sought to investigate the extent to which these learners were aware of the limitations of these applications in providing accurate information on some grammatical concepts.

3.5. Data Analysis

A descriptive analysis was used to analyze the various responses gathered from chatbots in generating the grammatical question “I need example sentences containing ‘that’ as a nominalizer.”

For the questionnaires, the individual items were evaluated by calculating the scores for each statement to identify significant indicators for the study.

3.5.1. Analysis of Answers from Different ChatGPT Applications

The grammatical concept of “nominalization” was used as an empirical example to explore this deficiency. A relevant grammatical rule concerning “expletive that” states that the expletive “that” can introduce a sentence, transforming it into a nominal clause that functions as part of a larger sentence rather than standing alone^[27]. The request was processed using 12 different ChatGPT applications. The percentage of correct answers was calculated based on the number of examples provided by each application, as illustrated in **Table 1**.

Table 1. The percentage of the correct answers given by 12 ChatGPT applications.

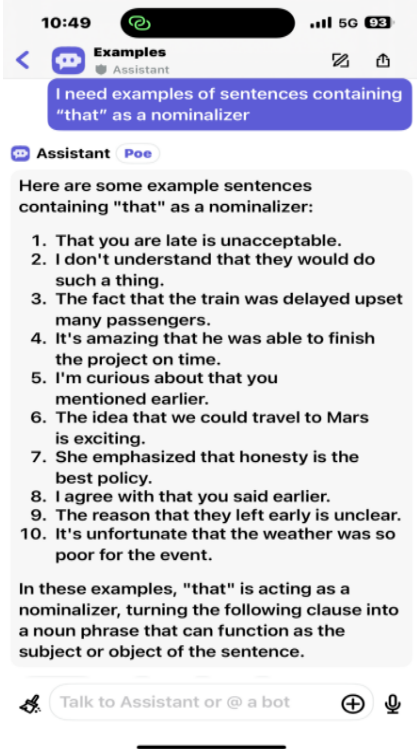
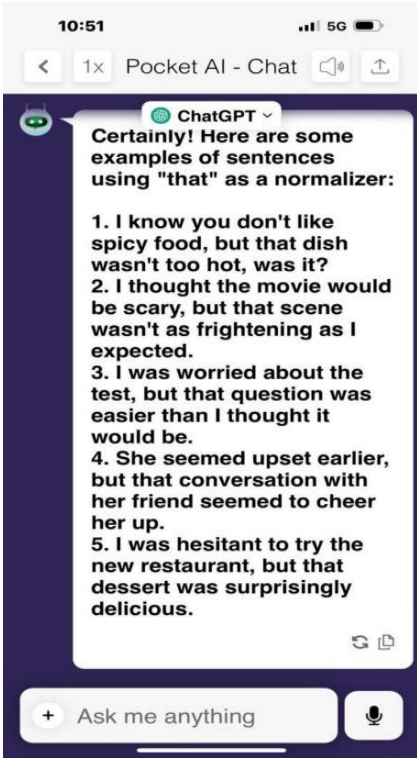
Chatbot Applications	Examples	Percentage of Correct Examples
1. Poe : utilizes multiple models including GPT-3.5 and Claude.	 10:49 Examples Assistant I need examples of sentences containing "that" as a nominalizer Assistant Poe Here are some example sentences containing "that" as a nominalizer: 1. That you are late is unacceptable. 2. I don't understand that they would do such a thing. 3. The fact that the train was delayed upset many passengers. 4. It's amazing that he was able to finish the project on time. 5. I'm curious about that you mentioned earlier. 6. The idea that we could travel to Mars is exciting. 7. She emphasized that honesty is the best policy. 8. I agree with that you said earlier. 9. The reason that they left early is unclear. 10. It's unfortunate that the weather was so poor for the event. In these examples, "that" is acting as a nominalizer, turning the following clause into a noun phrase that can function as the subject or object of the sentence. Talk to Assistant or @ a bot	70% Examples 3, 6 and 9 are not appropriately illustrate the nominalizer "that." In these cases, "that" functions as a relative pronoun.
2. ChatBot : uses proprietary models.	 10:51 1x Pocket AI - Chat ChatGPT Certainly! Here are some examples of sentences using "that" as a normalizer: 1. I know you don't like spicy food, but that dish wasn't too hot, was it? 2. I thought the movie would be scary, but that scene wasn't as frightening as I expected. 3. I was worried about the test, but that question was easier than I thought it would be. 4. She seemed upset earlier, but that conversation with her friend seemed to cheer her up. 5. I was hesitant to try the new restaurant, but that dessert was surprisingly delicious. Ask me anything	0% All given examples demonstrate "that" as a demonstrative pronoun.

Table 1. *Cont.*

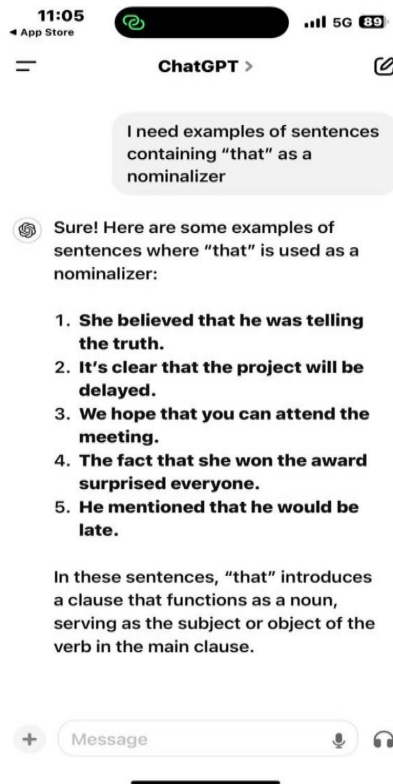
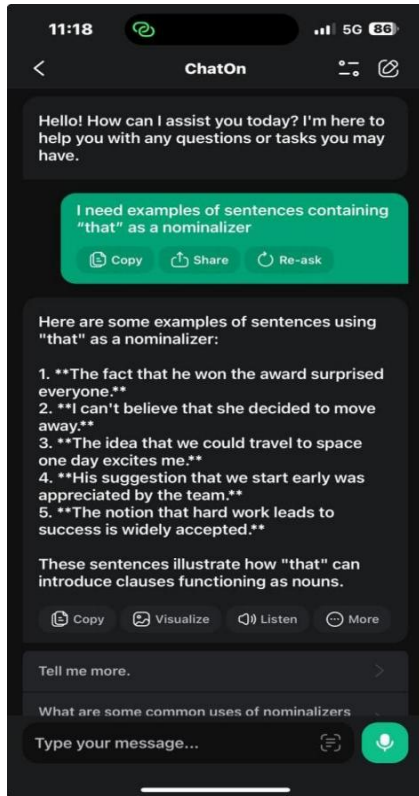
Chatbot Applications	Examples	Percentage of Correct Examples
3. ChatGPT: uses OpenAI's GPT-3.5 and GPT-4 models.	 11:05 App Store ChatGPT I need examples of sentences containing "that" as a nominalizer Sure! Here are some examples of sentences where "that" is used as a nominalizer: 1. She believed that he was telling the truth. 2. It's clear that the project will be delayed. 3. We hope that you can attend the meeting. 4. The fact that she won the award surprised everyone. 5. He mentioned that he would be late. In these sentences, "that" introduces a clause that functions as a noun, serving as the subject or object of the verb in the main clause. Message	80% "That" in example 4 functions as a relative pronoun rather than "nominalizer."
4. ChatOn-AI Chat Bot Assistant: often employs various AI models.	 11:18 ChatOn Hello! How can I assist you today? I'm here to help you with any questions or tasks you may have. I need examples of sentences containing "that" as a nominalizer Copy Share Re-ask Here are some examples of sentences using "that" as a nominalizer: 1. **The fact that he won the award surprised everyone.** 2. **I can't believe that she decided to move away.** 3. **The idea that we could travel to space one day excites me.** 4. **His suggestion that we start early was appreciated by the team.** 5. **The notion that hard work leads to success is widely accepted.** These sentences illustrate how "that" can introduce clauses functioning as nouns. Copy Visualize Listen More Tell me more. What are some common uses of nominalizers Type your message...	20% Only example 2 illustrates "that" as a nominalizer. In all other examples, it serves as a relative pronoun.

Table 1. *Cont.*

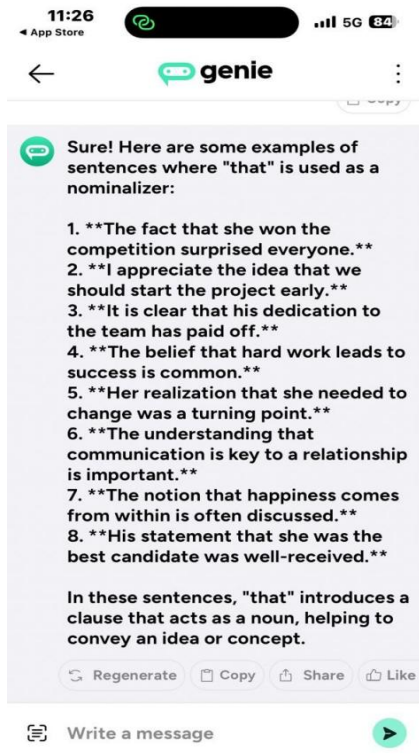
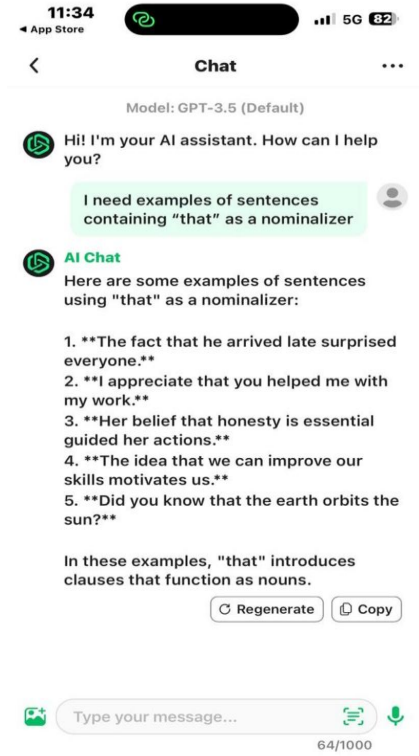
Chatbot Applications	Examples	Percentage of Correct Examples
5. Genie: commonly uses models like GPT-3.5 or proprietary variations.	 The screenshot shows a chat interface for 'genie'. The chat history includes a message from the user asking for examples of sentences where 'that' is used as a nominalizer. The chatbot responds with a list of 8 sentences, each enclosed in double asterisks. The sentences are: 1. **The fact that she won the competition surprised everyone.** 2. **I appreciate the idea that we should start the project early.** 3. **It is clear that his dedication to the team has paid off.** 4. **The belief that hard work leads to success is common.** 5. **Her realization that she needed to change was a turning point.** 6. **The understanding that communication is key to a relationship is important.** 7. **The notion that happiness comes from within is often discussed.** 8. **His statement that she was the best candidate was well-received.** Below the list, a summary states: 'In these sentences, "that" introduces a clause that acts as a noun, helping to convey an idea or concept.' At the bottom, there are buttons for 'Regenerate', 'Copy', 'Share', and 'Like', and a text input field labeled 'Write a message'.	12.5% Example 3 shows “that” as nominalizer.
6. AI Chat: utilizes various models, often unspecified.	 The screenshot shows a chat interface for 'AI Chat'. The chat history includes a message from the user asking for examples of sentences containing 'that' as a nominalizer. The chatbot responds with a list of 5 sentences, each enclosed in double asterisks. The sentences are: 1. **The fact that he arrived late surprised everyone.** 2. **I appreciate that you helped me with my work.** 3. **Her belief that honesty is essential guided her actions.** 4. **The idea that we can improve our skills motivates us.** 5. **Did you know that the earth orbits the sun?** Below the list, a summary states: 'In these examples, "that" introduces clauses that function as nouns.' At the bottom, there are buttons for 'Regenerate' and 'Copy', and a text input field labeled 'Type your message...'.	40% In examples 1, 3 and 4 “that” functions as a relative pronoun rather than as a nominalizer.

Table 1. Cont.

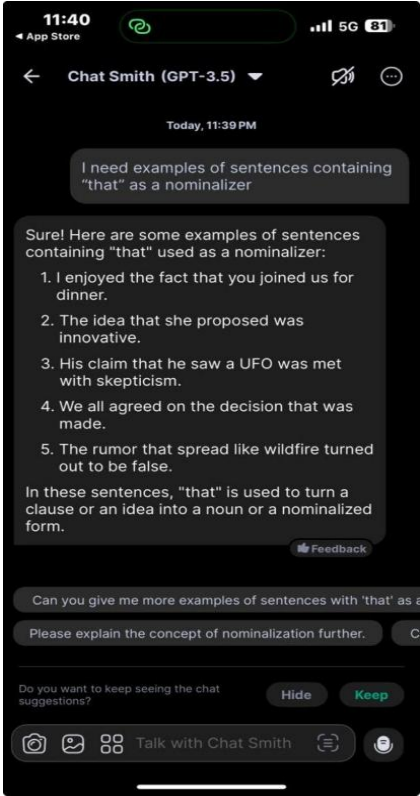
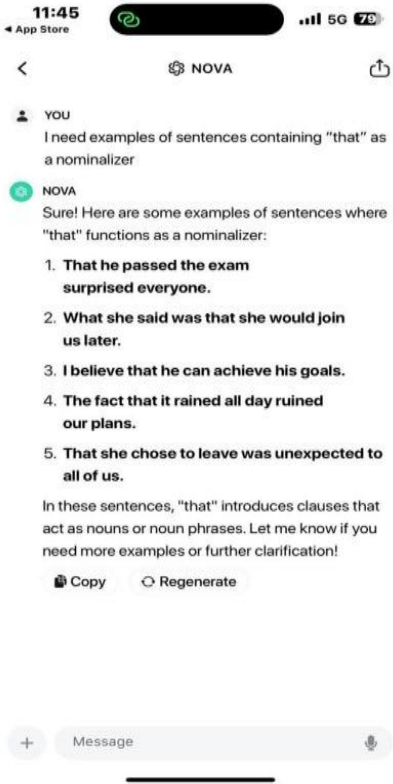
Chatbot Applications	Examples	Percentage of Correct Examples
7. Chat Smith: uses GPT-3.5 or similar models.		0% All provided examples use “that” as a relative pronoun to introduce a relative clause.
8. Nova: often leverages GPT-3.5.		80% All provided examples correctly illustrate “that” as a nominalizer, except for example 4, where “that” functions as a relative pronoun instead.

Table 1. Cont.

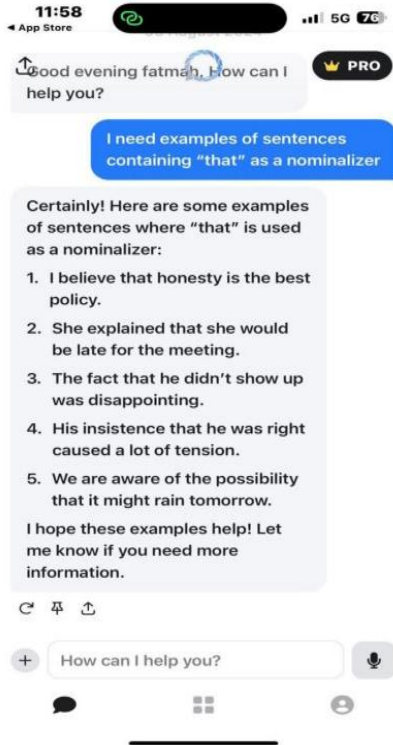
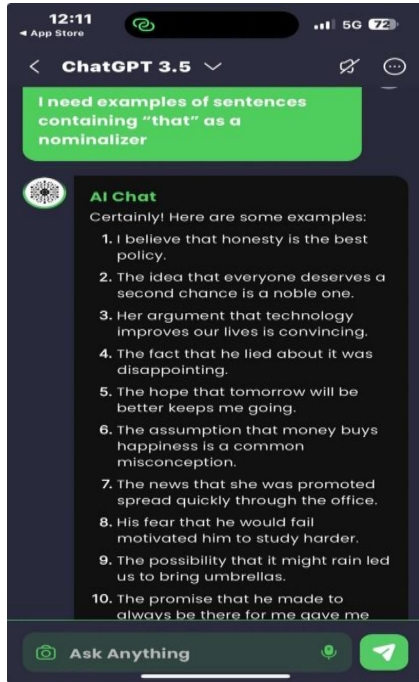
Chatbot Applications	Examples	Percentage of Correct Examples
9. Chat AI - Ask Anything: uses various AI models.	 The screenshot shows a mobile app interface for 'Chat AI'. At the top, the status bar shows 11:51, 5G, and 78% battery. The app header includes 'App Store', 'Chat AI', and a share icon. A video prompt is displayed: '/video prompt: The unseen footage of aliens during Apollo 11 Moon Landing'. Below the prompt is a video thumbnail of an astronaut. The main chat area shows a user message: 'I need examples of sentences containing "that" as a nominalizer'. The AI response is: 'Sure! Here are some sentences where "that" is used as a nominalizer: 1. **The fact that she came to the party surprised everyone.** 2. **I appreciate that you took the time to help me.** 3. **The idea that we can achieve our goals motivates me.** 4. **His belief that honesty is the best policy guided his actions.** 5. **The suggestion that we should leave early was well-received.** Let me know if you need more examples or further clarification!'. The bottom of the screen shows a 'Type a message' input field with a plus icon on the left and a microphone icon on the right.	20% Only example 2 contains “that” as a nominalizer, while all other examples use “that” as a relative pronoun.
10. Frank AI: typically employs various models.	 The screenshot shows a mobile app interface for 'Frank AI'. At the top, the status bar shows 11:58, 5G, and 76% battery. The app header includes 'App Store', a green circular icon, and a 'PRO' badge. The main chat area shows a user message: 'Good evening fatman, how can I help you?'. The AI response is: 'Certainly! Here are some examples of sentences where "that" is used as a nominalizer: 1. I believe that honesty is the best policy. 2. She explained that she would be late for the meeting. 3. The fact that he didn't show up was disappointing. 4. His insistence that he was right caused a lot of tension. 5. We are aware of the possibility that it might rain tomorrow. I hope these examples help! Let me know if you need more information.'. The bottom of the screen shows a 'How can I help you?' input field with a plus icon on the left and a microphone icon on the right.	40% Examples 1 and 2 are the only ones that include nominal clauses introduced by “that.”

Table 1. *Cont.*

Chatbot Applications	Examples	Percentage of Correct Examples
11. AI Chat-Assistant Chatbot: uses a mix of models.		10% Only example 1 uses “that” as a nominalizer.
12. Chatbot: employs proprietary models.		40% Examples 1 and 3 illustrate nominalization, while the others contain relative clauses introduced by “that.”

The previous analysis of the accuracy of responses provided by 12 different ChatGPT applications reveals significant variability in their reliability. Notably, none of the 12 applications showed 100% accurate responses. Two applications (3 and 8) achieved the highest accuracy rate of 80%, two applications (2 and 7) failed, registering 0% accuracy. Additionally, three applications (6, 10, and 12) demonstrated moderate performance with 40%, while one application (11) provided only 10% accuracy, and another (5) 12.5%. The remaining applications showed a range of 20% to 70%. This variability could highlight the following notes:

- The lack of consistency across the different ChatGPT applications.
- The importance of raising awareness while utilizing such applications.
- Users must critically assess the sources of information when presented with insights from experts in the field.

3.5.2. Analysis of Language Instructors' Questionnaire

The participants were 35 language instructors. The frequency of each response option was calculated for each statement as shown in **Table 2**.

Table 2. Response frequency analysis for language instructors' questionnaire statements.

Statement	Strongly Disagree	Disagree	Agree	Strongly Agree
ChatGPT is a part of my preparation for my lessons.	5 (14.3%)	10 (28.6%)	14 (40%)	6 (17.1%)
I use ChatGPT in preparing grammatical tasks for my students.	6 (17.1%)	8 (22.9%)	16 (45.7%)	5 (14.3%)
I use ChatGPT to provide my students with more clarifying examples for the grammatical points being discussed	6 (17.1%)	11 (31.4%)	14 (40%)	4 (11.4%)
I try to search in ChatGPT for the grammatical topics I cover in class, so that I can alert my students to some of the false ideas that they might encounter in fulfilling their tasks.	5 (14.3%)	14 (40%)	12 (34.3%)	4 (11.4%)
I noticed that students lately rely on ChatGPT in completing their grammatical tasks and projects.	3 (8.6%)	9 (25.7%)	13 (37.1%)	10 (28.6%)
I always warn my students about the limitations and shortcomings of ChatGPT in conveying proper grammatical concepts	1 (2.9%)	6 (17.1%)	14 (40%)	14 (40%)

From **Table 2**, the following points can be observed:

- A significant majority (57.1%) agree or strongly agree that ChatGPT is part of their lesson preparation, indicating its perceived value among educators.
- 60% of respondents use ChatGPT for preparing grammatical tasks, suggesting it is a valuable resource for educators in this area, despite a notable percentage (40%) expressing disagreement.
- 51.4% agree or strongly agree on using ChatGPT for clarifying examples. This shows that many educators recognize its utility.
- Only 45.7% search for grammatical topics for any possible misconceptions. This highlights a lack of proactive communication with students regarding possible inaccuracies.
- A total of 65.7% students observe' reliance on ChatGPT which raises concerns about over-reliance on ChatGPT for academic tasks.
- A strong agreement (80%) for statement 6 indicates that instructors warn students about the limitations of ChatGPT. This is a positive sign of awareness regarding serious engagement with AI-generated content.

In general, there is a strong acceptance of ChatGPT as a helpful tool among educators, particularly in lesson preparation and task design. While many recognize its utility, there is a notable concern about students' misconceptions and over-reliance on ChatGPT. Hence, being aware of the limitations of the information provided by ChatGPT, instructors are actively warning their students about those limitations, which is essential for their learning.

3.5.3. Analysis of Language Learners' Questionnaire

Approximately 44% of the learners who participated in this questionnaire were first-year university students. Students at this level, across all disciplines, are enrolled in an intensive English course. Higher-level students primarily come from the College of Languages, who continue with additional English courses.

Based on the learners' response to the second question, "Do you know ChatGPT?", 26 participants (17.3%) who answered negatively were asked to select from a list of reasons. They were also provided with a blank space to include any additional comments not covered by the given options. The main reasons for not being familiar with ChatGPT were:

1. They are not interested in such AI tools.
 2. They have heard about it, but they do not think it is useful.
 3. Addiction to it could hinder their ability to think critically.
- The 124 participants who were familiar with ChatGPT (82.7%) proceeded to the next part, which contained 9 statements on a 4-point scale and a yes/no question. The frequency of learners' responses to each statement was documented as illustrated in **Table 3**.

Table 3. Response frequency analysis for language learners' questionnaire statements.

Statement	Strongly Disagree	Disagree	Agree	Strongly Agree
ChatGPT is helpful and supporting in learning grammar.	2 (1.6%)	12 (9.7%)	68 (54.8%)	42 (33.9%)
I use ChatGPT to complete my grammatical tasks.	10 (8.1%)	44 (35.5%)	47 (37.9%)	23 (18.5%)
I use ChatGPT to complete a grammatical task from the beginning to save my time and effort.	14 (11.3%)	55 (44.4%)	37 (29.8%)	18 (14.5%)
I just use ChatGPT if I am not sure about a piece of information.	3 (2.4%)	19 (15.3%)	64 (51.6%)	38 (30.6%)
I search, read, and think before asking the help from ChatGPT.	5 (4%)	15 (12.1%)	45 (36.3%)	59 (47.6%)
ChatGPT is like the teacher in the classroom.	21 (16.9%)	54 (43.5%)	33 (26.6%)	16 (12.9%)
I trust the grammatical information I get from ChatGPT.	7 (5.6%)	41 (33.1%)	50 (40.3%)	26 (21%)
I verify the grammatical information I get from ChatGPT according to what was explained by the teacher in class.	2 (1.6%)	25 (20.2%)	54 (43.5%)	43 (34.7%)
My teachers warn me against relying completely on ChatGPT.	7 (5.6%)	19 (15.3%)	43 (34.7%)	55 (44.4%)
Have you ever lost marks because of relying on ChatGPT information.	YES (32/25.8%)		NO (92/74.2%)	

Based on the information shown in **Table 3**, the following insights can be highlighted:

1. The majority of respondents (88.7%) find ChatGPT helpful in learning grammar, as indicated by their responses to the first statement.
2. There is a notable reliance on ChatGPT for grammatical tasks (56.4%), but fewer respondents (44.3%) use it from the beginning to save time.
3. A significant percentage of users (61.3%) trust the information provided by ChatGPT, yet many (78.2%) also verify it against what was taught by their teachers.
4. A large proportion of respondents (79.1%) acknowledge that teachers advise against relying solely on ChatGPT, indicating a recognition of the need for caution when using AI tools.
5. A significant percentage of respondents (74.2%) reported not losing marks due to reliance on ChatGPT information, indicating confidence in the tool's accuracy among users.

The data suggests that while ChatGPT is perceived as

a helpful tool in learning and completing grammatical tasks, there is a balanced approach regarding its use, with many respondents verifying information and following teachers' advice. This reflects a cautious but positive view of AI-assisted learning in grammar. This is also enhanced by responses to the last yes/no statement in the questionnaire, which indicates that users generally feel confident in the reliability of ChatGPT. However, it also highlights the need for ongoing education about potential inaccuracies to ensure informed usage.

4. Discussion

Based on the above analysis, the questions of the study can be processed as follows:

1. **To what extent does ChatGPT's language output demonstrate an understanding of specialized grammatical concepts such as nominalization?**

The data analyzed in this study revealed a notable inconsistency among randomly selected chatbots in providing ac-

curate grammatical information related to “nominal clauses introduced by that.” The accuracy rates varied significantly, ranging from 0% to 80%. This disparity highlights the importance of users carefully assess the information obtained from ChatGPT, particularly when dealing with complex grammatical structures. The findings indicate that while ChatGPT can generate language-related responses, its understanding of nuanced grammatical concepts may be limited, thus necessitating a cautious approach to its use in educational contexts.

2. Is ChatGPT’s grammatical knowledge limited? And is it always a suitable reference for language learners?

The findings suggest that ChatGPT can indeed serve as a double-edged sword. On one hand, it offers substantial benefits for both educators and students by facilitating access to information and aiding the learning process. On the other hand, this study emphasizes the importance of exercising caution, especially when generating information about specialized grammatical concepts. Users should be aware of the potential pitfalls associated with relying solely on ChatGPT, particularly in instances where precise grammatical knowledge is essential for effective learning.

3. How do language teachers perceive the validity and trustworthiness of ChatGPT’s grammatical guidance?

Generally, language instructors view ChatGPT as a valuable resource in their teaching toolkit. However, they also express valid concerns about the risk of students developing misconceptions or becoming overly reliant on this technology. In response to these concerns, educators are taking proactive steps to guide their students in using ChatGPT effectively. This guidance is crucial in fostering a balanced approach to learning that encourages critical thinking and independent analysis.

4. How can the grammatical capabilities of ChatGPT be further improved?

To address these challenges, educators, as leaders in the educational process, should establish clear guidelines for the appropriate use of ChatGPT in classroom settings. Such guidelines will help mitigate the risk of over-reliance on the tool. Additionally, it is essential to recognize that ChatGPT, like other AI tools, operates within the confines of the data it has been trained on. Therefore, making expert resources

and referenced materials more accessible would empower users from various fields to consult reliable sources, thereby enhancing the accuracy and relevance of the information generated.

5. Conclusions

As the integration of AI tools in education becomes increasingly inevitable, this research focuses on how to make this integration effective. Central to this study are two key components of the teaching process: the role of teachers and learners’ reliance on these tools. Educators cannot overlook AI, especially since many learners are actively engaging with these technologies, which can significantly assist in course preparation and evaluation. This study aims to contribute to the ongoing discussion by advocating for the use of AI in education while addressing potential concerns that could hinder its effectiveness.

One critical issue explored is the potential inaccuracy of AI-generated information, particularly in specialized subjects. The study highlights the limitations of certain ChatGPT applications in providing accurate grammatical information, such as nominalization. To investigate this, twelve ChatGPT applications were analyzed, alongside two questionnaires distributed to 35 language instructors and 150 language learners.

The findings revealed a troubling degree of inaccuracy concerning the grammatical concept of nominalization. Two applications demonstrated 0% accuracy, while the highest accuracy reported was only 80% for two others. The remaining tools varied in accuracy from 10% to 70%. This discrepancy underscores a significant challenge that educators must consider when using ChatGPT for specialized grammatical information. While these tools may effectively address basic grammatical rules, such as verb tenses and sentence structure, they often struggle with more complex concepts, like nominalization.

The questionnaires indicated strong engagement with ChatGPT among both language instructors and learners in the context of teaching and learning grammar. However, notable concerns emerged regarding students’ misconceptions and their potential over-reliance on ChatGPT. Instructors expressed ongoing caution, highlighting the limitations of AI-generated information. Although learners reported verify-

ing information obtained from ChatGPT as per their teachers' guidance, their reliance on these tools raises questions about the accuracy of their grammatical understanding.

The findings of this study carry positive implications for the teaching and learning of grammar. ChatGPT is viewed as a valuable resource that complements traditional teaching methods. Integrating AI tools, particularly ChatGPT, into educational practices can enhance student learning experiences. However, this integration must be critically evaluated by users. Educators, as leaders in the educational process, need to establish guidelines for the appropriate use of AI tools in their classrooms to mitigate the risk of over-reliance.

On a broader scale, the limitations of information generated by ChatGPT emphasize the need for caution and the implementation of training programs focused on the effective and ethical use of these resources. Educational institutions should incorporate AI literacy into their curricula to prepare students for a future where AI tools are ubiquitous.

Author Contribution

Conceptualization, F.A.A. and A.M.A.; methodology, F.A.A. and A.M.A.; resources, F.A.A.; data curation, A.M.A.; writing—original draft preparation, F.A.A. and A.M.A.; writing—review and editing, F.A.A. and A.M.A.; visualization, A.M.A.; supervision, F.A.A.; project administration, F.A.A. All authors have read and agreed to the published version of the manuscript.

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Data Availability Statement

We would like to confirm that all data supporting the reported results in our manuscript can be found within the body of the research. We have not created any new datasets that require public archiving, and all relevant information is included in the manuscript itself.

Conflicts of Interest

The authors declare no conflict of interest.

During the preparation of this work, the authors used AI editing tools to edit. After using this tool, the authors reviewed and edited the content as needed and take full responsibility for the content of the publication.

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