ARTIFICIAL INTELLIGENCE AS A TOOL FOR TEACHING ENGLISH GRAMMAR TO FUTURE MEDICAL SPECIALISTS

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Annotation: The development of artificial intelligence (AI) has created new possibilities for English grammar instruction. For future medical specialists, grammatical competence is important for both academic work and professional communication. This paper examines the potential of AI as a supporting tool for teaching English grammar in Medical English classes, with particular attention to contextualized practice and individualized feedback. Recent research on grammar pedagogy, AI-supported language learning, and medical education is reviewed. The analysis suggests that AI can provide additional opportunities for grammar practice, generate professionally relevant examples, and offer immediate feedback. However, its educational value depends on the relevance and accuracy of the generated material and on teacher guidance. The paper argues that AI is most useful when grammatical structures are taught through meaningful medical contexts and when students actively evaluate and revise AI-generated feedback.

Keywords: artificial intelligence, English grammar, Medical English, English for Specific Purposes, ESP.

English grammar is an important component of Medical English because future medical specialists need to describe symptoms, report patient histories, explain procedures, discuss treatment, and communicate information accurately. In such situations, grammar is not simply a collection of rules to be memorized. It is part of the ability to express professional meaning clearly.

Larsen-Freeman (2003) presents grammar as a dynamic process of using grammatical structures accurately, meaningfully, and appropriately. This view is particularly relevant to Medical English because students need to apply grammar in professional situations rather than demonstrate grammatical knowledge only through isolated exercises. Ellis (2006) similarly emphasizes the importance of connecting attention to grammatical form with meaningful language use.

Context therefore becomes important in grammar instruction for medical students. A learner may know the rule for the present perfect but still have difficulty using it when describing a patient's medical history. Similarly, passive structures may be understood as a grammatical form but need to be recognized and used appropriately when describing medical procedures or

clinical processes.

Artificial intelligence provides a possible way of supporting this type of contextualized instruction. AI systems can generate examples, dialogues, short medical case descriptions, and grammar exercises based on particular structures. The purpose of this paper is therefore to examine how AI can support English grammar instruction for future medical specialists, particularly through contextualized practice and individualized feedback.

AI-Supported Contextualized Grammar Practice

One potential contribution of AI is its ability to create grammatical practice within professionally relevant situations. Instead of presenting a grammatical structure separately from its communicative purpose, teachers can use AI to generate activities based on medical situations.

For example, students can practise the present perfect through patient-history descriptions, passive constructions through reports of medical procedures, and conditional structures through discussions of possible treatment outcomes. Such activities can help students see how grammatical choices contribute to professional meaning.

This approach is consistent with Larsen-Freeman's (2003) view that grammar should be understood through form, meaning, and use. AI does not replace this pedagogical principle; rather, it can make the preparation of varied contextualized examples more accessible to teachers.

Evidence from broader English language learning also suggests that AI-supported instruction can contribute to language development. Xu and Wang (2024), in a meta-analysis of 40 empirical studies involving 3,290 participants, reported a substantial overall effect of AI-supported learning on English learning achievement. However, the researchers also found that the effects varied according to factors such as learners' characteristics and learning conditions. This suggests that AI should not be considered equally effective in every educational context.

For Medical English, the context of the generated activity is therefore important. An AI-generated grammar exercise may be technically correct but still unsuitable if its vocabulary, situation, or communicative purpose does not correspond to the needs of medical students.

AI-Supported Feedback and Individualized Practice

A second use of AI is providing immediate feedback. In a traditional grammar class, students may receive corrections only after completing an exercise or submitting written work. AI tools can identify possible errors immediately and allow students to revise their responses several times.

Mohamed (2026) directly examined real-time AI-mediated feedback in focus-on-form grammar instruction. In a quasi-experimental mixed-methods

study, undergraduate EFL learners used Grammarly-supported grammar tasks, while a comparison group received conventional teacher-mediated instruction. The study reported stronger grammar-development outcomes for the AI-supported group and observed that learners actively returned to tasks and engaged with feedback. At the same time, the study emphasized that AI feedback worked as part of structured instruction rather than as an independent replacement for the teacher.

This finding is important for Medical English. AI can provide additional individual practice, but the teacher still determines which grammatical structures are relevant and whether the feedback is appropriate for the professional context.

Evidence from medical education also supports the value of AI-assisted language feedback. Li, Zong, Wu, Wu, Peng, Zhao, Yang, Xie, and Shen (2024) examined ChatGPT-assisted English academic writing among 25 medical students. After students revised their papers with ChatGPT, their scores improved in structure, logic, language, and overall quality. The study therefore suggests that AI can provide useful language support for medical students, particularly during revision.

These findings indicate that AI may be especially useful when it is used to **extend feedback and practice**, rather than to complete the learning task for students.

Teacher-Guided Use of AI

The role of the teacher remains important because AI-generated explanations and examples are not automatically appropriate or accurate. In Medical English, this issue is particularly significant because grammar activities may contain specialized terminology and professional information.

The teacher should therefore select the target grammatical structures, establish the medical context, check AI-generated materials, and evaluate student performance. Students should also be encouraged to examine AI feedback rather than simply accept every correction.

This approach creates a division of roles. AI can provide additional examples, repeated practice, and preliminary feedback, while the teacher remains responsible for pedagogical decisions and professional appropriateness. Such a model also helps prevent excessive dependence on automated correction. The goal is not for students to become better at obtaining correct sentences from AI, but to become better at **using grammatical structures independently and appropriately in medical communication**.

AI-supported grammar instruction for future medical specialists can be organized around realistic professional situations. Teachers may use AI to prepare short case descriptions, patient-history exercises, medical dialogues, or

grammar-focused tasks based on particular communicative purposes. For example, students can identify the use of the present perfect in a patient's history, analyse passive structures in a description of a medical procedure, or practise conditional forms when discussing possible outcomes. After completing an AI-supported activity, students can explain their grammatical choices and compare their answers with reliable medical and language sources. This approach keeps grammar connected with professional communication while allowing AI to provide additional practice. It also preserves the teacher's role as the person who determines the learning objective and evaluates the quality of the activity.

Conclusion

Artificial intelligence has potential as a supporting tool for teaching English grammar to future medical specialists. Its main value lies in its ability to generate contextualized practice, provide immediate feedback, and offer additional opportunities for individualized learning. However, AI should not be treated as an independent grammar teacher. Its output may not always be accurate or appropriate for a particular medical context, and excessive dependence on automated correction may limit students' independent language development. The teacher therefore remains essential for selecting grammatical objectives, checking AI-generated materials, and connecting grammar with professional communication.

The reviewed research supports the use of AI as a **supplementary resource within contextualized and teacher-guided Medical English instruction**. When grammatical form is connected with professional meaning and students are encouraged to evaluate and apply AI feedback critically, AI can contribute to the development of the grammatical competence required by future medical specialists.

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