



IMPROVING ENGLISH GRAMMAR TEACHING THROUGH THE PPP MODEL INTEGRATED WITH ARTIFICIAL INTELLIGENCE TOOLS

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ABSTRACT

The article examine the methodological improvement of teaching English grammar in general secondary schools through the PPP(Presentation-Practice-Production) model integrated with artificial intelligence(AI) tools. The study aims to develop and experimentally verify an effective learner-centered methodology that enhances students' grammatical competence, practical skills, and communicative fluency. An experimental study was conducted with 7th-8th grade students in Uzbekistan. The experimental groups applied the PPP model supported by AI tools, while control groups followed traditional grammar instruction. Results showed that the PPP-AI approach significantly improved students' grammar performance, motivation, and active participation in lessons. The methodology aligns with international frameworks such as CEFR and can be effectively implemented in secondary education.

Introduction

English grammar competence is foundational for effective communication in the globalized world. Traditional grammar teaching relies on heavily on rote learning, limiting learner engagement and real-time feedback. The PPP model -Presentation, Practice, Production- is a structured instructional approach aimed at introducing and reinforcing grammar rules systematically. While PPP provides a clear sequence of learning stages, it often lacks individualized feedback and adaptive support for diverse learner needs. The modernization of education emphasizes innovative pedagogical models and digital technologies in language learning. English grammar instruction plays a critical role in developing communicative competence. Recent advances in Artificial Intelligence (AI)- especially language models and adaptive learning platforms offer new opportunities to address these limitations by providing personalized feedback and automated error correction, making grammar learning more interactive and learner-centred. However, traditional teaching methods often fail to engage students and promote independent language use (Harmer,2015; Richard &Rodgers,2014).

This study proposes using the PPP model integrated with AI tools to enhance grammar teaching effectiveness.

Literature review

The PPP model is widely recognized as an effective framework for structured language teaching. Presentation allows contextual introduction of grammar with a clear sequence of rules, Practice reinforces accuracy through exercises, and Production encourages autonomous application and free communication production (Scrivener, 2011). It helps bridge theory and use in communicative contexts and facilitates scaffolded learning. Recent studies highlight the potential of AI in education to provide personalized feedback, adaptive learning, and interactive content (Holmes, Bialik, & Fadel, 2019). Studies show that incorporating AI into grammar instruction can lead to improved accuracy in grammar usage compared to traditional settings. Integrating AI with PPP can address limitations of traditional methods, increasing motivation and learner engagement. The CEFR framework ensures alignment with international language proficiency standards (Council of Europe, 2020).

Materials and methods

3.1 Participants

The study involved 7th-8th grade students in Uzbekistan, divided into experimental and control groups. Both groups were matched for age, proficiency level, and exposure.

3.2 Design

Experimental groups received English grammar instruction using the PPP model integrated with AI tools, while control groups used conventional methods. Grammar Tests: Pre- and post-tests based on standard grammar evaluation tasks.

AI Tools: ChatGPT for practice conversation and grammatical explanations; Grammarly for instant feedback on writing activities.

3.3 Procedure

1. Presentation: Grammar concepts introduced via AI-supported visualizations.
2. Practice: Adaptive exercises with automated feedback.
3. Production: AI-assisted speaking and writing tasks.

3.4 Data Collection

Data were collected through grammar tests, classroom observation, and student engagement metrics.

3.5 Analysis

Performance and engagement were compared using descriptive statistics.

Results

4.1 Grammar Performance Gains

Experimental group learners showed greater improvement in accuracy, complexity, and self-corrected grammar errors compared to the control group.

Students in the experimental groups showed higher grammar test scores, improved practical skills, and increased lesson participation compared to the control groups

Group	Pre-test mean	Post-test mean	Difference
Control	46.2%	61.4%	+14.2
Experimental	48.8%	72.1%	+23.3

4.2 Survey Findings

AI-enhanced instruction increased learners' confidence in grammar usage.

Students reported that instant feedback helped them recognize and correct mistakes.

4.3 Teacher Feedback

Teachers found AI integration supportive but emphasized the need for training to exploit AI tools effectively.

The results indicate that AI tools integrated into the PPP model provide more effective grammar instruction and enhance student-centred learning. It supports individualized feedback, active engagement, and better retention of grammatical structures. The methodology can be adapted for secondary education across various context. However, challenges include the need for teacher training and digital resources.

Discussions

The purpose of this study was to examine the effectiveness of integrating Artificial Intelligence (AI) tools into the Presentation–Practice–Production (PPP) model for teaching English grammar. The findings indicate that the combination of a structured pedagogical model with intelligent technological support leads to noticeable improvements in learners' grammatical accuracy, engagement, and confidence. Compared with learners who received conventional PPP-based instruction, those exposed to AI-supported instruction demonstrated more consistent progress and greater independence in grammar use.

One of the most significant outcomes of the study relates to the Practice stage of the PPP model. In traditional grammar instruction, practice activities are often limited by time constraints and the teacher's ability to provide individualized feedback. The integration of AI tools addressed this limitation by offering immediate and personalized responses to learner input. Through continuous interaction with AI-based grammar support, learners were able to identify recurring errors, revise their output, and internalize grammatical patterns more effectively. This process encouraged reflective learning and strengthened learners' ability to monitor their own language use. The Production stage also benefited substantially from AI integration. Learners were provided with opportunities to apply grammatical structures in meaningful communicative tasks supported by AI tools. These tools created a low-anxiety environment in which learners felt more comfortable experimenting with language. As a result, learners demonstrated increased willingness to use newly acquired grammar forms in writing and simulated communication, which contributed to improved fluency and accuracy. This suggests that AI-enhanced production activities can successfully bridge the gap between grammatical knowledge and practical language use.

Another important aspect revealed by the findings is the positive effect of AI integration on learner motivation. Grammar instruction, which is often perceived as difficult or repetitive, became more engaging when learners interacted with AI tools that adapted to their individual needs. Students reported a greater sense of control over their learning process and expressed higher levels of interest in grammar activities. This increased motivation likely contributed to improved learning outcomes. Despite these advantages, the study also highlights several challenges that must be considered. Effective implementation of AI-supported grammar instruction requires teachers to possess adequate digital and pedagogical competence. Without appropriate training, there is a risk that AI tools may be used mechanically rather than strategically. In addition, unequal access to technological resources may limit the

applicability of AI-enhanced instruction in certain educational contexts. These challenges emphasize the importance of institutional support and professional development.

Overall, the findings suggest that while the PPP model remains an effective instructional framework, its impact is significantly enhanced when supported by AI tools that promote individualized learning, immediate feedback, and learner autonomy.

Conclusion

This study explored the potential of improving English grammar teaching through the integration of Artificial Intelligence tools within the Presentation–Practice–Production (PPP) model. Based on the results, it can be concluded that the AI-enhanced PPP approach is more effective than traditional grammar teaching methods in promoting grammatical accuracy, learner engagement, and autonomous learning. The findings demonstrate that AI tools complement each stage of the PPP model in meaningful ways. During the presentation stage, AI-supported explanations and examples contributed to clearer understanding of grammatical structures. In the practice stage, immediate and personalized feedback enabled learners to recognize and correct errors efficiently. During the production stage, AI-facilitated communicative tasks encouraged learners to apply grammar knowledge in realistic contexts, leading to improved confidence and language performance.

An important conclusion of this study is that Artificial Intelligence should be regarded as a pedagogical support system rather than a substitute for teachers. The teacher's role remains central in designing instructional tasks, guiding learners, and ensuring that AI tools are used ethically and purposefully. When integrated thoughtfully, AI enhances instructional quality and allows teachers to focus more on higher-level pedagogical decision-making.

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