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Original Paper

Teaching Design of AI-Enabling Junior High School English Instruction under the POA Model

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Abstract

With the advancement of digital transformation of education, artificial intelligence provides technical support for the innovation of foreign language education model. However, there is still a problem of "separation of learning and application" in junior high school English teaching. In order to solve this problem, the Production-Oriented Approach came into being. This teaching method provides an effective pathway to realize the integration of learning and application. However, for front-line teachers, the application of POA in front-line teaching faces many difficulties, such as being time-consuming and laborious, and puts forward higher requirements for teachers' personal teaching design ability and knowledge reserve. Based on this, this paper takes Unit 3 "A Helping Hand" from the FLTRP eighth-grade textbook as an example, constructs the POA teaching design framework under AI empowerment, embeds the generative artificial intelligence into the three key phases "motivating, enabling, and assessing" and explores the classroom implementation path under the support of human-machine collaboration. The research shows that AI has significant advantages in the creation of communicative situations, the support of language resources and the optimization of evaluation feedback, which enhances teachers' design efficiency and improves students' language application skills. This paper also provides an operational design paradigm for AI-supported POA teaching practice.

Keywords

production-oriented approach, artificial intelligence, teaching design, junior English teaching

1. Introduction

The "Compulsory Education English Curriculum Standards (2022 Edition)" proposes to practice the English learning activity concept of "combination of learning and thinking, and creation-oriented," emphasizing the application and transfer of language knowledge in real situations and promoting the

development of core literacy (Ministry of Education of the People ' s Republic of China, 2022). However, in current junior high school English classroom practices, there is still a clear gap between language learning and practical application, that is, the problem of "separation of learning and application" (Wen, 2015). In view of the above problems, Wen Qiufang proposed the Production-Oriented Approach (POA) based on the actual situation of Chinese learners. As a theoretical framework and practical path with Chinese characteristics, POA constructs a three-stage teaching process consisting of "motivating, enabling, and assessing," which can realize the seamless connection between input learning and output application. Many studies have shown that compared with traditional teaching methods, POA teaching can effectively improve students' comprehensive language use ability and learning motivation, help students obtain positive emotional experience, and improve students' academic performance and teaching effect (Zhang, 2017; Yang, 2018; Hu, 2025; Huo & Deng, 2023).

Although POA has demonstrated positive effects both in theory and actual practice, for frontline teachers, how to apply POA to authentic English teaching is still a challenging question. The relevant implementation process consumes a significant amount of time and energy from teachers, increasing their teaching design burden. Also, POA places extremely high demands on teachers' resources and instructional design capabilities, thereby limiting its widespread adoption in junior high school English education to some extent.

In April 2026, the Ministry of Education and four other departments issued the "Artificial Intelligence + Education Action Plan," which clearly proposed to give full play to the engine role of artificial intelligence in empowering education reform, and promote the integration of intelligent technology and education, the whole process and the whole scene coverage. With the advancement of digital transformation of education, in the era of digital intelligence, the development of generative artificial intelligence can provide a new support path for POA teaching. AI can not only assist teachers in teaching design and generation of teaching materials, but also provide strong support in text analysis, personalized feedback and so on. However, most of the existing studies focus on college or senior high school English teaching. Nowadays, existing research have primarily focused on university or high school English teaching (Li, 2024; Qiu, 2025; Zhang, 2025; Zhang, 2020; Yuan, Tang, & Zheng, 2026), lack of AI-enabled POA instructional design and practical case studies for junior high school.

Based on this, this study takes Unit 3 "A Helping Hand" from the Foreign Language Teaching and Research Press edition of the eighth-grade first semester textbook as an example to construct a POA instructional design framework under AI empowerment, and explore how generative artificial intelligence can be integrated into the "motivating, enabling, and assessing" process, creating the efficient authentic communicative scenarios through human-machine collaboration. AI will also be used to assist in generating productive tasks and selecting language enabling targets. Under the framework of "teacher-student collaborative assessment," AI is used for learning situation analysis, foci selection and personalized feedback, so as to form a "human-machine collaborative" teaching closed-loop. Eventually, this method can improve the efficiency of junior high school English POA

teaching and students' English core competency, so as to provide operable design path and case reference for POA teaching practice empowered by AI.

2. Literature Review

2.1 Definition of the Production-Oriented Approach (POA)

The Production-Oriented Approach (POA) is a theoretical system with Chinese characteristics proposed by Chinese foreign language scholar Professor Wen Qiufang and his team. After several years of continuous development and refinement, scholars formulated and supplemented the design standards for all aspects of the POA theory, forming a more mature system architecture (Wen, 2016; Wen, 2017; Wen, 2017; Wen, 2018; Qiu, 2020; Sun, 2020; Wen & Sun, 2020). The teaching process primarily consists of three stages: motivating, enabling, and assessing. In the motivating stage, teachers need to present a scene with communicative authenticity, including four elements of "topic, purpose, identity, and context". Students first try to produce and find their own shortcomings, so as to stimulate learning motivation and clarify the output objectives. In the enabling stage, teachers provide targeted input materials according to the output objectives, design step-by-step activities, guide students to carry out selective learning and practice, and build scaffolding for students to complete the output tasks. It is necessary to follow the principles of precision, graduality and diversity to determine whether the facilitating activities are effective (Qiu, 2017). In the assessing stage, POA advocates for "Teacher-Student Collaborative Assessment"(TSCA), which aims to achieve "learning by assessment" and ensure the effectiveness of TSCA based on the principles of typicality, graduality and teachability (Qiu, 2017).

2.2 Application of AI in English Teaching

Generative artificial intelligence, especially the big language model represented by ChatGPT, has a significant impact on foreign language teaching and is potentially changing the educational landscape (Kong, 2024). In the early stage, when AI technology was not yet mature, the application of AI in foreign language teaching mostly stayed on the surface, such as automatic grammar examination, speech recognition, question bank generation and so on. However, as large language models have continued to evolve and improve, AI is no longer limited to teaching as a simple tool, but can deeply participate in teaching interaction. Xu and Zhao (2024) extracted three core roles of the big language model in English teaching practice. AI can be used as a language advisor, a language partner, and a language assessment specialist, providing students or teachers with language knowledge, assisting users in completing language communication tasks, and analyzing and evaluating students' relevant language performance. In addition, AI can enable the whole process of teaching implementation and greatly reduce the burden of teachers on resource generation and activity design. By inputting prompts, teachers can quickly generate a variety of teaching scenarios that fit the theme, comparative texts in different contexts, structured language exercises, and even complete teaching case scripts (Xu & Zhao, 2024). Liu et al. (2025) further proposed the integrated teaching-learning-assessment model based on

AI listening and speaking classroom, and found that the high-intensity application of this model can significantly improve students' listening and speaking ability, and improve students' interest and self-confidence in learning (Liu, Hu, Liu, Li, Zou & Wei, 2025).

Some teachers have applied generative artificial intelligence to various stages of the production-oriented approach, which significantly improves the efficiency of applying POA, reduces the burden of using POA, and improves the teaching effect. Zhang (2025) utilized AI reverse method to determine the teaching focus of textbooks in POA teaching, and used AI to generate practical cases and corresponding practice activities, which effectively improved the teaching effect. During the assessment phase, AI can quickly review the initial drafts of the whole class, help teachers determine the evaluation focus and screen typical samples through evaluation and analysis, so as to increase the efficiency and objectivity of "teacher-student collaborative assessment" (TSCA). Qiu (2025) put forward the "AI-enabled POA-enabled teaching model," giving full play to the multi-directional interaction between "teacher-student-textbook" and AI, solving the problems of traditional motivating, and building a classroom of "co-construction intelligence," "generative interaction" and "personalized support."

In summary, the existing research is carried out from the two levels of POA teaching practice and AI technology application. Both of them have made some progress, but the integration of the two is still in the preliminary exploration stage. At the same time, the current research on the application of AI to the POA primarily focuses on the university and high school stages, and the application research in the junior high school English classroom context is still relatively insufficient. Therefore, this paper focuses on the junior high school English stage, and systematically discusses the implementation path of AI in each teaching link under the framework of POA theory, in order to provide a practical and feasible reference scheme for the application of cutting-edge theory in front-line teaching.

3. The Practical Design of AI-Enabling English Teaching in Junior High Schools under the POA Model

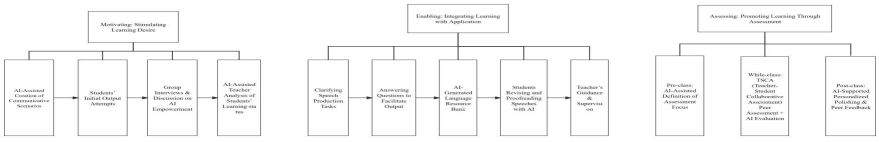

Figure 1. Teaching Process Design Diagram

As illustrated in Figure 1, this teaching design is based on the theory of POA, and focuses on the three core links of "motivating-enabling-assessing". Under this framework, artificial intelligence (AI) is introduced to support task design and learning assessment. Taking the article "A helping hand" as the theme, through the task-driven and evaluation stage of AI empowerment, it aims to realize the combination of language learning and language use.

3.1 The Motivating Stage of AI-Empowered Teaching

Different from traditional foreign language teaching, in the POA system, the motivating phase is not equivalent to the lead-in stage. The objective of motivating is not to enable students to better learn English texts and prepare them for inputting linguistic knowledge, but to stimulate students' desire to produce, so that students can produce first and find their own shortcomings, so as to actively increase the enthusiasm of learning. There are three main steps in this stage: first, the teacher presents the communicative scene; secondly, students try to produce; finally, the teacher explains the teaching objectives and output tasks. However, for junior high school front-line teachers, it is difficult and time-consuming to create a communication scene that contains four elements: specific topic, clear purpose, specific identity and real occasion, which is easy to cause teaching burden. Then teachers can input teaching materials and four elements into AI, use AI to efficiently produce or generate a variety of teaching scene designs, and select the most suitable design for learning situation for practical teaching.

After inputting teaching materials and instructions into the AI (the prompt was as follows: "I am a junior high school English teacher. Please help me use the Production-Oriented Approach (POA) to create a communicative setting that includes specific topics, clear objectives, concrete identities, and authentic contexts, suitable for my students (junior high school eighth-grade students). The content should not be too difficult and should be practical. The topic should be closely related to the input materials from this lesson. The objective is to clarify my personal views. The identities of the outputter and the audience are clearly defined, and the context is authentic and close to students' lives.") AI can promptly generate a communicative scenario aligned with the text's theme "A Helping Hand"—using technological innovation to assist others. After being filtered and refined, the final context created was: "You are a participant in the International Youth Science and Technology Innovation Competition (Tech for Youth: Innovate for a Better Life). Now, you need to work in groups to conduct research on your innovative product, interview others, identify problems in their lives, and consider what kind of scientific and technological innovation product should be invented. Initially, sketch out how your innovation product will serve your interview subject. Conduct an English group discussion." The communicative scenario provided by the AI includes all four elements of topic, objective, identity, and context, and addresses the issue of identity being artificial when using English solely for the purpose of communication. The processes of interviewing, discussing, and preparing presentations fully embody the concept of "integration of learning and application," which shows that after certain screening and improvement, teachers can employ AI to create authentic communication scenarios.

In the aforementioned communicative context, students engage in group discussions, attempting to express the issues they identified and potential solutions in English. During the initial in-group English discussions, students often face challenges such as insufficient vocabulary, imprecise expression, and limited sentence structures. As a result, they gradually become aware of their own limitations in language skills. In this process, AI, as a learning scaffold, provides students with the necessary support (generating examples, sorting out ideas, providing tips/feedback when expression is blocked), but it

does not replace students' independent thinking, completing preliminary expression within the scope of understandable difficulty, and fully stimulating students' enthusiasm for learning.

Junior high school English classrooms mostly use large class-size instruction, making it challenging for teachers to guide and monitor every student individually in completing motivating tasks before class. At this time, AI can be used as a teacher's assistant to urge students to complete the driving task before class. With the help and guidance of AI, students upload the tasks assigned by the teacher to the smart classroom platform, first ensuring that students complete the corpus output. After completing the situational tasks, AI analyzes and summarizes the problems in the student group discussion. Subsequently, teachers collect the common problems and errors of all students after AI analysis, so as to better understand the learning situation and achieve a closed loop in the teaching-motivating stage and lay the foundation for the following phases.

3.2 The Enabling Stage of AI-Empowered Teaching

As the core part of POA teaching process, the facilitation stage aims to realize "integration of learning and application," and its effectiveness will directly determine the success of POA teaching. This section carries out the instructional design of "A teaching hand" from the perspective of focusing on language promotion, integrates AI, students and teachers, effectively improves students' language productive ability, gives full play to the multi-directional interaction among "teachers," "students," "teaching materials" and AI, and gets rid of the traditional promotion dilemma.

3.2.1 Clarifying the Productive Tasks

During the motivating phase, students have completed interview tasks and group discussions with the assistance and supervision of AI, essentially achieving the motivating objectives of "discovering problems in life" and "inventing technological innovation products that serve the interview subjects" followed by English discussions. Based on this, the teacher clarified the production requirements for this enabling phase: "Each group, representing participants in the 'Tech for Youth: Innovate for a Better Life' international youth scientific and technological innovation competition, will deliver a 2-minute English project proposal speech at the class 'project preliminary selection meeting.' The speech must clearly explain the problems you have identified, the innovative products you have designed, and how they will help the target audience." Each group should be tasked with preparing their speeches individually and deepen their proposals based on the production generated during the motivating phase. This section began with the four sub-questions of Unit 2, Developing Ideas in the eighth-grade Foreign Language Teaching and Research Press English textbook. Through the process of "selecting, adapting, and modifying" the existing textbook materials, teachers enable students to answer these four questions on the basis of their initial production from the motivating phase. The four questions are as follows.

1) What everyday problem do you find through your interview?
2) How does the problem trouble them?
3) What invention could solve them?(Be creative! You should be as imaginative as you want.)
4) How does the invention work?

In the stage, teachers can introduce AI as a core motivating tool to generate a language database, helping students improve their speeches and enhance their language expression.

3.2.2 Filter Language Enabling Items

After clarifying the productive goals and tasks, teachers urge students to learn about the input material "A helping hand" During this process, the teacher assigns the following tasks: "In order to prepare for the speech 'Tech for Youth: Innovate for a Better Life,' what core expressions do we need to master? What language expressions can we learn that are beneficial to our speech through the text? " Guide students to explore the language expression in the text "A Helping Hand" that is beneficial to the productive task independently through questions. Then, the teacher inputs teaching materials to AI and gives instructions: "Please generate an English expression resource library based on the story of inventor Easton helping others in the text "A Helping Hand" and around the speech task of "recommending a technology that can help others to classmates and explaining the reasons." Please arrange according to the following four categories, and provide 3-5 high-frequency and practical vocabulary, phrase or sentence pattern templates for each category:

(1) Describe a problem that needs to be solved now;

(2) Propose a solution or idea;

(3) Explain the benefits or positive impact of the program;

(4) Issue a call or initiative."

After the teacher gives instructions, AI quickly generates a well-structured and rich language database as required. Subsequently, the teacher will project the generated list, organize students to negotiate and screen, let students consciously participate in class discussion, choose language items that are adapted to their own language expression habits, and accumulate and internalize knowledge. On the basis of language database generated by AI, students write their own speeches. When encountering difficulties, they can communicate and ask questions with AI in real time to realize personalized support. However, it should be noted that this process still needs teachers' supervision to avoid the situation that students completely rely on AI to complete speech writing. Eventually, AI evaluates, modifies and improves each student's speech, corrects mistakes, and assists students to further polish the manuscript.

3.3 The Assessing Stage of AI-Empowered Teaching

The assessing stage is the key to POA teaching closed loop. It is the characteristic of POA teaching method to explicitly incorporate the assessing stage into the teaching system, which is very important for students to evaluate their production in time, and the core lies in "promoting learning by evaluation". Under the traditional teaching mode, teachers need to review the first draft of the whole class alone to determine the focus of evaluation, which is time-consuming and labor-intensive and easily influenced by subjectivity. This section incorporates AI evaluation into the TSCA teaching model, covering pre-class, in-class, and post-class stages, providing insights into how to address these challenges and effectively achieve precision, efficiency, and personalization in evaluation.

3.3.1 AI-Empowered Pre-class Preparation

Pre-class preparation is the cornerstone of effective implementation of TSCA. After students submit their production (complete interview tasks and record discussions in groups), teachers' core tasks are to determine evaluation focus and select typical samples. Under the traditional teaching mode, teachers need to rely on personal experience and invest a large amount of energy. The efficient text analysis and processing ability of generative AI can liberate teachers from the heavy preliminary screening work, completely realize scientific decision-making based on data, and assist teachers to determine the assessment foci and select suitable typical samples.

Teachers import the discussion content texts of each group into AI tools (such as ChatGPT, Doubao, Deepseek, etc.) in batches, and give the following instructions: "Please analyze the following dozens of group discussion record texts with the theme of Tech for Youth: Innovate for a Better Life, count the most frequent and universal problem types from three dimensions: content viewpoint, logical structure and language expression, and list them according to priority."

After inputting student data, the AI can quickly complete the analysis and generate a diagnostic report. Once the AI has generated the final results, teachers need to review the AI report and, in conjunction with the core teaching objectives, ultimately determine the assessment foci of this lesson. This ensures that the assessment foci stem from the student authentic data and truly possesses "representativeness" (the issues and errors made cover most students) and "teachability" (the problems and errors can be amended within the course).

3.3.2 AI-Empowered In-class Implementation

In-class implementation is the core component of the TSCA framework, which emphasizes that under teacher guidance, students learn assessing methods through cooperative evaluation of typical samples. In the classroom, AI can present the assessment foci, so that students can identify problems, and teachers need to present typical samples screened by AI. In independent assessment and group discussion, students can use AI as an instant query tool at any time to actively learn in inquiry. For the assessment foci, the teacher's explanation can be combined with AI demonstration. AI can be used as a writing assistant when student groups work together to modify samples. Students can also input the modified sentences into AI and request optimization. By comparing and discussing AI modification suggestions, students can deepen their understanding of targeted language forms. After summarizing the modification strategy, teachers can employ AI to quickly generate targeted consolidation exercises and immediately put them into the whole-class to realize the closed loop of "evaluation-explain-practice". Simultaneously, AI can also deliver differentiated exercises for students with different problem types according to pre-class analysis, and initially realize personalized consolidation.

3.3.3 AI-Empowered After-Class Extension

After-class activities are the extension and guarantee of the TSCA. Teachers can use AI in after-class assessment to provide students with continuous and personalized support, and assist teachers in

macro-learning tracing. In this process, students revise their speeches according to the assessing criteria reached in class, and ask AI at any time when they encounter problems in the revision process. After revision, students input the revised speeches and speech videos to AI, and AI provides targeted feedback to help students focus on core issues. In the process of peer assessment, both parties can use the "Mutual Assessment Prompt List" generated by AI to fully improve the structure and objectivity of mutual evaluation. Students can also find their own problems, learn from others' advantages and reflect on their own shortcomings during mutual evaluation. Finally, students submit the final draft and speech video to the platform with AI correction function, and get instant evaluation (language form rating and feedback). Instead of reviewing all the articles word by word and watching each student's speech video, teachers can make final evaluation based on the learning situation report generated by AI to fully improve the assessment efficiency, show excellent cases in the next class, focus on explaining stubborn mistakes and form a closed loop of teaching.

4. Conclusion

Based on the Production-Oriented Approach (POA), this study has constructed a framework of AI-empowered instructional design for junior high school English teaching. It also demonstrates the application of generative artificial intelligence in each link of "motivating, enabling, and assessing" through specific teaching cases. To a certain extent, the research responds to the practical challenges faced by traditional POA in junior high school classroom implementation, and provides a feasible design scheme for realizing "integration of learning and application." However, there are still some limitations in this design. Firstly, the focus of this paper is primarily on teaching design, and does not carry out practical tests and data analysis. It is hoped that some teachers will apply this teaching framework in practice to improve teaching efficiency and explore better paths for developing students' core competencies. Secondly, the effective application of AI places higher demands on teachers' "human-AI interactive negotiation competence". Therefore, it is necessary for teachers to enhance their own intellectual qualities and skills. Additionally, teachers must play a role in monitoring and guiding the entire teaching process, positively and actively influence students' proper usage of AI, and prevent students from being lazy, avoiding AI fully replacing student thinking, and being cautious of the "homogenization" of students' language expression.

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