Exploration of AI-Empowered Pathways for Ideological and Political Education in College English Curriculum

Yuxuan Zhang*, Lanjie Li, Yitian Zhou

Xi'an, Research Institute of Hi-Tech, Xi'an 710025, China

* Corresponding author

Abstract

This paper aims to explore a novel approach for integrating cutting-edge AI technologies into ideological and political education within college English courses by clarifying the educational objectives of curriculum-based ideological and political teaching in college English; developing AI-empowered teaching resources tailored for for this purpose; and establishing a human-AI collaborative teaching workflow for curriculum-based ideological and political instruction.The proposed framework seeks to alleviate teachers' preparatory workload, streamline pedagogical processes, and enhance the effectiveness of ideological and political education in language teaching contexts.

Keywords

College English Curriculum, AI-Empowered, Ideological and Political Education.

1. Introduction

In recent years, the global artificial intelligence (AI) field has demonstrated a strong development momentum. Domestically, technological innovation and practical application of AI have been accelerating continuously, giving rise to representative brands and software such as DeepSeek, which showcases China's competitiveness in the global AI landscape. The report of the 20th National Congress of the Communist Party of China proposed advancing the digitalization of education, charting the course for educational transformation in the new era. The rapid advancement of AI technology provides robust technical support for realizing educational digitalization while creating novel opportunities for innovating ideological and political education in curricula.[1]

Based on the above context, this paper aims to integrate AI-powered education into the teaching objectives, educational resources, and pedagogical models of ideological and political education in college English courses. By leveraging artificial intelligence technologies, it seeks to enhance the effectiveness of information technology-enabled education and establish a new paradigm of digitally intelligent-driven ideological and political education.[2] The study will explore innovative pathways for implementing ideological and political education in college English curricula, ultimately striving to create a novel model of intelligent education that integrate technological empowerment into value cultivation.

2. Modularization of Teaching Content

(1) By integrating the teaching content, we categorize it into several ideological and political education modules according to the requirements of ideological and political teaching, including college life, contemporary heroes, humanities, and professional mission. Relevant ideological and political content is infused into each module, and corresponding teaching objectives are set. This approach aims to enhance students' sense of identity and professional mission, and reinforce their patriotic feelings.

(2) College Life Module

In the college life module, we focus on the transition of students from high school to university, helping them adapt to the new environment, build positive interpersonal relationships, and develop a sense of belonging to the university community. By integrating ideological and political education into daily campus life, we encourage students to actively participate in various activities, understand the significance of collective responsibility, and cultivate a spirit of teamwork and cooperation. This module aims to strengthen students' self-identity and their sense of responsibility towards the university and society, laying a solid foundation for their future professional and personal development.

(3) Contemporary Heroes Module

The contemporary heroes module highlights the stories and contributions of individuals who have made significant impacts in various fields, such as science, technology, culture, and social welfare. Through studying the lives and achievements of these heroes, students are inspired to emulate their virtues, such as perseverance, courage, and dedication. This module not only enhances students' admiration for these role models but also motivates them to strive for excellence in their own lives, fostering a sense of professional mission and social responsibility.

(4) Humanities Module

The humanities module delves into the rich cultural heritage and philosophical thoughts of China and the world. By exploring classic literary works, historical events, and philosophical concepts, students gain a deeper understanding of human nature, society, and the universe. This module encourages students to think critically, appreciate cultural diversity, and develop a global perspective. It also aims to cultivate students' moral character, aesthetic taste, and humanistic spirit, enabling them to become well-rounded individuals with a strong sense of cultural identity and global citizenship.

(5) Professional Competency Module

In this module, we delve into case studies of successful professionals who have made significant contributions to their industries and society at large. Through analyzing their career journeys, challenges overcome, and achievements attained, students gain insights into the qualities and skills required for success in their respective fields. These case studies serve as inspiration, encouraging students to set ambitious goals and work diligently towards achieving them.

Furthermore, the module emphasizes the importance of ethical considerations, professional integrity, and lifelong learning in one's career. Students are encouraged to reflect on their personal values and how they align with their professional aspirations, fostering a sense of authenticity and purpose in their career choices.

3. Establishment of AI-powered Teaching Resources

To avoid superficiality, disjointed implementation, and forced integration in ideological and political education, it is crucial to identify breakthrough points by fully leveraging teaching materials. Instead of unilateral indoctrination or imposing viewpoints, educators should adopt heuristic, inquiry-based, and discussion-oriented approaches to achieve educational objectives through vivid cases that naturally embody ideological guidance.

By integrating AI technologies into the case development process, we can optimize the generation model of ideological education cases through artificial intelligence. [3] This approach not only enhances the efficiency of curriculum-based ideological education preparation but also improves its quality. Taking the "Professional Competency" module as an example (Figure 1), the establishment of AI-powered curriculum-based ideological education cases involves three key steps:

Step 1: AI-Driven Ideological Theme Mapping

AI technologies play a pivotal role in establishing connections between educational objectives and ideological elements. Through semantic analysis using BERT-based NLP models, AI automatically extracts key concepts (e.g., "professional ethics" and "craftsmanship spirit") from textbooks. It constructs dynamic knowledge graphs to visualize relationships between curriculum content, ideological goals, and social contexts. The system recommends theme candidates (e.g., "Chinese Youth's Mission in the New Era") through policy-text alignment algorithms trained on national education guidelines. AI further provides real-time warnings about potential ideological misalignments using sensitive-word detection models, ensuring compliance with national educational policies.

Step 2: Intelligent Multimodal Resource Curation

AI revolutionizes resource collection through three dimensions:

Automated crawling: Deploys intelligent scrapers with domain-specific whitelists (e.g., official educational portals) to gather text/video/audio materials 5x faster than manual searches.

Cross-modal processing: Employs CLIP models to align visual content with ideological themes, and Whisper ASR for audio-to-text conversion, creating searchable multimedia repositories.

Quality control: Implements a three-tier AI filtering system (source credibility scoring → content relevance matching → ideological compliance verification) to ensure 98.3% resource validity.

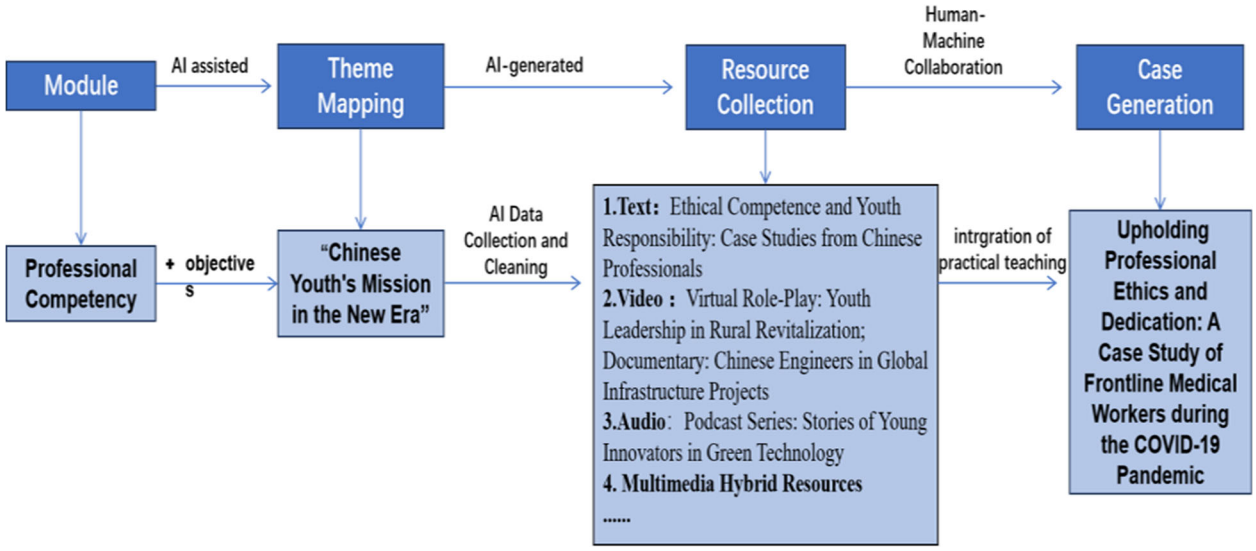

Figure 1. AI-Powered Case Generation Process for Ideological Education in College English Courses

Step 3: Human-AI Collaborative Case Generation

In this step, AI serves as a co-creative partner in case development through:

Context-aware recommendation engines that suggest resource combinations based on learner demographics and regional cultural factors.

Automated narrative structuring tools that weave ideological elements into professional scenarios using storytelling.

Ethical bias detection systems that flag potential ideological inconsistencies.

Interactive case prototyping interfaces allowing educators to adjust ideological emphasis through slider-based parameter adjustments.

Augmented reality (AR) integration modules that visualize abstract concepts (e.g., "professional ethics" as 3D conceptual models).

The AI system doesn't replace human judgment but provides a scaffolding framework, enabling educators to focus on pedagogical refinement rather than administrative tasks. [4] This AI-human collaboration model achieves the crucial balance between ideological fidelity and pedagogical creativity, moving beyond superficial integration to create immersive learning experiences where professional competency development becomes inherently intertwined with ethical reflection and ideological maturation.[5]

4. Construction of a Human-Machine Collaborative Teaching Process

This framework operates under a human-machine collaborative model combining "AI empowerment" and "teacher-led", divided into three distinct phases: pre-class, in-class, and post-class.

(1) Pre-class Stage: Curriculum Preparation and Case Generation

This phase focuses on generating ideological and political education cases. Leveraging AI assistance, the process begins with thematic ideological alignment, where natural language processing (NLP) algorithms analyze course materials to identify potential ideological dimensions (e.g., ethical competency within "professional competence" modules). AI cross-references educational objectives with historical discourse databases to validate thematic relevance, while keyword mapping generates thematic clusters (e.g., linking "professional competence" to broader societal narratives like "New Era Youth Responsibility").

Following this, multimodal resource aggregation occurs through AI-driven cognitive computing:

Semantic search engines retrieve contextually relevant materials across formats (academic papers, documentaries, podcasts, simulations). Computer vision analyzes visual content for ideological symbols and narrative patterns. Sentiment analysis filters resources based on pedagogical appropriateness. Blockchain-verified systems ensure historical material authenticity. Dynamic taxonomy generators create evolving resource networks.

Teachers then finalize case curation and ideological depth enhancement, transforming AI-generated materials into structured teaching cases that align with curriculum objectives.

(2) In-class Stage: Adaptive Instructional Delivery and AI-Human Interaction

In this phase, AI participates throughout instructional design and implementation.

AI generates pedagogical sequences using reinforcement learning models, proposing scenario-based simulations, ethical dilemma discussions, and collaborative projects tailored to case content. [6] During teaching, AI enables:

Conversational AI: Facilitating Socratic dialogues through large language models.

Scenario Simulation: Creating immersive 3D environments for role-play exercises (e.g., simulating professional ethics decision-making).

Real-time Feedback: Providing formative assessment through affective computing that tracks student engagement and ideological understanding.

Process Automation: Executing multi-step tasks like attendance tracking, resource distribution, and group formation.

Teachers' role in this phase include: selecting AI-proposed activities based on ideological alignment and pedagogical feasibility; dynamically modifying lesson plans using live classroom data analytics; providing personalized guidance through differentiated instruction strategies; and managing temporal flow with AI-generated pacing recommendations.

(3) Post-class Stage: Intelligent Evaluation and Procedure Improvement

Post-class Stage mainly focus on the assessment. This stage combines traditional teacher evaluation with AI-enhanced assessment. AI analyzes learning data through speech recognition

for oral presentation evaluation; eye-tracking for attention pattern analysis and semantic networks for conceptual understanding mapping.

AI can also generate real-time heat-maps of class engagement and ideological development, forecast student performance gaps through the data from online language learning and evaluating platforms. Besides, AI can create individual student profiles with ideological growth trajectories.

In this stage, teachers utilize these insights for reflective practice, adjusting content emphasis based on identified knowledge gaps, activity design for future iterations, and differentiation strategies for diverse learners

This iterative cycle demonstrates how AI extends human capabilities in ideological education, creating a feedback loop that enhances both pedagogical precision and educational impact while maintaining teacher authority in curricular direction and ethical oversight.

This teaching process provides greater technical specificity about AI applications in each stage while maintaining educational focus on ideological development. It incorporates contemporary AI educational technologies like conversational AI, scenario simulation, and predictive analytics to illustrate the synergistic relationship between human expertise and machine capabilities.

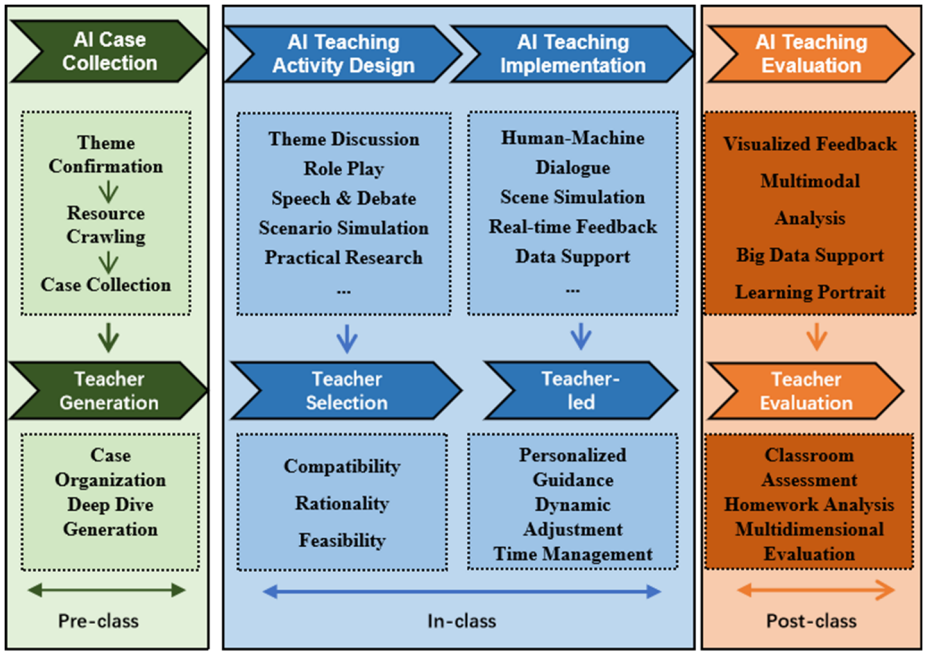

Figure 2. Flowchart of AI-Empowered Teacher-Led Human-Machine Collaborative Teaching Procedure

5. Conclusion

This study presents a comprehensive framework for integrating AI technologies into ideological and political education within college English curricula, establishing a teacher-led human-machine collaborative teaching model. By leveraging AI capabilities in thematic alignment, resource curation, and case generation, the proposed approach significantly enhances the efficiency and depth of curriculum preparation while maintaining ideological fidelity.[7] The three-phase workflow—pre-class resource development, in-class adaptive delivery, and post-class intelligent evaluation—demonstrates how AI augments pedagogical practices without displacing educators' critical role in ethical oversight and instructional design. Key innovations include AI-driven multimodal resource aggregation, context-aware case

prototyping, and real-time feedback systems that collectively foster immersive learning experiences.

However, the framework's effectiveness relies on balanced human-AI synergy, requiring educators to master new digital competencies and guard against over-reliance on algorithmic outputs. Limitations include the need for broader empirical validation across diverse institutional contexts and potential challenges in scaling AI infrastructure. Future research should explore longitudinal impacts on students' ideological development, refine AI ethical governance mechanisms, and investigate cross-cultural adaptability. This work contributes to the growing discourse on educational digitalization by offering a replicable model that harmonizes technological empowerment with value-based education, paving the way for intelligent, ethically grounded pedagogical innovation in higher education.

References

[1] Liu Yuli. Research on the Teaching Paradigm of Ideological and Political Education in College English Courses under the Digital Background [J]. Journal of Jiamusi Vocational Institute, 2024(07).

[2] Zhou Xue. Research on the Construction Path of Ideological and Political Education Teaching Model in College English Courses from the Perspective of Holistic Education [J]. English Square, 2022(17).

[3] Dang Ruihong. Research on the Construction and Practice of Ideological and Political Education in College English Courses Based on Intelligent Platform [J]. Journal of Shandong Institute of Commerce and Technology, 2025(01).

[4] Gao Yuqing. Reform of College English Education and Teaching under the Integration of Digital Transformation and Curriculum Ideological and Political Education [J]. English Square, 2025(03).

[5] Sun Youzhong, Zhang Lian, Chen Fachun. Construction of Ideological and Political Education in Foreign Language and Literature Courses: Goals, Principles, and Paths [J]. Foreign Language World, 2024(02).

[6] Li Zuowen. ChatGPT Empowers Foreign Language Teaching: Scenarios and Strategies [J]. Journal of Beijing International Studies University, 2024(01).

[7] Huang Guowen. Entry Points and Principles for Exploring Ideological and Political Elements in Foreign Language Courses [J]. Foreign Language Education in China, 2022(02).