

Research on the Innovation of College English Teaching Practice Under the Background of AI + Education

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ABSTRACT

With the deep integration of AI technology and education, the paradigm of college English teaching is transforming from tool assistance to ecological reconstruction. This study breaks through the linear thinking of technology application, and focuses on exploring the three-dimensional breakthrough path of English teaching innovation in the intelligent education environment. Firstly, it uses the intelligent hierarchical teaching system to break the dilemma of "standardized output", and construct the dynamic personalized learning graph. Secondly, with the help of immersive multi-modal resource platform, the spatial and temporal barriers of language learning are removed, and the cognitive enhancement from plane input to three-dimensional interaction is realized. Thirdly, it focuses on the cultivation of teachers' intelligent education ability, and facilitate the paradigm shift in the pedagogical relationship from knowledge transfer to intelligent symbiosis. It is found that AI-enabled English teaching innovation needs to go beyond the initial stage of technology superposition to form a synergistic effect in data-driven accurate diagnosis, emotional human-machine collaboration mechanism, cross-cultural digital quality cultivation, and finally build a new teaching mode with both language acquisition rules and intelligent technology characteristics, thus providing a reproducible practice model for the digital transformation of higher education.

KEYWORDS

AI + education; college English teaching; practice innovation; intelligent hierarchical teaching

In the tide of digital transformation of higher education, AI technology is integrating with and reconstructing the language teaching paradigm with unprecedented permeability.

This change presents a double tension in the English subject, which not only breeds the innovation dynamism that breaks the boundaries of traditional classrooms, but also exposes the deep structural contradictions of technology empowering education.

The rigidity of the current English teaching system in terms of knowledge transfer mechanisms and evaluation dimensions is gradually unable to meet the needs of personalized language construction and intercultural dynamic communication ability in the intelligent era. Meanwhile, the educational subjects have widespread cognitive limitations and practical faults in the application of technological tools, which further highlights the urgency of deeply integrating AI and language education.

Based on the theoretical framework of intelligent education ecosystem, this research creatively builds a "three-dimensional linkage" practice model that systematically explores the integration model of the transition mechanism of teachers' digital competence, the incubation path of adaptive learning resources and the human-machine collaborative teaching strategy by deconstructing and reorganizing the intelligent elements in the teaching scene, and strives to explore the practical approach of the paradigm transformation of college English teaching from the dual perspectives of technical philosophy and educational ethics.

1 The Significance of innovating College English Teaching Practice in the Context of AI + Education

AI technology is reshaping the paradigm of college English teaching, and upgrading the traditional classroom of "mass production" to a new ecology of "intelligent customization". Different from the knowledge-feeding teaching method with teachers as the center and the textbooks as boundaries, AI systems capture students' grammar preferences, cognitive blind spots, and interactive trajectories in real time to construct dynamically evolving "digital portraits", and then push differentiated corpora and training programs. This transformation not only breaks through the spatial and temporal barriers of physical classroom, and enables deep learning in fragmented time, but also cultivates the adaptability of cross-cultural communication in the virtual dialogue scene through speech recognition and emotional feedback technology^[1]. The particularly critical is that intelligence continuously optimizes teaching strategies through algorithms, and transforms the English ability cultivation from a standardized assembly line to a personalized growth system, which not only guarantees the internalization of basic language norms, but also reserves flexible space for critical thinking and innovative expression, thus forming a new pattern of intelligent education with dynamic adjustment mechanisms.

2 Current College English Teaching Dilemma

2.1 The Single Teaching Model Is Difficult to Meet Students' Differentiated Learning Needs

The current English classroom at colleges and universities is still fixed in a standardized framework of one-way knowledge transmission, and the teaching process and evaluation system show rigidity, which forces learning groups with vastly different cognitive starting points to experience homogeneous training. When the advanced students are trapped in the repetitive language practice and cannot participate in the critical practice, the students with weak foundation fall into cognitive faults due to the lack of hierarchical guidance, which leads to the structural imbalance of teaching effectiveness in the classroom ecology. In particular, the current teaching model mechanically breaks down language skills into isolated modules, which does not stimulate the active construction through real context, and weakens the flexible space of cultural transfer and cognitive iteration. The "cramming" promotion led by teachers forms a continuous tension between students' personalized cognitive map, which leads to the disconnection of the collaboration between the tool properties of languages and the educational value goals. This mismatch of supply and demand not only exposes the adaptation crisis of the traditional education paradigm, but also reflects the deep paradox between the needs of talent training in the intelligent era and the industrialized teaching logic.

2.2 The Lack of Teachers' Technical Application Ability Restricts the Deep Integration with AI Tools

At present, college English teachers generally face the problem of mismatch between their technology application ability and the AI education needs. On the one hand, teachers lack a systematic cognition of the underlying logic and dynamic development of intelligent technology. For example, they have a vague understanding of core functions such as multi-modal interaction and adaptive learning of AI tools. On the other hand, the use of technology in teaching practice presents the characteristics of "pointillize", which is mostly limited to a single scene such as speech recognition and composition correction, and fails to build a whole-chain integration model that runs through curriculum design, implementation and evaluation. This is because of the fragmentation of technical training. In other words, most teachers only master basic operational skills, but are unable to understand the core of technology from the perspective of pedagogy, and lack the design ability to transform AI tools into personalized teaching schemes^[2]. At the same time, the "technical grafting" method that over depends on preset templates makes human-machine collaboration evolve into mechanical repetition, which not only weakens the leading role of teachers in teaching, but also leads to the dislocation of technology application and language acquisition rules. The disconnection between the tool and the goal reflects the deep contradiction that "human capital" and "technical capital" have not formed an effective coupling in the digital transformation of education.

2.3 The Shallow Integration of AI Tools and Course Content Leads to Fragmented Effects

At present, the application of AI technology in English education scenes is still in the stage of "function embedding", and its characteristics of modular design result in the scattered distribution of technical intervention. In English teaching, most AI tools only mechanically disassemble language elements and conduct single training (such as intelligent grammar correction, and speech recognition and reading). They do not construct a complete cognitive loop of "input-internalization-output", and not form a collaborative cultivation mechanism with the core competencies of the curriculum. The fragmentation of technology empowerment is reflected in three dimensions. At the horizontal level, listening, speaking, reading and writing ability develops separately in the virtual simulation and real context. At the vertical level, high-level goals such as cultural understanding and logical thinking are difficult to achieve due to the lack of intelligent support framework. In practice, teachers are forced to carry out "technology platter"-style integration among multiple platforms, which forces students to struggle with tool switching^[3]. The more important concern is that the interaction between the AI system and the teaching subjects still stays at the surface response, and neither the cognitive trajectory of the students is deeply analyzed nor the personalized ability map is established, resulting in the dilemma of "mechanical and repeated efficiency enhancement, and insufficient qualitative breakthrough" in the application of technology.

3 Innovative Strategies for College English Teaching Practice in the Context of AI + Education

3.1 Construct the Intelligent Hierarchical Teaching Platform to Realize Personalized Learning Path Design

The construction of intelligent hierarchical teaching platform should break through the linear teaching model, and create a personalized learning experience through dynamic assessment and intelligent adaptation. The platform needs to use intelligent diagnostic technology to construct digital portraits of students from three dimensions: language basis,

cognitive characteristics and learning preference, so that the hierarchical standard can break through a single score dimension. In terms of resource architecture, the platform can break down teaching content into modular units that can be freely combined. By analyzing the real-time learning trajectories of students, the platform can intelligently match training materials that meet its ability boundaries, such as pushing interactive grammar trees for students with weak grammar knowledge and customizing thematic debate scenes for students with outstanding critical thinking abilities. The system also needs to introduce a “dynamic cruising” mechanism, so that it can automatically switch training modes when students are detected to be stuck in learning bottlenecks, or stimulate new learning motivations of students through virtual situational tasks^[4]. With the help of the visual management system, teachers can focus on the guidance of creative thinking on the basis of accurately completing the ability assessment by AI, such as designing humanistic thinking workshops for “high-risk students” recommended by the platform, or transforming the writing analysis generated by AI into a personalized writing treatment plan. This dual-drive model of “dynamic paving by intelligent algorithms + lighting the navigation mark by teachers’ wisdom” not only ensures the scientific nature of learning paths, but also retains the humanism of education.

3.2 Strengthen the Training of Teachers’ Ability of AI and Interdisciplinary Collaboration

In the context of the deep integration of AI and education, the professional development of college English teachers should build a three-dimensional competence framework of “cognition-application-creation”, and the training path of teachers should break through the traditional flat mode of technical training, and form a dynamic improvement mechanism of “interweaving tool mastery and humanistic reflection, and the resonance between interdisciplinary and teaching wisdom”. Specifically, the training system should be promoted step by step. At the beginning, situational case analysis should be used to help teachers understand the technical core of intelligent marking systems and virtual simulation platforms to break the cognitive barrier of “technology black box”. In the medium term, it should focus on the reconstruction of teaching scenarios, and guide teachers to transform machine learning tools into personalized writing guidance plans or use interactive AI to develop cross-cultural communication training modules, with a focus on cultivating the ability to transform “technology into teaching”. In the later stage, it should focus on building an interdisciplinary collaboration platform, and build a teaching and research team composed of linguists and data engineers to jointly develop intelligent educational aids that meet the characteristics of second language acquisition. For example, it can develop translation aid systems that can recognize cultural metaphors, or construct adaptive reading engines that can dynamically adjust difficulty. In this process, it is necessary to innovate the “intelligent mentorship” cooperation model, which not only encourages technical experts to guide AI teaching practice on campus, but also establishes an “teaching logic studio” led by English teachers to form a human-machine collaborative education paradigm^[5]. At the same time, it is necessary to establish an ethical review mechanism for the technology application to guide teachers to dialectically approach the assimilation of cognition caused by intelligent recommendations, and clearly define the boundaries between human and machine responsibilities in teaching design. For example, AI should undertake repetitive tasks such as vocabulary reinforcement memory, while teachers focus on cultivating critical thinking ability and guiding cultural values, thus achieving the organic unity of educational technology innovation and humanistic spirit inheritance.

3.3 Develop AI-driven Immersive Course Resources and Whole-process Evaluation System

In the AI-enabled education scenario, the development of immersive course resources should emphasize the collaborative innovation of dynamic generation of context and in-depth interaction of cognition. By integrating mixed reality (MR) technology, universities can build multi-modal and dynamic language learning spaces. For example, in the virtual simulation international academic forum, students need to instantly switch among multiple scenes such as speech, debate, and cross-cultural negotiation, and the grammar structure disassembly module based on augmented reality can concrete language rules into the interactive three-dimensional graph and activate the embodied cognitive potential. In order to construct the whole process evaluation system, it is necessary to break through the traditional linear evaluation framework and adopt a three-dimensional tracking model of “process-performance-emotion”: the speech recognition technology based on deep learning can analyze prosodic features and pragmatic failures in students’ speech flow, and computer vision technology can simultaneously capture anxiety signals in micro-expressions and body language to form multi-channel behavior portraits. On this basis, the adaptive evaluation system marks the development track of individual abilities through a dynamic knowledge pedigree, generates an intelligent diagnostic report including “language acquisition trajectory graph” and “cognitive load fluctuation curve”, and constructs a circular mechanism of “learning iteration-accurate assessment-strategy optimization”, so as to promote the transformation of teaching decision-making from extensive experience-based to intelligent evidence-informed models.

4 Conclusion

The deep integration of AI and education is reshaping the value chain of college English teaching, and its innovation practice has broken through the initial stage of single technology enabling, and built a multi-dimensional intelligent education ecology. This transformation is not a linear progression, but a spiraling cognitive revolution produced in the expansion of cognitive scope caused by intelligent hierarchical teaching, embodied learning inspired by immersive scenes, and the reconstruction of teaching paradigms spawned by human-machine collaboration. Although the detailed adaptation of resource supply and the dynamic feedback of the evaluation system have been achieved in current practice, the tension between technical rationality and educational authenticity still needs to be resolved. It is necessary to guard against the erosion of teachers' and students' subjectivity by algorithmic hegemony, and to prevent the deep rules of language acquisition from being obscured by technological romanticism. Subsequent research should focus on the concept of "intelligent-enhanced education", embed the humanism of educational philosophy in the technical framework, and make AI truly become a "intelligent enzyme" to activate the life of education through the construction of a flexible ethical framework and the cultivation of symbiotic teacher-student relationship.

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References

- [1] Tian Miao. Research on Innovative Practice of College English Teaching in the Era of "Wisdom +" [J]. Journal of Changchun University, 2025,35(02):75-78.
- [2] Liu Yi, Quan Xiaoyan. Research on AI Empowering Innovative Teaching in College English Classrooms [J]. The Theory and Practice of Innovation and Entrepreneurship, 2025,8(04):173-176.
- [3] Yang Yan. Discussion on the Teaching Strategy of College English Audio-visual & Speaking Courses Enabled by Artificial Intelligence [J]. Modern English, 2024,(21):51-53.
- [4] Wang Yu. Construction of College English Teaching Paths from the Perspective of Artificial Intelligence. Overseas English, 2024, (18): 117-118+121.
- [5] You Yunlei. An Analysis of Innovation Strategies for College English Teaching from the Perspective of New Media. English Square, 2024,(26): 79-83.