



Reconceptualizing Foreign Language Education through Artificial Intelligence: Smart Teaching Innovation under the New Liberal Arts

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Abstract

The implementation of China's New Liberal Arts initiative and the rapid development of artificial intelligence (AI) have accelerated the transformation of foreign language education. This paper explores the application of smart teaching in foreign language education under the New Liberal Arts framework. Through literature review and teaching practice, it proposes a smart teaching ecological model integrating digital learning resources, intelligent instructional interaction, personalized learning, and data-driven evaluation. A blended teaching framework is developed to demonstrate how AI-supported smart teaching enhances students' language proficiency, intercultural communicative competence, critical thinking, and autonomous learning. The study also discusses challenges related to teachers' digital competence. The findings suggest that smart teaching represents a comprehensive innovation in educational philosophy, instructional design, and learning evaluation, providing practical implications for the digital transformation and sustainable development of foreign language education.

Subject Areas

Language Education

Keywords

New Liberal Arts, Smart Teaching, Foreign Language Education, Artificial Intelligence, Blended Learning

1. Introduction

The accelerating development of digital technologies has profoundly reshaped

higher education worldwide. Emerging technologies such as artificial intelligence (AI), cloud computing, big data, virtual reality, and learning analytics are continuously transforming teaching methodologies, learning environments, and educational governance. Rather than serving merely as instructional tools, these technologies are redefining educational philosophy by emphasizing learner-centered instruction, personalized learning, and evidence-based teaching decisions. Against this backdrop, universities are actively exploring innovative teaching models capable of meeting the demands of digital transformation and cultivating graduates with interdisciplinary competence and global competitiveness.

In China, the implementation of the New Liberal Arts initiative has further accelerated the modernization of humanities education. Unlike traditional liberal arts education, the New Liberal Arts advocates the deep integration of humanities, social sciences, information technology, and emerging interdisciplinary knowledge. It emphasizes cultivating innovative talents equipped with solid disciplinary knowledge, intercultural communication competence, digital literacy, critical thinking, and social responsibility. Foreign language education, as an essential component of liberal arts education, therefore faces unprecedented opportunities as well as significant challenges. English majors are expected not only to master linguistic knowledge and communicative skills but also to demonstrate intercultural awareness, international vision, academic inquiry ability, and the capacity to respond to complex global issues.

Nevertheless, conventional foreign language teaching remains largely teacher-centered and examination-oriented. Classroom instruction often focuses on vocabulary acquisition, grammatical analysis, translation exercises, and standardized testing, while relatively little attention is paid to students' higher-order thinking, collaborative learning, creativity, or autonomous learning ability. Such instructional approaches are increasingly unable to satisfy the educational objectives proposed by the New Liberal Arts, which require students to integrate language competence with disciplinary knowledge, technological literacy, and intercultural understanding.

The emergence of smart teaching provides new possibilities for addressing these limitations. Smart teaching refers to an educational paradigm that integrates digital technologies, intelligent learning platforms, data analytics, and artificial intelligence into the entire teaching process. Unlike simple online teaching or multimedia-assisted instruction, smart teaching emphasizes dynamic interaction between teachers, students, and intelligent learning systems. Through continuous collection and analysis of learning data, teachers are able to identify students' learning characteristics, monitor learning progress, and provide timely personalized guidance. Meanwhile, students gain greater flexibility in learning through diversified digital resources, adaptive learning systems, collaborative platforms, and intelligent assessment tools.

Recent breakthroughs in generative artificial intelligence, represented by large language models such as ChatGPT and DeepSeek, have further expanded the pos-

sibilities of smart foreign language education. AI-assisted writing evaluation, automatic feedback generation, intelligent dialogue simulation, personalized reading recommendations, and multilingual translation support are gradually becoming integral components of foreign language teaching. When appropriately designed and pedagogically guided, these technologies can effectively improve students' language proficiency, learning motivation, and critical thinking while reducing teachers' repetitive workload and enhancing instructional efficiency.

Despite these developments, current research on smart teaching in foreign language education still presents several limitations. Existing studies often focus primarily on technological applications while paying insufficient attention to instructional design, curriculum integration, and sustainable teaching reform. Moreover, empirical discussions on how smart teaching can effectively support the educational objectives of the New Liberal Arts remain relatively limited. Questions concerning the integration of AI technologies into language teaching, the construction of intelligent learning ecosystems, and the cultivation of students' comprehensive competencies deserve further exploration.

Therefore, this study aims to investigate the innovation and practical implementation of smart teaching in foreign language education under the New Liberal Arts framework. Specifically, the paper seeks to address three research questions:

- 1) How can smart teaching promote the transformation of foreign language education under the New Liberal Arts?
- 2) What are the essential components of a smart teaching ecological model for foreign language education?
- 3) How can intelligent technologies effectively support personalized learning, teaching evaluation, and competency development in foreign language classrooms?

To answer these questions, this paper combines literature review with teaching practice to construct a smart teaching framework characterized by digitalized teaching resources, interactive learning environments, personalized learning support, and continuous teaching reflection. It is hoped that the findings will contribute both theoretically and practically to the ongoing digital transformation of foreign language education.

2. Literature Review

2.1. New Liberal Arts and the Transformation of Foreign Language Education

The concept of New Liberal Arts has emerged as one of the most influential educational reforms in China in recent years. Unlike traditional liberal arts education, which primarily emphasizes disciplinary knowledge and language proficiency, New Liberal Arts advocates the integration of humanities, social sciences, emerging technologies, and interdisciplinary knowledge. It aims to cultivate graduates who possess global perspectives, innovative thinking, digital competence, intercultural communication abilities, and strong social responsibility.

For foreign language education, this reform represents a fundamental transformation of educational objectives. English majors are no longer expected to become merely language users or translators. Instead, they are required to function as interdisciplinary professionals capable of communicating across cultures, interpreting global issues, participating in international cooperation, and applying language skills in increasingly complex professional contexts. Consequently, foreign language curricula are gradually shifting from language-centered instruction toward competence-oriented education.

George Anders (2017) argues that future professionals will succeed not because they possess isolated technical knowledge but because they combine humanistic thinking with technological competence [1]. Communication skills, creativity, empathy, and interdisciplinary collaboration have become increasingly valuable in the digital economy. His perspective provides important theoretical support for integrating information technology into liberal arts education.

Chinese scholars have also emphasized the necessity of educational transformation under the New Liberal Arts initiative. Wang Ning (2020) maintains that foreign language disciplines should strengthen interdisciplinary integration while enhancing students' international communication competence and cultural confidence [2]. Wu Yan (2019) and Guo Yingjian (2020) further point out that educational innovation should integrate language learning with literature, history, politics, economics, and digital technology to cultivate high-quality international talents capable of addressing global challenges [3] [4].

These perspectives collectively suggest that foreign language education should move beyond traditional linguistic training and become an important platform for cultivating interdisciplinary talents equipped with language competence, digital literacy, critical thinking, and cultural awareness.

2.2. Smart Teaching and Artificial Intelligence in Higher Education

The rapid development of digital technologies has significantly accelerated the transformation of higher education. Smart teaching has gradually evolved from simple multimedia-assisted instruction into an intelligent educational ecosystem supported by artificial intelligence, cloud computing, big data, and learning analytics.

Smart teaching is generally understood as a learner-centered instructional model that employs intelligent technologies to optimize teaching design, classroom interaction, learning assessment, and educational management. Compared with traditional classrooms, smart teaching emphasizes real-time interaction, personalized learning, adaptive resource allocation, and evidence-based instructional decision-making.

Learning analytics plays a particularly important role in this process. Through continuous collection and analysis of learners' behavioral data, intelligent learning platforms can identify students' learning preferences, monitor learning progress,

predict learning difficulties, and provide personalized instructional recommendations. Teachers can therefore make more informed pedagogical decisions based on objective learning evidence rather than solely relying on classroom observation or examination results.

More recently, the emergence of generative artificial intelligence has introduced new possibilities for foreign language education. Large language models represented by ChatGPT and DeepSeek have demonstrated remarkable capabilities in natural language understanding, text generation, automatic feedback, dialogue simulation, translation assistance, and writing evaluation. These technologies allow students to engage in authentic language practice beyond classroom limitations while providing teachers with efficient tools for instructional design and formative assessment.

However, researchers also caution that artificial intelligence should function as an educational assistant rather than a replacement for teachers. Human guidance remains indispensable in developing learners' critical thinking, intercultural sensitivity, ethical awareness, and emotional engagement [5]. Therefore, effective smart teaching requires a balanced integration of technological innovation and sound pedagogical principles.

2.3. Theoretical Foundations of Smart Teaching

The development of smart teaching is supported by several influential educational theories that provide guidance for instructional design and technology integration.

Constructivism

Constructivist learning theory argues that knowledge is actively constructed through learners' interaction with their environment rather than passively transmitted by teachers. Learning occurs most effectively when students participate in authentic tasks, collaborative inquiry, and problem-solving activities.

From this perspective, smart teaching provides abundant opportunities for learners to construct knowledge independently through online discussions, project-based learning, multimedia resources, and collaborative digital platforms. Teachers gradually shift from knowledge transmitters to learning facilitators who organize meaningful learning experiences and provide timely instructional support.

Connectivism

Connectivism, proposed by George Siemens (2005), has become one of the representative learning theories for the digital age. It emphasizes that knowledge exists within networks rather than individuals and that learning involves establishing meaningful connections among people, information resources, and technological systems [6].

In smart teaching environments, students continuously access digital resources, online communities, intelligent learning platforms, and artificial intelligence tools. Their learning therefore becomes an ongoing process of information selection, network construction, knowledge sharing, and collaborative innovation.

This theory provides an important explanation for why digital learning environments can effectively support lifelong learning.

TPACK Framework

The Technological Pedagogical Content Knowledge (TPACK) framework by Mishra and Koehler (2006) proposes that effective teaching requires the integration of three forms of knowledge: content knowledge, pedagogical knowledge, and technological knowledge [7].

For foreign language teachers, technological competence alone is insufficient. Teachers must understand how intelligent technologies can meaningfully support language acquisition, intercultural communication, collaborative learning, and formative assessment. Therefore, successful smart teaching depends on teachers' ability to integrate technology with curriculum objectives and instructional strategies rather than simply introducing digital tools into classrooms.

SAMR Model

The SAMR model developed by Puentedura explains how educational technologies transform learning through four progressive stages: Substitution, Augmentation, Modification, and Redefinition.

In foreign language education, digital technologies initially substitute traditional learning materials, such as replacing printed textbooks with electronic resources. They subsequently augment learning by providing multimedia support and online interaction. At higher levels, technology fundamentally modifies learning activities through collaborative inquiry, project-based learning, and real-time intelligent feedback. Ultimately, technologies enable entirely new learning experiences, including AI-supported intercultural communication, virtual international collaboration, and intelligent language assessment that would be impossible in traditional classrooms.

The SAMR model therefore offers a practical framework for evaluating the depth of technology integration within smart teaching environments.

2.4. Research Gap

Although previous studies have extensively discussed smart education, educational informatization, and technology-enhanced language learning, several limitations remain.

First, many existing studies focus primarily on introducing educational technologies while paying insufficient attention to instructional design and pedagogical innovation. Technology itself does not automatically improve teaching quality unless it is effectively integrated with curriculum objectives and learning activities.

Second, empirical research concerning the application of generative artificial intelligence in foreign language education remains relatively limited. Current discussions mainly emphasize technological functions such as automatic translation or writing assistance, whereas systematic investigations into AI-supported curriculum design, personalized learning pathways, formative assessment, and competency development are still inadequate.

Third, relatively few studies examine smart teaching from the perspective of the New Liberal Arts. Existing research often discusses educational digitalization and interdisciplinary education separately without establishing an integrated theoretical framework connecting technological innovation, curriculum reform, and talent cultivation.

To address these gaps, the present study proposes a comprehensive smart teaching ecological model that combines educational technologies, artificial intelligence, blended learning, learning analytics, and competency-oriented curriculum design within the broader framework of the New Liberal Arts. Through theoretical analysis and practical implementation, this study aims to provide both conceptual insights and practical guidance for the sustainable transformation of foreign language education.

3. Construction of a Smart Teaching Ecological Model

The integration of artificial intelligence and digital technologies into higher education has fundamentally reshaped the relationship among teachers, students, learning resources, and instructional environments. Smart teaching should therefore be understood not simply as the application of educational technology, but as the construction of an intelligent educational ecosystem that promotes continuous interaction, personalized learning, data-informed decision-making, and sustainable teaching improvement.

Based on the educational objectives of the New Liberal Arts and the theoretical foundations discussed above, this study proposes a Smart Teaching Ecological Model for foreign language education. The model consists of four interrelated dimensions: digitalized learning resources, intelligent instructional interaction, personalized learning support, and data-driven teaching evaluation. These dimensions operate throughout the entire teaching process and collectively support competency-oriented language education.

Unlike traditional teacher-centered classrooms, this ecological model places learners at the center while positioning teachers as instructional designers, learning facilitators, and data-informed decision makers. Artificial intelligence functions as an intelligent assistant that supports resource integration, learning diagnosis, personalized recommendation, and continuous assessment rather than replacing teachers' professional judgment.

3.1. Digitalized Learning Resources

High-quality digital learning resources constitute the foundation of smart teaching. Under New Liberal Arts framework, learning materials should extend beyond conventional textbooks to include multimedia resources, authentic language materials, interdisciplinary knowledge, and real-world communication scenarios.

Teachers may integrate online lectures, digital libraries, podcasts, international news reports, virtual museums, open educational resources, and AI-assisted learning platforms into course design. These diversified resources expose students to

authentic language use while broadening their understanding of global cultures, international affairs, and interdisciplinary knowledge.

Generative AI further enriches learning resources by producing customized reading materials, vocabulary exercises, discussion questions, and writing prompts tailored to different proficiency levels. Instead of relying on standardized teaching materials, teachers can rapidly generate context-specific learning tasks that better satisfy individual learning needs.

Moreover, digital resources facilitate the integration of ideological and political education into foreign language instruction. Authentic bilingual materials concerning China's technological innovation, ecological civilization, international cooperation, and cultural heritage can naturally become language learning resources, enabling students to strengthen both linguistic competence and cultural confidence.

3.2. Intelligent Instructional Interaction

Interaction represents the core characteristic distinguishing smart teaching from traditional classroom instruction. Rather than maintaining one-way knowledge transmission, smart teaching encourages multidimensional interaction among teachers, students, learning platforms, and intelligent systems.

Before class, students complete autonomous learning tasks through online learning platforms. Teachers may upload preview videos, reading materials, vocabulary lists, and AI-generated guiding questions. Learning analytics automatically record students' preparation progress, allowing teachers to identify common learning difficulties before class begins.

During classroom instruction, digital technologies create highly interactive learning environments. Instant polling systems, collaborative whiteboards, mobile response platforms, and AI-assisted discussion tools encourage active student participation. Instead of delivering lengthy lectures, teachers organize collaborative inquiry, problem-solving activities, role-playing, and project presentations that require students to negotiate meaning and apply language in authentic contexts.

Artificial intelligence can also support classroom interaction by providing real-time language assistance. For example, AI-powered dialogue systems enable students to simulate intercultural communication with virtual interlocutors. Pronunciation assessment software offers immediate corrective feedback, while intelligent translation tools facilitate comparative language analysis. Such technologies significantly increase opportunities for meaningful language practice.

After class, interaction continues through online discussion forums, collaborative writing platforms, and intelligent tutoring systems. Students receive continuous feedback from both teachers and AI-supported assessment tools, making learning an ongoing rather than episodic process.

3.3. Personalized Learning Support

Learners differ considerably in language proficiency, cognitive styles, learning motivation, and professional interests. Therefore, personalized learning has be-

come an essential objective of smart teaching.

Supported by learning analytics and artificial intelligence, intelligent learning platforms continuously collect students' learning behaviors, including reading time, assignment completion, quiz performance, classroom participation, and online discussion records. These learning data enable teachers to understand individual learning characteristics more comprehensively.

Based on data analysis, adaptive learning systems recommend personalized learning pathways. Students experiencing learning difficulties receive additional grammar explanations, vocabulary practice, and remedial exercises, while high-achieving students are encouraged to undertake more challenging tasks such as academic presentations, intercultural case analyses, or independent research projects.

Generative AI further strengthens personalized learning by functioning as an intelligent learning companion. Students may consult AI systems to clarify grammatical questions, receive writing suggestions, practice spoken English, or explore cultural topics beyond classroom instruction. Immediate feedback enhances learning autonomy and reduces students' dependence on teachers for routine language support.

Nevertheless, AI-generated feedback should always be critically evaluated. Teachers play an indispensable role in helping students verify information accuracy, identify inappropriate AI-generated content, and cultivate critical digital literacy. Consequently, personalized learning should be viewed as collaborative human-AI learning rather than fully automated instruction.

3.4. Data-Driven Teaching Evaluation and Reflection

Assessment in smart teaching extends beyond traditional summative examinations toward continuous formative evaluation supported by educational data.

Intelligent teaching platforms automatically collect comprehensive learning evidence throughout the semester, including attendance records, classroom participation, assignment quality, collaborative contributions, discussion engagement, and learning trajectories. Rather than evaluating students solely according to final examination scores, teachers obtain multidimensional evidence reflecting students' comprehensive learning performance.

Learning analytics dashboards visualize students' progress and identify potential learning risks at an early stage. Teachers can therefore intervene promptly by adjusting instructional strategies, providing additional learning support, or redesigning classroom activities.

Meanwhile, teaching evaluation also becomes evidence-based. By analyzing classroom interaction frequency, learning resource utilization, student satisfaction, and achievement data, teachers continuously reflect upon instructional effectiveness and optimize course design. This cyclic process of teaching—data collection—reflection—improvement establishes a sustainable mechanism for educational quality enhancement.

Ultimately, the proposed ecological model transforms teaching from experi-

ence-based practice into evidence-informed professional decision-making, thereby improving both instructional quality and learning outcomes.

4. Practical Implementation of Smart Teaching

To illustrate the practical application of the proposed ecological model, this study presents a blended teaching framework implemented in a Comprehensive English course for second-year English majors. The instructional design integrates artificial intelligence, online learning platforms, and face-to-face classroom activities to create a learner-centered smart teaching environment.

4.1. Pre-Class Intelligent Learning

Before each lesson, students complete autonomous learning tasks through the university's learning management system. Teachers upload multimedia resources including lecture videos, vocabulary lists, reading materials, and current international news reports closely related to the course topic.

For example, when studying environmental protection, students are assigned authentic news articles from international media alongside AI-generated vocabulary exercises and guiding questions. Students may also interact with DeepSeek to clarify unfamiliar vocabulary, summarize article content, or compare different cultural perspectives on environmental sustainability.

Learning analytics automatically record students' preparation time, quiz performance, and participation in online discussions. Based on these data, teachers identify common learning difficulties and adjust classroom activities accordingly.

4.2. Interactive Classroom Learning

Classroom instruction emphasizes collaborative inquiry rather than traditional lectures. Students work in small groups to analyze authentic language materials, discuss intercultural issues, and complete project-based learning tasks.

During a unit on global climate governance, for instance, students compare Chinese and international media reports on climate policy. Each group synthesizes information from multiple sources, evaluates differing perspectives, and delivers bilingual presentations supported by digital collaboration platforms.

AI-assisted language tools provide immediate support during classroom activities. Students receive pronunciation feedback, writing suggestions, and vocabulary recommendations while teachers focus on facilitating discussion, encouraging critical thinking, and providing personalized guidance.

This learner-centered approach substantially increases classroom interaction and enables students to apply language skills in meaningful communicative contexts rather than simply memorizing linguistic knowledge.

4.3. Post-Class Learning, Intelligent Assessment, and Continuous Improvement

Post-class learning is an indispensable component of the smart teaching cycle. Un-

like traditional homework assignments that mainly reinforce classroom knowledge, post-class activities in a smart teaching environment emphasize knowledge transfer, reflective learning, collaborative inquiry, and continuous competency development.

Following each classroom session, students participate in project-based learning (PBL) tasks that require them to apply language knowledge to authentic communicative situations. For example, after completing a unit on intercultural communication, student groups are assigned to investigate a current international issue, such as climate change, digital governance, or global public health. They are expected to collect information from multiple English-language sources, evaluate the credibility of different viewpoints, synthesize evidence, and present their findings through bilingual reports, multimedia presentations, or short academic videos.

Artificial intelligence serves as an important learning assistant during this stage. Students may employ AI-supported writing tools to generate preliminary outlines, organize arguments, identify grammatical errors, and receive suggestions for vocabulary improvement. They are also encouraged to compare AI-generated responses with academic sources, thereby strengthening their ability to evaluate information critically rather than accepting machine-generated content uncritically.

Assessment within the smart teaching framework adopts a multidimensional formative evaluation approach. Instead of relying solely on final examinations, students' overall performance is assessed through continuous evidence collected throughout the learning process. Evaluation indicators include online learning engagement, classroom participation, collaborative project performance, reflective journals, oral presentations, peer assessment, and portfolio development.

Learning analytics provide teachers with visualized reports illustrating students' learning trajectories. These reports reveal changes in learning behaviors, participation frequency, assignment completion rates, and competency development over time. Teachers can therefore identify students who require additional academic support while recognizing learners who demonstrate exceptional progress and leadership.

Equally important, teachers engage in systematic teaching reflection based on learning evidence. By analyzing students' feedback, assessment data, classroom interaction records, and learning outcomes, instructors continuously optimize instructional design, adjust teaching strategies, and refine digital resource allocation. Consequently, teaching improvement becomes an ongoing cyclical process rather than an occasional activity conducted after the completion of a course.

5. Challenges and Future Prospects

Although smart teaching has demonstrated considerable potential in transforming foreign language education, its successful implementation still faces multiple challenges that require continuous attention from educators, universities, and policymakers.

5.1. Teachers' Digital Competence

The effectiveness of smart teaching depends largely on teachers' professional competence in integrating educational technologies with sound pedagogical practices. While many university instructors have gradually adopted online teaching platforms and digital resources, the pedagogically meaningful application of artificial intelligence, learning analytics, and adaptive learning systems remains limited.

Teachers are expected to possess not only technological knowledge but also the ability to redesign curricula, facilitate collaborative learning, interpret learning data, and guide students in using AI responsibly. Therefore, systematic professional development programs should emphasize technological knowledge, instructional design, digital assessment, and educational innovation simultaneously.

5.2. Ethical Issues of Artificial Intelligence

The rapid expansion of generative AI introduces significant ethical concerns into higher education. Students increasingly rely on AI-generated essays, translations, summaries, and presentations, raising questions regarding academic integrity, originality, and intellectual independence.

Rather than prohibiting AI usage altogether, universities should establish clear ethical guidelines for responsible AI-assisted learning. Students should be encouraged to use AI as a learning partner that supports idea generation, language practice, and feedback while maintaining independent thinking, academic honesty, and proper citation practices.

Moreover, teachers should design assessment tasks that emphasize critical analysis, creativity, problem-solving, and authentic communication—competencies that cannot easily be replaced by artificial intelligence.

5.3. Data Privacy and Educational Security

Smart teaching relies heavily on educational data generated through learning platforms, intelligent assessment systems, and AI applications. These data often contain students' personal information, learning behaviors, academic performance, and interaction records.

Universities should therefore establish comprehensive data governance policies that ensure information security, privacy protection, and ethical use of educational data. AI systems employed in higher education must comply with legal regulations and institutional standards concerning data collection, storage, processing, and sharing.

Furthermore, transparency should become an important principle of intelligent education. Students have the right to understand how their learning data are collected, analyzed, and utilized in educational decision-making.

5.4. Digital Divide and Educational Equity

Although educational digitalization creates new learning opportunities, unequal access to technological resources remains an important concern. Students from

different socioeconomic backgrounds may experience disparities in internet connectivity, digital devices, AI resources, and technological support.

Educational institutions should therefore promote inclusive digital education by providing equitable access to technological infrastructure, digital learning resources, and technical assistance. Smart teaching should contribute to narrowing educational inequalities rather than creating new forms of digital exclusion.

5.5. Future Development of Smart Foreign Language Education

Looking ahead, smart teaching will evolve beyond technology-assisted instruction toward fully integrated intelligent learning ecosystems. Artificial intelligence, virtual reality, augmented reality, digital twins, and multimodal learning analytics are expected to reshape foreign language education more profoundly.

Future classrooms may support immersive intercultural communication through virtual international collaboration, AI-supported adaptive learning pathways, intelligent competency assessment, and lifelong personalized learning services. Teachers will increasingly assume the roles of learning designers, facilitators, mentors, and ethical supervisors, while intelligent technologies provide routine instructional support and personalized recommendations.

Therefore, the future development of foreign language education depends not on replacing teachers with technology but on achieving effective collaboration between human intelligence and artificial intelligence in cultivating innovative talents with global competence.

6. Conclusions

The implementation of the New Liberal Arts initiative has created unprecedented opportunities for the transformation of foreign language education in China. In response to the growing demands of educational digitalization and interdisciplinary talent cultivation, smart teaching has emerged as an effective instructional paradigm that integrates artificial intelligence, educational technology, and learner-centered pedagogy.

This study examined the theoretical foundations, instructional characteristics, ecological model, and practical implementation of smart teaching in foreign language education. By integrating digital learning resources, intelligent instructional interaction, personalized learning support, and data-driven teaching evaluation, the proposed smart teaching ecological model provides a systematic framework for promoting educational innovation under the New Liberal Arts.

The practical teaching framework presented in this study demonstrates that the effective integration of blended learning, learning analytics, project-based learning, and generative AI can significantly enhance students' language proficiency, intercultural communicative competence, autonomous learning ability, and critical thinking. More importantly, smart teaching facilitates the transition from knowledge transmission to competency-oriented education, thereby aligning foreign language instruction with the broader objectives of interdisciplinary talent

cultivation and educational modernization.

Nevertheless, the successful implementation of smart teaching requires continuous efforts in teacher professional development, technological infrastructure construction, ethical governance of artificial intelligence, and educational policy support. Technology should serve educational objectives rather than dominate instructional practice, and human-centered pedagogy should remain the guiding principle of educational innovation.

Future research may further investigate the long-term impact of AI-supported foreign language learning, evaluate the effectiveness of intelligent teaching models through empirical studies, and explore innovative approaches for integrating emerging technologies into diverse educational contexts. Through sustained exploration and interdisciplinary collaboration, smart teaching is expected to become a major driving force for the high-quality development of foreign language education in the era of intelligent education.

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Conflicts of Interest

The author declares no conflicts of interest.

References

- [1] Anders, G. (2017) You Can Do Anything: The Surprising Power of a “Useless” Liberal Arts Education. Little, Brown and Company.
- [2] Wang, N. (2020) Foreign Language Discipline Development from the Perspective of the New Liberal Arts. *Foreign Languages in China*, **17**, 4-9. (In Chinese)
- [3] Wu, Y. (2019) New Missions, a New Landscape, the New Liberal Arts, and Foreign Language Education. *Frontiers of Foreign Language Education Research*, **2**, 3-7. (In Chinese)
- [4] Guo, Y. (2020) Reflections on Major Issues in Foreign Language Education in the Era of the New Liberal Arts. *Foreign Languages in China*, **17**, 4-12. (In Chinese)
- [5] Zawacki-Richter, O., Marín, V.I., Bond, M. and Gouverneur, F. (2019) Systematic Review of Research on Artificial Intelligence Applications in Higher Education—Where Are the Educators? *International Journal of Educational Technology in Higher Education*, **16**, Article No. 39. <https://doi.org/10.1186/s41239-019-0171-0>
- [6] Siemens, G. (2005) Connectivism: A Learning Theory for the Digital Age. *International Journal of Instructional Technology and Distance Learning*, **2**, 3-10.
- [7] Mishra, P. and Koehler, M.J. (2006) Technological Pedagogical Content Knowledge: A Framework for Teacher Knowledge. *Teachers College Record: The Voice of Scholarship in Education*, **108**, 1017-1054. <https://doi.org/10.1111/j.1467-9620.2006.00684.x>