

Research on the Current Situation and Countermeasures of Artificial Intelligence Application in Foreign Language Teachers in Universities

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Abstract: The deep iteration of generative artificial intelligence (GAI) and educational large models has pushed university foreign language education into the deep waters of digital transformation. Foreign language teachers, as the core entities in the implementation of teaching and the integration of technology, are directly determined by their AI application capabilities in determining the effectiveness of digital empowerment in foreign language education. This study is based on the Technology Pedagogical Content Knowledge (TPACK) theory and the teacher's professional resilience theory. This paper systematically analyzes the hierarchical distribution, scene characteristics, and core pain points of foreign language teachers' AI applications. The study finds that current foreign language teachers' AI applications present four characteristics: shallow tool application, fragmented scenes, structural imbalance in capabilities, and absence of ecological support. The acceptance of technology, TPACK literacy, and perceived organizational support are the core variables restricting deep application. This paper starts from four aspects: technology empowerment, professional development, teaching reconfiguration, and institutional support, and establishes a four-dimensional collaborative response system of "sophistication advancement - scene integration - risk prevention - ecological support". It proposes operational strategies such as differentiated ability cultivation, AI integration of teaching, learning, and assessment, and ethical compliance control. This provides theoretical support and operational approaches for university foreign language teachers to solve technical application problems, achieve role transformation in their profession, and update teaching paradigms.

Keywords: Foreign language teachers in universities; Generative artificial intelligence; TPACK literacy; Teaching integration; Professional resilience; Digital transformation

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1. Introduction

The large-scale implementation of artificial intelligence technology, especially large language models (LLM), has restructured the knowledge supply methods, interaction forms, and evaluation systems of foreign language education in universities, breaking through the traditional limitations of teaching time and space and language input barriers. Foreign language disciplines are one of the main application fields of natural language processing (NLP) technology. Compared with other disciplines, they have a higher degree of compatibility and integration with artificial intelligence. AI technology can cover all teaching links such as voice correction, text generation, cross-language translation, student profile analysis, and critical thinking training. University foreign language teachers belong to the intermediate link between AI technology and teaching practice. Their understanding of technical application, operational level, and integration concept directly affects the effectiveness of AI assisting foreign language teaching. Currently, academic research mostly focuses on the application scenarios of AI in foreign language teaching, the construction of technical models, or the analysis of learning outcomes on the student side. Systematic empirical studies on the application behaviors, ability structure, and real-world dilemmas of the teacher subject are relatively scarce. Moreover, most studies do not distinguish the application differences between tool-type AI and generative AI, and do not sufficiently explore deep issues such as the structural shortcomings of teachers' abilities and the absence of organizational guarantees. This paper thoroughly analyzes the actual status and inherent problems of foreign language teachers' AI application. Furthermore, it constructs targeted coping strategies based on the TPACK theory and the professional resilience framework to help foreign language teachers tackle issues such as technological alienation, insufficient competence, and ecological imbalance, and advance the high-quality digital transformation of university foreign language education ^[1].

2. The current application status of artificial intelligence among university foreign language teachers

2.1. Application levels of AI in teachers and current tool usage

From the perspective of the depth dimension of integrating technology and foreign language teaching, the application of artificial intelligence by college foreign language teachers can be clearly divided into three levels. Each level has significant differences in application characteristics, implementation methods, and the degree of integration with teaching. The specific features are as follows.

The tool application type belongs to the shallow application level and is the most common application form among current college foreign language teachers. In this level, teachers mainly use artificial intelligence as a single auxiliary tool for passive use and have not integrated it into the overall framework of teaching design. It is only used to solve basic and mechanical problems in teaching. In actual teaching scenarios, such applications mainly manifest as using AI tools to complete tasks such as voice correction, grammar error detection, rapid generation of basic courseware, and simple text translation. The core function is to reduce the repetitive teaching burden of teachers and has not made substantive changes to the teaching process or the mode of teacher-student interaction.

The auxiliary integration type belongs to the middle-level application level and has a significantly higher application range and integration degree than the shallow application level. The core feature of this level is that teachers no longer limit themselves to the use of a single AI tool but achieve the linkage and cooperation of multiple AI tools and actively embed them into the key links of foreign language teaching,

forming a preliminary integration of “technology tools + teaching links”. Specifically, teachers will use the AI learning situation profiling function to grasp students’ language ability weaknesses accurately, and based on the profiling results, push differentiated homework; through the AI oral interaction training tool to build immersive language expression scenarios to make up for the shortcomings of traditional classroom oral practice; and use the AI writing annotation function to achieve detailed grading and feedback for students’ writing works, making artificial intelligence an important link connecting various teaching links.

The paradigm reconfiguration type belongs to the deep application level and is the advanced form of the integration of artificial intelligence and foreign language teaching. The application range is relatively narrow. This level breaks through the limitations of tool assistance and takes artificial intelligence technology as the core driving force to promote the comprehensive innovation of the teaching paradigm, achieving the reconfiguration of teacher roles and the upgrading of teaching goals. In actual teaching, teachers will rely on generative AI to conduct reflective foreign language teaching, guiding students to conduct in-depth exploration around cross-cultural issues and language logical problems; using AI technology to build cross-cultural virtual study scenarios to enhance the shortcomings of traditional classroom oral practice; and jointly using AI to carry out course development work collaboratively, optimizing course content, teaching models, and evaluation systems based on disciplinary characteristics and technical advantages, truly achieving the deep empowerment of artificial intelligence for college foreign language teaching.

Overall, the current application of artificial intelligence by college foreign language teachers shows significant hierarchical differences. The shallow tool application occupies the mainstream, while the deep application that can achieve the deep integration of technology and teaching and promote the transformation of teaching paradigms is still relatively rare. The overall application depth presents a typical pyramid structure, which also reflects that college foreign language teachers still have a large space for improvement in the deep application of artificial intelligence ^[2].

2.2. Current status of the capability structure based on the TPACK framework

TPACK (Technology - Teaching - Content Knowledge) is the core theoretical framework that characterizes teachers’ ability to integrate technology. It encompasses technical knowledge (TK), pedagogical knowledge (PK), subject content knowledge (CK), and the combined knowledge dimension resulting from the intersection of these three. The traditional PK and CK dimensions of foreign language teachers’ literacy levels are at a relatively high level, with solid professional language skills and teaching practical operation capabilities. However, the TK dimension and all the composite integration dimensions have significantly lower scores, and the overall integration knowledge score is the lowest. This indicates that the core weakness of current teachers’ application of AI is not the lack of professional teaching ability, but the lack of technical knowledge reserves and the lack of coupling ability between technology and subject/teaching methods, resulting in a structural imbalance of “understanding teaching but not technology, being able to use tools but not integrate” ^[3].

2.3. Current situation of application challenges and constraints

The current situation of AI application by university foreign language teachers has four main problems. First, the application is at a shallow level, with a mainly tool-based use, lacking the integration of the entire teaching process; second, the ability structure is unbalanced, with a significant lack of TPACK comprehensive skills, and the ability to integrate technology is lacking; third, the application scenarios are

fragmented, and the AI tools do not have a high degree of compatibility with high-level scenarios such as foreign language critical thinking teaching and cross-cultural teaching; fourth, the supporting ecosystem is not complete, with the lack of organizational support such as training by the institution, funds, and ethical norms, and the professional resilience of teachers has been weakened by the impact of technology.

3. Deep analysis of the core problems in the application of artificial intelligence by foreign language teachers in universities

3.1. Alienation of technological application: Instrumental rationality dominating teaching value rationality

Most teachers regard AI as a tool to reduce the burden of teaching, focusing only on mechanical tasks such as homework grading and text generation, while ignoring the core role of AI in language reasoning, pragmatic ability cultivation, and cross-cultural cognitive construction. This application model dominated by instrumental rationality leads to the phenomenon of technology generalization in foreign language teaching, where teachers overly rely on AI to generate lesson plans and model texts, weakening their own subjectivity in teaching design, and students rely on AI to complete writing and translation tasks, resulting in technological dependence, inhibiting language output ability and critical thinking development, and causing the alienation phenomenon where technology empowerment actually restrains teaching quality ^[4].

3.2. Disconnection of competence system: Structural lack of TPACK comprehensive competence

There are two layers of disconnection in teachers' capabilities, namely the basic technology disconnection and the integration design disconnection. The basic technology disconnection mainly refers to the fact that most middle-aged and elderly teachers lack basic knowledge such as NLP and the underlying logic of large models, and cannot distinguish the differences between generative AI and traditional AI applications, resulting in technological cognitive deviations; the integration design disconnection refers to the fact that teachers cannot construct an integrated AI solution covering input, interaction, output, and evaluation based on the characteristics of foreign language subjects, and cannot design differentiated technical application paths for different languages and different levels of courses, and the technical adaptation ability for high-level teaching scenarios is seriously insufficient.

3.3. Organizational ecological vacuum: Absence of supporting system and compliance mechanism for foreign language studies

At the university level, an AI-enabled supporting system tailored for foreign language studies has not yet been established: The training system is highly homogeneous, mostly consisting of general AI operation training, lacking specialized TPACK advanced training for foreign languages; Resource allocation is unbalanced, with insufficient AI teaching funds and platform resources for foreign language disciplines in science and engineering universities; The ethical control mechanism is absent, failing to clearly define the data security, content compliance, and academic integrity boundaries of AI teaching applications. Teachers have concerns about data leakage and ideological deviations in the generated content, which leads to technical avoidance behaviors ^[5].

3.4. Occupational cognitive bias: Technological impact leads to role identity crisis

Generative artificial intelligence possesses strong capabilities in language generation and teaching assistance, causing some teachers to experience anxiety regarding its technological substitution. They believe that AI will replace the leading role of teachers in teaching. This cognitive bias leads to two extreme behaviors. Some teachers overly reject AI technology and adhere to traditional teaching methods, while others overly delegate authority to AI, weakening their core functions of guiding, stimulating critical thinking, and emotional education, and deviating from the fundamental goals of foreign language education, such as cultivating moral character and language proficiency.

4. Strategies for optimizing the application of artificial intelligence by college foreign language teachers

Based on the aforementioned situation and problems, this paper, relying on the TPACK reconstruction theory and the framework for cultivating teachers' professional resilience, constructs a four-dimensional collaborative response system of "socio-cognitive advancement - scenario integration - risk prevention - ecological support", precisely solving problems such as the superficiality of teachers' AI application, imbalance of capabilities, and ecological deficiency, and achieving deep, compliant, and efficient integration of AI technology and college foreign language teaching.

4.1. Layered advancement: Building a differentiated TPACK competence cultivation system

In response to the problem of structural imbalance in teachers' capabilities, breaking the homogenized training model, based on the levels of teachers' AI application, teaching experience, and course types, implement layered cultivation to fill the gaps in the TK and composite integration dimensions and reshape the structure of teachers' TPACK capabilities. First, set up training gradients by layering. For shallow tool-type teachers, they mainly receive basic TK module training such as the principles of large models, NLP foreign language application logic, and compliance tool operation, correcting technical cognitive biases; for middle-level integrated teachers, they mainly strengthen TPK and TCK composite capabilities, training AI and embedding design for courses such as reading, speaking, and writing; for deep reconfiguration-type teachers, they mainly strengthen the full-domain capabilities of TPACK, conducting high-level training such as curriculum paradigm reconfiguration, AI collaborative teaching, and virtual research scenarios development. Secondly, create a school-based training carrier. Relying on the foreign language teaching research team of the university, create an AI teaching integration workshop, according to different course attributes such as public foreign language, professional foreign language, and country and region studies, create exclusive teaching case libraries, and establish a mechanism for mutual assistance between young and senior teachers, where young teachers provide technical knowledge and senior teachers provide design guidance for teaching integration, achieving complementary capabilities of both parties. Finally, make AI application capabilities one of the indicators for foreign language teachers' performance assessment and professional title evaluation, create a dynamic evaluation system for competence advancement, and prompt teachers to consciously enhance their digital literacy ^[6].

4.2. Paradigm reconstruction: Promoting the integration of AI in the full chain of teaching, learning and assessment

Eliminate the drawbacks of fragmented tool applications, based on the core logic of language input, interactive output, and process evaluation in foreign language teaching, construct a full-chain AI-integrated teaching paradigm, return to the rationality of teaching value, and eliminate technological alienation.

At the teaching design end, rely on generative AI to achieve differentiated lesson preparation. Teachers, based on student profile data, use large models to generate stratified language materials and context-based task lists, and customize input materials for students of different language proficiency levels; with the help of AI, generate cross-cultural teaching scenarios and construct virtual national communication scenarios to make up for the shortcomings of the lack of real scenarios in traditional foreign language teaching.

At the classroom implementation end, create a human-machine collaborative interactive classroom. Distinguish between mechanical tasks and high-level tasks: assign pronunciation correction, vocabulary differentiation, and grammar explanation, which are low-level tasks, to AI for completion, releasing teachers' teaching time; teachers focus on high-level educational tasks such as critical thinking discussions, pragmatic error correction, emotional guidance, and cross-cultural value guidance, and establish the classroom rights and responsibilities boundary of "AI-enabled tools, teacher value-led"^[7].

From the teaching evaluation end, create a process-based evaluation system driven by AI. By collecting various behavioral data such as classroom interaction, homework output, and self-study from students through educational large models to form personalized student profile images, combine it with teachers' manual evaluation to form a dual-track evaluation system of machine quantitative evaluation and teacher qualitative evaluation, overcome the shortcomings of traditional terminal evaluation, and achieve the goal of precise education.

4.3. Compliance management: Establishing an AI ethical risk prevention mechanism specific to foreign language disciplines

For the three core risks of data security, academic integrity, and ideological issues, a suitable ethical control system tailored for the foreign language discipline is constructed to eliminate teachers' concerns about application and standardize the boundaries of technological application.

Firstly, data security control. Clear regulations are set for the collection and use of students' oral language data, written text materials, and personal learning situation information in foreign language teaching. Domestic compliant educational large models are preferred, and overseas unregistered AI tools are prohibited for processing students' private data. A data anonymization mechanism is established to remove privacy from language output content and prevent risks of data leakage across borders.

Secondly, academic integrity regulation. Specific rules for the use of AI in foreign language courses are formulated, clearly defining the sections where AI assistance is allowed (such as pronunciation correction, material organization) and the sections where it is prohibited (such as directly generating essays and translation assignments). Relying on AI plagiarism detection and text traceability tools, AI-generated content is identified, and academic integrity is incorporated into course assessment to cultivate students' correct views on technological use^[8].

Thirdly, ideological review. The foreign language discipline involves a large amount of foreign cultural and text materials, and a dual review mechanism for AI-generated content needs to be established. By using the risk control module built into the model and teacher manual review, issues such as the infiltration of

Western values and cultural biases in the generated content are screened out, and the ideological position of foreign language education is firmly defended.

4.4. Ecological empowerment: Improving organizational support at the university level and cultivating professional resilience

Fill the gap in the lack of organizational support at universities, and build a supporting ecosystem from three aspects: resource allocation, teaching and research support, and role guidance, to alleviate teachers' technical anxiety and enhance their professional resilience in the digital age.

Optimize resource allocation, set up special funds for AI teaching in foreign language disciplines, purchase exclusive educational large models and foreign language corpus platforms, and build a university-level AI foreign language teaching training center. For resource deficiencies in central and western regions, as well as private universities, promote the sharing of AI foreign language teaching resources among regional universities to narrow the digital gap.

Strengthen teaching and research empowerment, rely on core foreign language journals and national teaching projects to guide teachers to conduct empirical research on AI integration teaching, promote two-way empowerment of teaching practice and research; build cross-university and cross-regional teaching communities to share excellent integration cases and course resources ^[9].

Reconstruct professional cognition. Through special lectures and teaching research discussions, clarify the core roles of foreign language teachers under human-machine collaboration: teachers are decision-makers in teaching design, language literacy guides, and value concept formers, rather than subordinate to technology. Guide teachers to liberate mechanical work through AI, focus on their irreplaceable educational functions, eliminate anxiety of substitution, and enhance professional identity and digital professional resilience.

5. Conclusion

Artificial intelligence has been widely applied in university foreign language education, which is an inevitable outcome of digital transformation. The quality of AI application by foreign language teachers directly affects the effectiveness of disciplinary reform. Currently, the application of artificial intelligence by foreign language teachers in Chinese universities is at a shallow tool-based stage. There are prominent problems such as imbalance in ability structure, fragmented application scenarios, lack of ethical control, and absence of a supporting ecosystem. Essentially, this is the result of the combined effect of insufficient TPACK comprehensive literacy and the misalignment of technical application value. The four-dimensional collaborative response system established in this paper precisely resolves the existing problems from four aspects: ability cultivation, scenario integration, risk prevention and control, and ecosystem support. It enables teachers to break free from the application misconception of tools and re-shapes the human-machine collaborative teaching model. Future research can further combine the differentiated characteristics of universities teaching different languages and of different types of institutions, conduct empirical studies in specific scenarios, optimize the quantitative effectiveness model of AI integration teaching, and continuously promote university foreign language education from technology empowerment to value empowerment, achieving the improvement and upgrading of foreign language talent cultivation quality in the digital context.

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