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Professional Literacy of College English Teachers in Smart Teaching Environments: Connotations, Challenges, and Development Pathways

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Abstract

The smart teaching environment is fostering a new foreign language education ecosystem and demanding new professional literacy and development pathways for college English teachers. By integrating knowledge structure theory, TPACK theory, policy document analysis, and practical requirements, this paper redefines the connotations of professional literacy for college English teachers within the smart teaching environment. In light of the current state of professional development among college English teachers, it clarifies the challenges faced and proposes development pathways to enhance professional development under such conditions.

Keywords: smart teaching environment, college English teachers, professional literacy, challenges, development pathways

1. Introduction

In February 2019, the State Council issued the "China Education Modernization 2035," which outlined the strategic task of "accelerating educational transformation in the smart teaching environment, promoting reforms in educational organizational forms and management models, and advancing educational modernization through informatization." It emphasized that "the professionalization of educators, governance modernization, informatization, and internationalization are critical pillars supporting educational modernization." Educational informatization has become an inevitable pathway for talent cultivation. For college English teachers, the transformation brought about by the smart teaching environment represents both an opportunity for professional growth and significant professional challenges. In an era where opportunities coexist with challenges, college English teachers must not only focus on consolidating professional skills, optimizing teaching content and methods, and reforming assessment mechanisms but also reflect on how to enhance overall quality to meet the demands of talent cultivation in the information age.

Within the context of smart teaching, as educational technology continues to deeply integrate with teaching practices, recognizing the situation, clarifying the connotation of professional literacy for college English teachers,

objectively analyzing their current professional development status, leveraging favorable factors of educational informatization, enhancing professional qualities and skills, and transforming challenges into drivers for professional development have become essential considerations for every college English teacher.

2. Connotations of Professional Literacy for College English Teachers in Smart Teaching Environments

In the field of teacher professionalization research, the knowledge structure theory proposed by Professors Lin Chongde and Shen Jiliang holds considerable influence in China. This theory posits that the essential knowledge of teachers comprises ontological knowledge, conditional knowledge, and practical knowledge. Ontological knowledge refers to subject-specific knowledge related to taught courses; conditional knowledge pertains to pedagogy, psychology, and other areas necessary for becoming a teacher, serving as a prerequisite for conducting teaching activities; practical knowledge involves empirical insights gained from solving problems in specific teaching contexts.

The TPACK theory introduced by American scholars Koehler and Mishra suggests that the knowledge structure of teachers in the information age primarily consists of three core components: subject content knowledge, pedagogical method knowledge, and technical knowledge. Additionally, it encompasses four composite elements: pedagogical method knowledge integrated with subject content, subject knowledge integrated with technology, pedagogical method knowledge integrated with technology, and subject-specific pedagogical knowledge integrated with technology. The pedagogical knowledge in TPACK integrates conditional and practical knowledge from the knowledge structure theory, while technical knowledge is treated as a parallel core component, underscoring its importance in the knowledge structure of teachers.

Based on these theories, along with China's "Standards and Guidelines for Professional Development of Primary and Secondary School Teachers" and "Standards for Educational Technology literacy of Primary and Secondary School Teachers," as well as the demands for professional development of college English teachers in the smart teaching environment, the author contends that the professional literacy of college English teachers in this context should encompass five aspects: modern educational theories and teaching concepts, solid professional knowledge and skills, the ability to apply modern educational technology, comprehensive teaching and research capabilities, and the ability to build harmonious teacher-student relationships.

2.1 Modern Educational Theories and Teaching Concepts

The depth of modern educational theoretical knowledge reserves directly impacts educational and teaching effectiveness. Here, knowledge reserve refers to the level of understanding, emphasis, and mastery of modern educational theories and teaching concepts. Beyond mastering general theoretical knowledge required for educators, college English teachers must adapt to the demands placed on them within the smart teaching environment, undertake moral education and talent cultivation responsibilities, and implement ideological and political education reforms in courses to achieve the goal of "all-round" education. Simultaneously, they must continuously update their educational theoretical knowledge, guide teaching practice with advanced teaching concepts and modern educational theories during foreign language instruction, and integrate and innovate. This represents the inevitable direction for the professional development of college English teachers.

2.2 Solid Professional Knowledge and Skills

Solid professional knowledge and skills form the cornerstone of professional development for college English teachers. These are first reflected in robust language skills, including standard pronunciation, fluent oral expression, standardized writing, and appropriate classroom language. They are also demonstrated through management and response capabilities when addressing actual teaching situations and organizing teaching activities. These represent specific methods and experiences for resolving various practical problems in the teaching process. College English teachers with strong professional skills can identify issues more acutely, analyze them more deeply, and solve them creatively in real-world teaching scenarios. College English teachers should fully utilize their knowledge reserves, maximize the

application value of professional qualities, and cultivate talents with multiple foreign language skills.

2.3 Ability to Apply Modern Educational Technology

Information technology is deeply embedded in foreign language teaching. Appropriately applying modern educational technology to serve teaching has become a crucial component of professional ability development for college English teachers in the information age. According to the "Standards for Educational Technology literacy of Primary and Secondary School Teachers," college English teachers should enhance their modern educational technology literacy across four dimensions: awareness and attitude, knowledge and skills, application and innovation, and social responsibility. Regarding awareness and attitude, college English teachers should recognize that educational technology constitutes an indispensable aspect of professional development. In actual teaching, they should possess the awareness of utilizing educational technology for teaching assistance, evaluation, and professional learning. Regarding knowledge and skills, college English teachers should master relevant theoretical knowledge of educational technology, understand commonly used teaching media, and manage and evaluate teaching resources. Regarding application and innovation, college English teachers should effectively integrate technology into courses, optimize the teaching environment, and conduct teaching research using educational technology. Regarding social responsibility, college English teachers should leverage educational technology to address inequalities in teaching resources, ensuring students from diverse backgrounds and abilities can access the same learning resources for balanced development.

2.4 Comprehensive Teaching and Research Capabilities

Inspired by British scholar Stenhouse's concept of "teachers as researchers," the idea of teachers becoming researchers has gradually taken root. Many Chinese scholars have acknowledged that engaging in teaching and research enhances teachers' professional qualities. Through teaching and research activities, teachers can organically combine theory with practice, use theory to guide teaching, explore teaching in-depth, reflect on issues arising in teaching practice, and systematically distill teaching experience. Consequently, teaching and research capabilities constitute a vital component of professional development. Given the current individual development status of college English teachers, insufficient teaching and research achievements remain a significant factor affecting their professional ability development. Therefore, participating in teaching and research projects, conducting teaching and research activities, and reflecting and summarizing in a timely manner are imperative for college English teachers.

2.5 Ability to Build Harmonious Teacher-Student Relationships

Interacting with students and managing them effectively are integral components of professional development for college English teachers. Whether in classroom teaching, daily teaching activities, or extracurricular collective activities, the smooth progress of these activities depends closely on teacher-student interaction and communication skills, as well as class management abilities. A harmonious teacher-student relationship ensures effective teaching implementation and positively influences students' mental health, personality development, interpersonal communication skills, and campus humanistic education. Thus, whether college English teachers can establish a harmonious teacher-student relationship significantly impacts teaching progress and student cultivation.

3. Challenges Faced by Professional Literacy of College English Teachers in Smart Teaching Environments

3.1 The Challenges of Smart Teaching to the Educational Technology Competencies of College English Teachers

The educational technology competencies of college English teachers refer to their knowledge and skills in utilizing network information technology and multimedia technology to assist foreign language teaching. This is aimed at transforming teaching paradigms, enhancing teaching quality, and promoting personal professional development within a smart teaching environment. Despite years of exploration and practice, college English teachers have developed a certain level of information awareness and skills; however, these remain insufficient to meet the demands of information-based language teaching. The specific challenges are outlined as follows:

Firstly, some college English teachers lack proactive motivation to enhance their information literacy. They exhibit limited innovation and tend to rely on traditional teaching methods, focusing more on their own professional knowledge and skills rather than exploring innovative teaching models through the use of information technology. Secondly, many teachers predominantly rely on general search engines like Baidu and Google for resource acquisition, rarely utilizing specialized teaching resource platforms, e-book libraries, or corpora. Even when resources are obtained, they often undergo only basic text processing due to a lack of familiarity with advanced software tools such as editing and format conversion programs. Consequently, teachers face difficulties in handling multimedia formats such as audio and video files. Thirdly, Information-Based Teaching Environments are inadequate. Limited funding has resulted in insufficient investment in the software and hardware required for educational informatization. Self-study centers and language laboratories are scarce, and existing facilities often suffer from low configurations and outdated equipment, which fail to meet standard teaching requirements. Additionally, campus networks frequently experience lagging issues. High-quality teaching software and resources are also lacking. Existing software, typically developed by computer science professionals, may not align with teaching principles or syllabi across various subjects. There is thus an urgent need for high-quality software resources tailored to the needs of college English teaching.

3.2 The Challenges of Smart Teaching to the Role of College English Teachers

With the deep integration of the Internet, information technology, and foreign language teaching, the entire ecosystem of foreign language education has experienced significant transformations, exhibiting the following characteristics: 1) Abundant teaching resources. In the context of smart teaching, the content of foreign language instruction is no longer confined to textbooks or teachers alone. The advancement of the Internet has made a wide variety of learning resources readily accessible. 2) Transformation of the foreign language teaching model. There is a shift from traditional teaching methods to blended learning approaches, with the emergence of new paradigms such as flipped classrooms, micro-lessons, MOOCs, and WeChat-based learning. 3) Challenging teacher authority. In today's networked era, knowledge has become diversified, and teachers are no longer the sole custodians of knowledge. Teachers and students collaborate in constructing knowledge, and the teacher's control over learning activities has diminished. Based on these characteristics, the role of college English teachers is being redefined. If college English teachers continue to position themselves solely as knowledge transmitters or teaching managers, it becomes evident that they cannot adapt to the evolving demands of foreign language teaching in the smart teaching environment. Consequently, college English teachers must proactively adjust their roles, enhance their information literacy, and align themselves with the requirements of the new era.

3.3 The Challenges of Smart Teaching to the Academic Research Ability of College English Teachers

Teaching and research are interdependent and form an organically integrated and unified whole. Discussing teaching research without a focus on teaching is akin to empty theorizing, while discussing teaching without engaging in teaching research is like groping in the dark. Based on the current state of individual development among college English teachers, insufficient teaching research capability remains a critical factor hindering their personal growth and professional advancement.

The advent of smart teaching environments has triggered a wave of educational informatization, infusing foreign language education with advanced technological capabilities and significantly promoting its development. This wave of informatization has also profoundly influenced foreign language teaching and learning. A vast array of foreign language learning resources and personalized learning demands have given rise to a brand-new paradigm in foreign language instruction. The learning environment has undergone transformation, and the methods and channels for accessing resources have been greatly expanded. Learning modes have shifted from traditional classroom listening and note-taking to online active learning paradigms. Innovations in teaching methodologies have enhanced teacher-student interaction, strengthened students' abilities to identify and solve

problems, and fostered the development of critical thinking skills. These new developments pose significant challenges to the teaching and research capabilities of college English teachers.

Therefore, college English teachers should ground themselves in reality, directly address issues arising from the novel teaching model, conduct rigorous teaching research, "promote reflection through research," and "enhance learning through research." By doing so, they can genuinely improve teaching efficiency and elevate teaching quality.

4. The Development Pathways of College English Teachers in Smart Teaching Environments

4.1 Vigorously Cultivating Educational Technology Abilities of College English Teachers

The improvement of the educational technology ability of college English teachers can be approached from two levels: one is at the school level, and the other is at the teacher level. At the school level, the following three tasks can be emphasized: firstly, schools should increase investment in software and hardware infrastructure construction, such as the development of foreign language teaching resource platforms, digital campuses, smart classrooms, information technology support, etc.; Secondly, based on the characteristics and personalized needs of college English teachers, organize and systematically provide training on information technology teaching skills. The training content should not only include the application of information technology tools, but also how to improve information literacy skills in teaching practice. The training methods should be diversified, such as school-based training, off campus training, integrated training, etc. Finally, an information technology training evaluation system should be established to ensure the quality of training. Thirdly, schools should introduce corresponding guiding policies or incentive policies for information-based teaching to encourage teachers to carry out information-based teaching. At the teacher level, they should liberate their minds, enhance their information awareness, cultivate their information skills, and achieve the autonomous development of their information literacy.

4.2 Transforming the Role of College English Teachers

To enable students' all-round development,

college English teachers must promptly adjust their roles and reposition themselves as course designers, organizers, guides, and supervisors, adapting to the new demands of the smart teaching environment. Firstly, to become an outstanding "designer" of a foreign language classroom, a college English teacher must possess a deep understanding of the most advanced teaching theories and concepts, demonstrate strong professional skills, and leverage information technology to comprehensively plan and coordinate the entire course syllabus, teaching objectives, content, progress, and arrangements. Furthermore, for specific teaching content, detailed designs should be implemented, such as selecting appropriate teaching methods, resources, paradigms, and scenarios.

Secondly, teachers must master information technology. In a smart teaching environment, college English teachers need to exhibit a certain level of digital literacy, proficiently apply modern information technology, skillfully use various teaching software, create courseware on platforms, design web pages, and effectively utilize computer resources. Mastery of information technology will inevitably become a fundamental requirement for teachers in future classrooms.

Thirdly, teachers should act as guides and supervisors of classroom learning. Due to the diversification of knowledge and the prevalence of ubiquitous learning models in the information age, students can access information through multiple channels. However, the overwhelming amount of online information often confuses students and makes it difficult for them to make informed choices. This requires college English teachers to guide students in navigating this complex landscape. Additionally, to adapt to new teaching modes in the information age, teachers must guide students to shift from passive participation to active engagement, foster teamwork, encourage critical thinking, and assist students in utilizing learning resources to complete tasks. Moreover, beyond cultivating language skills, teachers should incorporate moral education into their teaching, guiding students to establish correct values and develop sound personalities. Finally, teachers must supervise teaching quality by analyzing data generated from teaching platforms, evaluating teaching and learning situations, refining teaching objectives and

methods, emphasizing outputs, and enhancing overall teaching quality.

4.3 Enhancing the Academic Research Capabilities of College English Teachers

The limited academic research achievements of college English teachers significantly impact their professional development and hinder personal growth. This is not due to a lack of research ability but rather insufficient emphasis and guidance. To enhance academic research capabilities, efforts can be made in the following areas: First, improve ideological understanding and correctly recognize the dialectical relationship between "teaching" and "research." Traditionally, college English teachers have heavy teaching loads and focus primarily on improving student grades and language skills. Believing that "teaching and research" is time-consuming and labor-intensive, they often isolate these activities, failing to recognize their mutual promotion. Therefore, teachers should abandon the notion of prioritizing teaching over research, identify problems in teaching, and use "teaching research" to promote "teaching," achieving an organic integration of both. Second, strengthen "group teaching and research" and foster a research atmosphere. Teachers can form research groups, leveraging the advantages of experienced teachers mentoring newcomers, encouraging young teachers to participate actively, and promoting collaboration with peer institutions to stay updated on the latest developments and share achievements. Third, encourage teachers to attend domestic and international academic symposiums, stay informed about cutting-edge theoretical knowledge, and engage in intellectual exchanges. Fourth, improve incentive mechanisms for teaching and research to boost enthusiasm. Schools or departments should establish diverse incentives, including spiritual rewards (e.g., commendations) and material rewards (e.g., increased performance-based pay or separate bonuses), offering promotion opportunities for teachers with outstanding research achievements.

The rapid development of information, network, and multimedia technologies has reshaped the educational ecosystem in foreign language teaching. College English teachers play a pivotal role in this ecosystem. Focusing on their professional development and personal growth is vital for the healthy evolution of the system. With changes in the educational environment, the connotation of professional literacy has expanded, elevating modern educational technology to a critical position. Under this backdrop, college English teachers should proactively explore professional development paths, enhancing faculty quality through measures such as cultivating educational technology skills, transforming roles, improving research capabilities, and fostering new teacher-student relationships. This will facilitate the transition from traditional models to those suited for the smart era.

Fund Project

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