

# Analysis of Changes and Challenges in Teacher Professional Identity in the AI Era

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**Abstract:** This study, through analyzing the current characteristics of teachers' professional identity in the AI era, finds that the traditional role of teachers as knowledge transmitters is shifting towards being learning guides. The professional authority, teaching methods, and career development paths of teachers are all facing significant challenges. The advantages of AI systems in knowledge acquisition and personalized teaching weaken the traditional authoritative position of teachers, while technological changes demand new adaptive capabilities from teachers, significantly increasing the uncertainty of career development. Based on this, teachers need to reposition their professional roles, strengthen their irreplaceable humanistic values, and require institutional support and guarantees. The study proposes reconstructing a professional identity system suitable for the AI era through establishing a "human-machine collaboration" educational concept, developing critical and innovative abilities, and improving evaluation and incentive mechanisms.

**Keywords:** Artificial Intelligence, Teachers' Professional Identity, Role Transformation; Professional Development, Human-Machine Collaboration

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## 1. Introduction

The rapid development of artificial intelligence technology is reshaping the educational ecosystem, causing profound changes and challenges to the traditional teaching profession. In the context of the widespread application of intelligent teaching tools and the growing demand for personalized learning, teachers' professional identity—the perception and emotional attachment to their professional role, value, and significance—is experiencing unprecedented impacts and reconstruction. The powerful capabilities of AI systems in knowledge transmission, learning diagnosis, and personalized recommendations not only alter traditional teacher-student relationships and teaching models but also fundamentally question teachers' professional authority, core values, and career prospects. In the face of this epochal change, deeply analyzing the characteristics of changes in teachers' professional identity, identifying the main challenges they face, and exploring reconstruction paths and strategies are crucial not only for the professional development and psychological well-being of individual teachers but also for the sustainable development of the entire education sector and the improvement of talent cultivation quality.

## 2. Current Status and Characteristics of Teachers' Professional Identity in the AI Era

Under the traditional paradigm, teachers' professional identity centers on knowledge authority and instructional dominance, encompassing multiple roles such as knowledge transmitter, moral exemplar, and cultural inheritor. With systematic disciplinary expertise and control over the classroom, teachers gain professional dignity and autonomy, and a stable teacher-student relationship and teaching environment provide a predictable career trajectory; under the impact of AI, however, this structure has been profoundly reshaped: teachers are shifting from "transmitters" to designers, guides,

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and evaluators of the learning process; intelligent systems have broken their monopoly over resources and methods, and students' diversified access to knowledge has triggered identity anxiety; the demand for personalized learning compels teachers to master data analysis, technological application, and adaptive teaching; and digitally mediated interactions that blend virtual and real spaces prompt a reassessment of professional value, rendering professional identity dynamic, complex, and diversified <sup>[1]</sup>.

### **3. Major Challenges Faced by Teachers' Professional Identity in the AI Era**

#### **3.1 Impact and Questioning of Professional Authority**

The excellent performance of AI systems in knowledge processing and information acquisition threatens the traditional professional authority of teachers. Intelligent Q&A systems can provide accurate and comprehensive knowledge answers instantly, surpassing human teachers, reducing students' dependency on teachers' knowledge authority. AI's precision and efficiency in personalized learning recommendations and learning path planning challenge teachers' professional status in teaching design and learning guidance. The introduction of AI standards and algorithms in educational evaluation systems weakens teachers' professional judgment authority, questioning their dominant role in teaching evaluation and student development assessments, leading to a professional identity crisis<sup>[2]</sup>.

#### **3.2 Adaptive Challenges Brought by Changes in Teaching Methods**

In the integration of intelligent teaching, teachers face adaptive pressure and skill conversion challenges. Many teachers lack technical skills, struggling to proficiently use smart teaching tools and platforms, affecting teaching effectiveness and increasing professional insecurity and anxiety<sup>[3]</sup>. The contradiction between the demand for personalized teaching and the traditional mass education model is prominent, requiring teachers to balance the overall teaching needs of the group and the personalized needs of each student, increasing the complexity and difficulty of teaching work. The widespread adoption of blended online and offline teaching modes demands teachers master multiple abilities, including traditional face-to-face teaching techniques, online teaching, digital resource development, and online interaction management, posing significant challenges to comprehensive capability upgrades and leading to occupational adaptation difficulties and identity confusion.

#### **3.3 Increased Uncertainty in Career Development Paths**

With AI technology deeply infiltrating the education field, teachers face uncertainties in career development. Some teaching functions being replaced by AI systems cause teachers to worry about their career prospects, especially in areas like knowledge transmission, problem explanation, and learning supervision, where AI systems have clear advantages in efficiency and accuracy, making teachers fear marginalization of their value. Career promotion standards become ambiguous, as traditional evaluation systems based on teaching experience, subject knowledge, and classroom performance give way to a greater emphasis on technological application ability, innovative thinking, and interdisciplinary integration ability, leaving veteran teachers feeling confused and unadapted. The rapid iteration of technology brings lifelong learning pressure, requiring teachers to continuously update their knowledge structure and skills system, with the learning demands and career development anxiety compounding to present ongoing impacts and tests to professional identity<sup>[4]</sup>.

### **4. Pathways and Strategies for Restructuring Teacher Professional Identity in the AI Era**

#### **4.1 Repositioning Teacher Professional Development and Reconstructing Competencies**

In the AI era, teachers need to reposition their professional roles and build a new framework of professional identity based on the concept of "human-machine collaboration." Teachers are no longer mere transmitters of knowledge but should become designers of learning environments, guides for cognitive development, and companions for personal growth, emphasizing creative thinking and emotional education functions. The focus should be on developing critical thinking, problem-solving abilities, and innovative consciousness—areas where AI is difficult to replace. Furthermore, emotional care, moral guidance, and humanistic education become more indispensable in the technological age, forming the core support of professional identity<sup>[5]</sup>. Teachers should establish a system of lifelong learning and continuous professional development, maintain sensitivity to new technologies and ideas, view technology as a means to enhance teaching, and rebuild professional confidence and dignity by actively embracing change.

## 4.2 Optimization of Institutional Environment and Construction of Support Systems

Reconstructing teacher professional identity requires not only individual efforts but also systematic optimization of the institutional environment and the construction of support systems. Firstly, establish a teacher evaluation and incentive mechanism that aligns with the characteristics of the AI era. Shift the focus from teaching performance to a comprehensive evaluation of teachers' contributions to students' cognitive development, innovation capacity, and emotional education, incorporating technology application skills and lifelong learning performance into the evaluation system. Secondly, improve the technical training and professional development support system for teachers. Provide systematic training to help teachers master necessary technical skills, alleviate technological anxiety, and offer continuous professional development resources and platforms to support their capacity enhancement and role transition in the new environment. Additionally, foster an educational culture that encourages innovation and tolerates mistakes, allowing teachers to experiment and err in exploring new teaching models, reducing resistance to change and psychological burden. Lastly, build diversified career development pathways and security systems for teachers, offering various development routes for teachers with different strengths and interests. Through comprehensive social security and career safety networks, alleviate concerns about professional prospects and provide a stable external environment for reconstructing professional identity.

## 5. Conclusion

The transformation and reconstruction of teacher professional identity in the AI era is a complex and profound historical process, full of challenges and opportunities. The traditional professional identity model centered on knowledge authority is under pressure, and the shift of teacher roles toward learning facilitators is inevitable. Faced with challenges such as weakened professional authority, pressure from changes in teaching methods, and increased uncertainty in career development, teachers need to reposition their professional roles at the individual level and develop core competencies that meet the demands of the era. This includes strengthening areas that AI cannot replace, such as fostering innovative thinking, emotional education, and humanistic care. Simultaneously, institutional support and guarantees are indispensable. By optimizing evaluation and incentive mechanisms, improving training support systems, and fostering a culture of innovation, a favorable external environment for healthy reconstruction of teacher professional identity can be provided. Overall, the reconstruction of teacher professional identity in the AI era is not a simplistic adaptation process but a new phase in the professionalization of education. Only through the combination of individual efforts and institutional innovation can the professional value of teachers be re-established and the sustainable development of the education sector be achieved.

## References:

- [1] Wang Hongmei, Wang Yunwu. The Transformation of Teacher Roles and Professional Identity in the AI Era: An In-depth Analysis Based on DeepSeek Application [J]. *China Medical Education Technology*, 2025, 39(3).
- [2] Wang Hongmei, Wang Yunwu. The Transformation of Teacher Roles and Professional Identity in the AI Era [J]. *Chinese Medical Education Technology*, 2025(3).
- [3] Yan Chenqiu. From "Instrumental Rationality" to "Value Rationality": Role Anxiety and Identity Reconstruction of Secondary School English Teachers in the AI Era [J]. *Advances in Education*, 2025, 15.
- [4] Chen Shuwei. Practical Challenges and Path Choices for Teaching Development of Vocational College Teachers in the AI Era [J]. *Vocational and Technical Education*, 2024(35).
- [5] Luo Feining, Liu Zhuang, Xie Wenliang. Identity Challenges and Role Transformation of Editors in the AIGC Era [J]. *Publishing Wide Angle*, 2023(15): 65-69.