



The Role of Artificial Intelligence in Enhancing English Language Teachers' Professional Competence

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Abstract: *This study aims to examine the role of artificial intelligence (AI) in enhancing the professional competence of English language teachers in the context of digital education. The research employs a qualitative descriptive approach supported by literature analysis and reflective examination of AI-based teaching practices, including intelligent tutoring systems, automated assessment tools, and chatbots. Data were obtained from recent scholarly publications, empirical studies, and documented educational practices related to AI integration in language teaching. The findings reveal that AI contributes significantly to strengthening teachers' professional competence by enhancing pedagogical content knowledge, supporting personalized instruction, improving assessment efficiency, and promoting reflective teaching practices. The study also identifies key challenges, such as the need for digital literacy, ethical considerations, and balanced human–AI collaboration. Overall, the results indicate that AI serves as a powerful supportive tool for continuous professional development and innovation in English language teaching.*

Keywords: *Artificial Intelligence, English Language Teaching, Professional Competence, Teacher Development, Digital Education.*

Introduction

In the twenty-first century, technological innovation has become one of the most powerful forces transforming human society. Digital technologies such as big data, cloud computing, and artificial intelligence (AI) are reshaping the way people live, work, and communicate. Education, as a central pillar of social development, is also undergoing profound changes as these technologies create new opportunities and challenges for teachers and learners alike. In many countries, national education systems are prioritizing the integration of digital tools to ensure that teaching methods remain relevant in an increasingly interconnected and technology-driven world.

Within this global transformation, language education holds a particularly important position. English, as the world's lingua franca, is not only a subject of study but also a critical means of access to information, international collaboration, and professional mobility. As a result, English language teachers are expected to possess not only strong linguistic and pedagogical skills but also digital competence that enables them to use emerging technologies effectively. The demand for teachers to upgrade their professional competence has never been greater, and AI offers promising solutions to support this development.

Artificial intelligence is gradually becoming a valuable assistant in language teaching and teacher education. From intelligent tutoring systems that personalize learning experiences to automated assessment tools that reduce teachers' workload, AI is redefining what it means to be an effective and competent educator. However, while these innovations create new opportunities for English language teachers, they also raise important questions about digital literacy, ethical considerations, and the balance between human interaction and technological support.

The purpose of this article is to examine the role of AI in enhancing the professional competence of English language teachers. It explores the theoretical foundations of professional competence, the practical applications of AI in teaching and professional development, and the challenges and prospects of integrating AI into English language education.

Methodology

The concept of professional competence has long been central to discussions of effective teaching and teacher education. Broadly speaking, professional competence refers to the integration of knowledge, skills, attitudes, and values that enable teachers to perform their professional duties with efficiency, creativity, and responsibility.

Lee S. Shulman (1986) introduced the concept of Pedagogical Content Knowledge (PCK). According to Shulman, effective professional competence for teachers doesn't just mean knowing the subject matter ("content knowledge") or knowing how to teach ("pedagogical knowledge"), but the special blend of both: the ability to represent and deliver content in ways that learners can understand. This includes knowing what difficulties learners commonly face, using analogies, examples, teaching strategies, and adapting subject matter for different contexts. This idea is very relevant when thinking about how AI can support teachers: AI tools (for example, adaptive learning systems or intelligent tutoring) can help teachers refine their PCK by analyzing common learner errors, suggesting new ways to represent subject matter, or offering examples/analogies automatically.

In recent years, Artificial Intelligence (AI) has become an integral part of education, transforming the way teachers plan, deliver, and assess learning. For English language teaching in particular, AI offers innovative solutions that not only facilitate student learning but also strengthen teachers' professional competence. By automating routine tasks, providing data-driven insights, and enabling personalized instruction, AI technologies empower teachers to focus more on creativity, mentoring, and effective pedagogy. Teachers believed that Artificial Intelligence in Language Learning and Teaching (AILLT) included assessing student needs, developing appropriate learning resources ... real-time assessment tools ... and increasing teaching efficiency and effectiveness."

AI tools can enhance different dimensions of teaching competence — from linguistic and pedagogical to technological — by supporting lesson preparation, classroom interaction, and assessment.

One of the most widely used applications of AI in English language teaching is "Intelligent Tutoring Systems (ITS)". This is a computer-based learning environment that uses artificial intelligence (AI) to provide learners with personalized instruction and

feedback, similar to what a human tutor would offer. The main goal of ITS is to enhance the learning process by adapting the content, pace, and feedback to meet the individual needs of each learner.

Intelligent Tutoring Systems have several key characteristics that make them effective educational tools. One of the most important features is personalization. ITS can adapt to the learner's knowledge level, learning style, and pace of learning. It provides individualized feedback and guidance, ensuring that each student receives support tailored to their needs.

Another major characteristic is the integration of artificial intelligence. ITS use AI techniques such as expert systems and machine learning to analyze learners' behavior, diagnose mistakes, and predict future performance. This allows the system to provide intelligent responses and adjust its teaching strategies dynamically.

ITS also promote interactive learning. They engage students through active participation, problem-solving, simulations, and real-time communication. Learners receive instant feedback on their answers, which helps them understand their mistakes and learn more effectively.

Another most widely used applications of AI in English language teaching is "Automated Assessment Tools". They are computer-based systems designed to evaluate students' performance automatically, using predefined criteria and algorithms. These tools are increasingly used in education to save time, improve consistency, and provide immediate feedback to learners. They can assess various types of learning tasks, including multiple-choice tests, short answers, essays, and even programming exercises.

The main characteristic of Automated Assessment Tools is their ability to perform evaluations quickly and accurately without human intervention. They use algorithms and artificial intelligence to analyze student responses, compare them with correct answers or marking schemes, and assign appropriate scores. This makes the assessment process more efficient and objective, reducing the likelihood of human error or bias.

Another key feature is instant feedback. Unlike traditional manual grading, automated assessment tools provide learners with immediate results and explanations. This helps students understand their mistakes and improve their performance more effectively. Teachers also benefit by being able to monitor progress in real time and focus on areas where students struggle.

These tools often include customizable assessment options, allowing educators to design different types of questions, difficulty levels, and grading rubrics. They can also support adaptive testing, where the system adjusts the difficulty of questions based on the learner's previous answers.

In addition, Chatbots and Virtual Assistants are also artificial intelligence (AI)-based systems designed to simulate human conversation and provide automated support or information to users. They are widely used in education, business, and customer service to enhance communication, provide instant responses, and support personalized interactions. In the educational context, they serve as digital tutors, learning companions, or administrative helpers that guide students and teachers through various tasks.

Result and Discussion

The main characteristic of Chatbots and Virtual Assistants is their ability to interact with users in natural language, either through text or voice. They use Natural Language Processing (NLP) to understand questions, interpret meaning, and generate relevant responses. This interaction makes communication intuitive, allowing users to engage with the system as if they were talking to a human assistant.

Another key characteristic is 24/7 availability. Unlike human support staff, chatbots and virtual assistants can operate continuously without fatigue. This ensures that users can access information, support, or learning materials at any time, improving accessibility and user satisfaction.

They are also known for personalization and adaptability. These systems can learn from user behavior, preferences, and history to deliver customized responses and recommendations. In education, this allows them to adjust explanations, suggest learning resources, or remind students of deadlines according to individual needs.

A significant feature of chatbots and virtual assistants is automation of repetitive tasks. They can handle routine queries such as FAQs, schedule management, or grading assistance, saving time for teachers and administrative staff. This automation improves efficiency and allows human educators to focus on more complex and meaningful interactions with students.

Impact on Professional Competence

The integration of Artificial Intelligence (AI) into English language teaching is not only transforming the learning experience for students but also reshaping the professional role of teachers. Beyond serving as classroom tools, AI systems provide teachers with opportunities to expand their professional knowledge, improve pedagogical practices, and manage their responsibilities more effectively. By automating routine tasks, supplying real-time feedback, and offering access to vast linguistic resources, AI empowers teachers to focus on higher-order skills such as mentoring, creativity, and critical reflection. The influence of artificial intelligence on teachers' professional competence can be seen in several important areas. AI not only supports teachers in improving their knowledge and skills, but it also changes the way they organize their daily work and reflect on their practice. This multidimensional impact can be observed across key aspects of professional development. For example, it expands access to authentic materials and linguistic resources, helping teachers enhance their knowledge. It also introduces new methodological strategies, allowing for more adaptive instruction and personalized learning. In addition, AI increases efficiency by automating routine tasks, giving teachers more time to focus on creativity and mentorship. Finally, data-driven insights encourage reflective practice, enabling teachers to critically evaluate learner progress and the effectiveness of their instruction. As Tan (2024) notes, the integration of AI into education provides systematic support for knowledge growth, teaching innovation, and reflective practices, making it a powerful tool for enhancing teacher professional development.

The multidimensional impact of Artificial Intelligence (AI) on teachers' professional competence can be observed across several interconnected areas that collectively enhance the quality and effectiveness of teaching.

AI plays a significant role in knowledge enhancement by expanding teachers' access to authentic materials, linguistic resources, and real-time information. Through AI-powered tools and databases, educators can continuously update their subject knowledge and integrate relevant, up-to-date content into their lessons. This promotes professional growth and ensures that teaching remains current, dynamic, and globally informed.

In terms of methodological skills, AI supports teachers in developing new strategies for adaptive instruction and personalized learning. By analyzing learner data and identifying individual needs, AI enables teachers to design differentiated lesson plans and implement flexible teaching methods that suit diverse learning styles. This empowers educators to move beyond one-size-fits-all approaches, fostering deeper engagement and improved learning outcomes.

Conclusion

Artificial Intelligence plays a crucial role in enhancing English language teachers' professional competence by strengthening their knowledge base, refining pedagogical approaches, and improving classroom efficiency. However, the effective integration of AI requires teacher training, ethical considerations, and balanced human-AI collaboration. Future teacher education programs must emphasize AI literacy to prepare educators for the demands of 21st-century language teaching.

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