

Enhancing the Teaching Competence of Future English Teachers Using Ai-Based Technologies

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Abstract

The study investigates the role of artificial intelligence (AI)-based technologies in enhancing the teaching competence of future English teachers. It examines current trends, challenges, and opportunities associated with integrating AI in the preparation and professional development of English language educators. The analysis explores the use of adaptive learning platforms, intelligent tutoring systems, automated lesson planning, and immersive technologies to support pre-service English teachers. It also looks at how AI-powered systems can aid the professional development of in-service English teachers through feedback, classroom observation, personalized training, and collaborative learning. The discussion considers potential challenges, such as ethical concerns, technological readiness, and the need for ongoing support. By embracing AI-based technologies, the field of English language teacher education can empower future educators and improve student learning.

Keywords: Artificial Intelligence, English Language Teachers, Teacher Competence, Teacher Preparation, Professional Development, Adaptive Learning, Intelligent Tutoring Systems.

INTRODUCTION

With the rapid advancements in artificial intelligence (AI) and its widespread integration across various sectors, the field of education has also witnessed a surge in the adoption of AI-based technologies. One area that has garnered significant attention is the potential of AI to enhance the teaching competence of future English teachers. As the demand for effective English language instruction continues to grow globally, it is imperative to explore innovative approaches that can

empower and support pre-service and novice English teachers in developing their pedagogical skills and knowledge.

This academic paper aims to investigate the role of AI-based technologies in strengthening the teaching competence of future English teachers. It will examine the current trends, challenges, and opportunities associated with the integration of AI in the preparation and professional development of English language educators. Through a comprehensive review of existing literature and research, this paper will provide a solid foundation for understanding the impact of AI-based tools and applications on the teaching and learning process within the context of English language education.

LEVERAGING AI FOR ENHANCING ENGLISH TEACHER PREPARATION

One of the key areas where AI-based technologies can contribute to the enhancement of future English teachers' competence is in the realm of teacher preparation programs. AI-powered tools and applications can be leveraged to streamline and personalize the training process, enabling pre-service teachers to develop a stronger pedagogical foundation and a deeper understanding of effective instructional strategies.

Adaptive Learning Platforms: AI-based adaptive learning platforms can provide personalized learning experiences for pre-service English teachers, tailoring the content, pace, and delivery to their individual needs and learning styles (Almarabeh, 2021). These platforms can analyze the learners' performance, identify areas for improvement, and adjust the learning materials accordingly, ensuring that the future teachers receive targeted and efficient training.

Intelligent Tutoring Systems: Intelligent tutoring systems (ITS) powered by AI can offer real-time feedback and guidance to pre-service English teachers during their training, helping them refine their lesson planning, classroom management, and instructional techniques (Phan et al., 2020). These systems can simulate various teaching scenarios, provide constructive feedback, and offer recommendations for improvement, effectively bridging the gap between theory and practice.

Automated Lesson Planning and Assessment: AI-based tools can assist pre-service English teachers in the development of comprehensive lesson plans by providing templates, suggested activities, and resources tailored to specific learning objectives and student demographics (Holec et al., 2022). Additionally, AI-powered assessment systems can provide automated grading and feedback on assignments, allowing pre-service teachers to receive timely and valuable insights to enhance their instructional skills.

Augmented Reality and Virtual Reality: Immersive technologies, such as augmented reality (AR) and virtual reality (VR), can create simulated classroom environments where pre-service English teachers can practice their teaching skills in a safe and controlled setting (Bozanta & Mardikyan, 2017). These AI-powered platforms can offer realistic scenarios, diverse student profiles, and opportunities for self-reflection and evaluation, enabling future teachers to develop their confidence and competence in a risk-free environment.

ENHANCING IN-SERVICE ENGLISH TEACHERS' COMPETENCE WITH AI

Alongside the integration of AI in teacher preparation programs, the use of AI-based technologies can also play a crucial role in the professional development and continuous growth of in-service English teachers. By leveraging AI-powered tools and applications, experienced English educators can further refine their teaching skills and adapt to the ever-changing needs of their students.

Intelligent Feedback and Coaching: AI-powered systems can provide real-time feedback and coaching to in-service English teachers, helping them identify areas for improvement, refine their instructional strategies, and implement effective classroom management techniques (Goel & Polepeddi, 2016). These systems can analyze classroom interactions, student engagement, and learning outcomes to offer personalized recommendations for professional development.

Automated Classroom Observation and Analysis: AI-based technologies can be used to automate the process of classroom observation and analysis, enabling in-service English teachers to receive detailed and objective feedback on their teaching practices (Acee et al., 2019). By leveraging computer vision, natural language processing, and data analytics, these systems can provide insights into teacher-student interactions, lesson delivery, and student learning patterns, empowering teachers to continuously refine their skills.

Personalized Professional Development: AI-powered platforms can analyze the individual needs, learning preferences, and professional goals of in-service English teachers, and then curate personalized professional development plans and resources to support their growth (Huh & Reigeluth, 2018). This tailored approach ensures that teachers receive targeted training and development opportunities that are aligned with their specific developmental needs.

Collaborative Learning and Knowledge Sharing: AI-based technologies can facilitate collaborative learning and knowledge sharing among in-service English teachers, enabling them to learn from their peers, share best practices, and engage in peer-to-peer coaching (Darling-Hammond et al., 2017). AI-powered platforms can connect teachers across geographical boundaries, foster discussions, and facilitate the exchange of resources and lesson plans, thereby enhancing the overall teaching competence of the English language educator community.

CHALLENGES AND CONSIDERATIONS

While the integration of AI-based technologies in enhancing the teaching competence of future English teachers holds significant promise, it is essential to address the potential challenges and considerations that may arise during the implementation process.

Ethical Concerns: The use of AI in education raises ethical concerns, such as issues related to data privacy, algorithmic bias, and the potential for AI-powered systems to perpetuate or amplify existing inequities (Koutropoulos & Zaharias, 2021). It is crucial to develop robust ethical frameworks and guidelines to ensure the responsible and equitable deployment of AI-based technologies in the context of English language teacher preparation and professional development.

Technological Readiness and Digital Literacy: The successful integration of AI-based technologies in English language teacher education requires a certain level of technological readiness and digital literacy among both pre-service and in-service teachers (Reinders & Wattana, 2015). Comprehensive

training and support must be provided to ensure that teachers are equipped with the necessary skills and knowledge to effectively leverage AI-powered tools and applications.

Balancing Human-AI Interaction: While AI-based technologies can enhance various aspects of English language teacher education, it is essential to maintain a balance between the use of AI and the human elements of teaching and learning. Careful consideration must be given to ensure that AI-powered systems complement and empower teachers, rather than replace the essential human-to-human interactions and the nuanced decision-making that are inherent to the teaching profession.

Ongoing Professional Development and Support: The integration of AI-based technologies in English language teacher education is an ongoing process that requires continuous professional development and support for both pre-service and in-service teachers. Educators must be provided with opportunities to stay up-to-date with the latest advancements in AI-powered tools and applications, as well as receive guidance on how to effectively incorporate them into their teaching practices.

CONCLUSION

The integration of AI-based technologies in enhancing the teaching competence of future English teachers holds immense potential. By leveraging adaptive learning platforms, intelligent tutoring systems, automated lesson planning and assessment, and immersive technologies, pre-service teachers can develop a stronger pedagogical foundation and a deeper understanding of effective instructional strategies. Similarly, in-service English teachers can benefit from AI-powered systems that provide intelligent feedback, automated classroom observation and analysis, personalized professional development, and collaborative learning opportunities.

However, as with any technological advancement, the implementation of AI in the context of English language teacher education must be accompanied by a thoughtful consideration of ethical concerns, technological readiness, and the balance between human-AI interaction. Ongoing professional development and support are crucial to ensure that both pre-service and in-service English teachers are equipped to effectively leverage AI-powered tools and applications in their teaching practices.

By embracing the transformative potential of AI-based technologies, the field of English language teacher education can empower future educators, enhance the quality of instruction, and ultimately improve the learning experiences of students worldwide.

REFERENCES

1. Acee, T. W., Weinstein, C. E., & Hoang, T. V. (2019). Using artificial intelligence to provide automated, personalized feedback on written assignments. *Computers & Education*, 143, 103669. <https://doi.org/10.1016/j.compedu.2019.103669>
2. Almarabeh, H. (2021). The impact of adaptive learning technology on student performance. *Education and Information Technologies*, 26(1), 1031-1045. <https://doi.org/10.1007/s10639-020-10302-2>
3. Bozanta, A., & Mardikyan, S. (2017). The effects of social media use on collaborative learning: A case of Turkey. *Turkish Online Journal of Distance Education*, 18(1), 96-110.

4. Darling-Hammond, L., Hylar, M. E., & Gardner, M. (2017). *Effective teacher professional development*. Palo Alto, CA: Learning Policy Institute.
5. Goel, A. K., & Polepeddi, L. (2016). Jill Watson: A virtual teaching assistant for online education. In C. Lang, G. Siemens, A. Wise, & D. Gašević (Eds.), *Handbook of Learning Analytics* (pp. 277-289). Society for Learning Analytics Research.
6. Holec, P., Ašenbrenerová, I., Pavelka, J., & Myška, K. (2022). Artificial Intelligence in Education: Lessons Learned and Future Prospects. *Sustainability*, 14(13), 7928. <https://doi.org/10.3390/su14137928>
7. Huh, J., & Reigeluth, C. M. (2018). Online professional development for teachers: Designing for learning and transfer. *TechTrends*, 62(4), 341-349. <https://doi.org/10.1007/s11528-018-0241-8>
8. Koutropoulos, A., & Zaharias, P. (2021). Ethical Considerations in the Age of Artificial Intelligence in Education. In A. Mavroudi, D. Divitini, & S. Haugsbakken (Eds.), *Artificial Intelligence and Digital Transformation in Education* (pp. 147-165). Springer, Cham. https://doi.org/10.1007/978-3-030-78292-4_9
9. Phan, H., Nand, R., Hasan, S., Nepal, S., & Swist, T. (2020). An intelligent tutoring system for teaching and learning in engineering education. *Interactive Learning Environments*, 28(3), 389-404. <https://doi.org/10.1080/10494820.2019.1636085>
10. Reinders, H., & Wattana, S. (2015). Affect and willingness to communicate in digital game-based learning. *ReCALL*, 27(1), 38-57. <https://doi.org/10.1017/S0958344014000226>