ISSN 2522-6398 Vol. 9, Issue 4: 39-44, DOI: 10.25236/FER.2026.090407

Research on Enhancing Teaching Competence of Continuing Education Teams

Cuihua Sun

School of Continuing Education, University of Shanghai for Science and Technology, Shanghai, China

Abstract: *Continuing education has emerged as a critical component of lifelong learning systems worldwide, yet the pedagogical capacity of its teaching workforce remains insufficiently examined. This study investigates the multidimensional factors influencing teaching competence enhancement within continuing education teams, analyzing technological integration, professional development mechanisms, and sustainable pedagogical models. Through systematic examination of recent empirical research, this paper identifies key determinants of effective teaching in continuing education contexts, including digital literacy, instructional design frameworks, and motivation structures. The findings reveal that successful competence enhancement requires coordinated efforts across institutional support systems, technology-enabled learning environments, and reflective practice communities. This research contributes to understanding how continuing education teams can systematically improve their pedagogical effectiveness while addressing diverse learner populations and evolving educational demands.*

Keywords: *continuing education, teaching competence, professional development, pedagogical innovation, sustainable education*

1. Introduction

Continuing education systems face unprecedented challenges in maintaining teaching quality across diverse educational contexts and learner demographics. The expansion of lifelong learning initiatives globally has created substantial demand for educators who possess not only subject expertise but also adaptive pedagogical skills suited to adult learners, professional development contexts, and rapidly changing knowledge domains. Research indicates that teaching effectiveness in continuing education differs fundamentally from traditional academic settings, requiring specialized competencies in learner engagement, practical application orientation, and flexible instructional delivery[2]. The teaching workforce in continuing education often comprises practitioners from various professional backgrounds who may lack formal pedagogical training yet bring valuable real-world expertise to their instructional roles.

Professional development for continuing education instructors has historically received less systematic attention than teacher education in primary and secondary systems. Many continuing education programs operate with limited resources for faculty development, relying instead on individual instructor initiative or sporadic training opportunities[9]. This gap becomes particularly problematic as educational technologies proliferate and learner expectations evolve, creating widening disparities between instructional practices and contemporary pedagogical standards. The integration of simulation-based education, online learning platforms, and data-driven instructional improvement methods has transformed expectations for teaching competence, yet many continuing education teams lack structured pathways for acquiring these capabilities[3].

Sustainable pedagogical models offer promising frameworks for addressing these challenges through systematic approaches to teaching enhancement. Recent scholarship emphasizes that sustainability in education extends beyond environmental considerations to encompass pedagogical practices that can be maintained and improved over time without excessive resource consumption or instructor burnout[13]. For continuing education contexts, sustainability requires balancing innovation with practicality, ensuring that teaching enhancements remain viable within existing organizational structures and resource constraints. Technological integration represents both opportunity and challenge for continuing education teaching teams seeking to enhance their pedagogical effectiveness[5]. This paper examines how continuing education teams can systematically enhance their teaching competence through integrated approaches that address professional development, technological literacy, instructional design, and sustainable practice models.

ISSN 2522-6398 Vol. 9, Issue 4: 39-44, DOI: 10.25236/FER.2026.090407

2. Theoretical Foundations of Teaching Competence

Pedagogical competence in continuing education encompasses multiple interconnected dimensions that extend beyond traditional notions of teaching effectiveness. Adult learning theory provides foundational principles emphasizing learner autonomy, experience-based learning, and immediate applicability of knowledge, which fundamentally shape how teaching competence should be conceptualized in continuing education contexts[14]. Unlike pedagogical approaches designed for children and adolescents, andragogical frameworks recognize that adult learners bring substantial prior knowledge, specific learning objectives, and expectations for practical relevance that must inform instructional design and delivery. Teaching competence therefore requires not only content mastery and presentation skills but also sophisticated understanding of learner motivation, self-directed learning facilitation, and bridging between theoretical concepts and professional practice.

Instructional design frameworks offer structured approaches to developing teaching competence through systematic planning and evaluation processes. Kern's six-step model, originally developed for medical education but increasingly applied across continuing education domains, provides a comprehensive framework encompassing problem identification, targeted needs assessment, goals and objectives formulation, educational strategies selection, implementation planning, and evaluation mechanisms[9]. This systematic approach ensures that teaching enhancements address genuine learner needs rather than implementing innovations for their own sake. For continuing education teams, adopting such frameworks supports coherent program development while building instructor capacity to analyze learning contexts, design appropriate interventions, and assess outcomes systematically.

Technology acceptance models illuminate how educators adopt and integrate digital tools into their teaching practice, revealing critical factors that influence successful technology-enabled competence enhancement. The Technology Acceptance Model (TAM) and Technological Pedagogical Content Knowledge (TPACK) framework together explain how perceived usefulness, ease of use, and the intersection of technological, pedagogical, and content knowledge shape instructor willingness and ability to incorporate educational technologies effectively[5]. These models highlight that technological competence alone proves insufficient; educators must develop integrated understanding of how specific technologies align with pedagogical goals and disciplinary content.

Motivation theory offers crucial insights into what drives continuing education instructors to invest in developing their teaching competence despite competing professional demands. Self-determination theory suggests that autonomy, competence, and relatedness serve as fundamental psychological needs that influence motivation and persistence in professional development activities[12]. For continuing education teams, many of whom balance teaching responsibilities with other professional roles, intrinsic motivation derived from teaching effectiveness and learner impact often proves more sustainable than external incentives.

3. Professional Development Mechanisms

Structured professional development programs provide essential infrastructure for systematic teaching competence enhancement within continuing education teams. Effective programs move beyond isolated workshops toward comprehensive systems that integrate initial training, ongoing support, reflective practice opportunities, and evaluation mechanisms that inform continuous improvement[6]. Research in physical education contexts demonstrates that continuing professional development significantly influences instructional climate, with educators who engage in sustained professional learning more likely to foster learning-focused rather than performance-focused environments. This finding extends to continuing education broadly, suggesting that professional development shapes not only specific teaching techniques but also fundamental pedagogical orientations that influence all aspects of instructional practice.

Simulation-based education represents an increasingly important modality for developing teaching competence, particularly in fields requiring integration of theoretical knowledge with practical skill application. The use of simulation allows instructors to practice complex teaching scenarios, receive immediate feedback, and refine their approaches in low-stakes environments before implementing new methods with actual learners[2]. This approach proves especially valuable for continuing education in healthcare, emergency services, and other domains where teaching effectiveness directly impacts professional competence and public safety. Simulation-based faculty development can address multiple competence dimensions simultaneously, including instructional delivery, learner assessment, adaptation

ISSN 2522-6398 Vol. 9, Issue 4: 39-44, DOI: 10.25236/FER.2026.090407

to unexpected situations, and integration of quality improvement principles into teaching practice.

Supported teaching models offer structured mentoring and coaching approaches that embed professional development within authentic teaching contexts rather than separating learning from practice. The Supported Teaching in School (STS) model implemented in teacher education programs demonstrates how pairing less experienced educators with mentors who provide observation, feedback, and collaborative reflection can significantly enhance teaching competence[7]. For continuing education teams, such approaches prove particularly valuable given the diverse backgrounds and varying levels of pedagogical preparation among instructors. Supported teaching creates opportunities for situated learning where instructors develop competence through guided practice rather than attempting to transfer abstract principles from decontextualized training sessions to complex teaching situations.

Collaborative learning communities among continuing education instructors facilitate peer-to-peer knowledge exchange and collective problem-solving that enhances teaching competence across entire teams rather than individual educators in isolation. These communities create spaces for sharing effective practices, troubleshooting common challenges, and developing shared understanding of pedagogical principles adapted to specific continuing education contexts[16]. Data-informed instructional improvement represents an emerging approach to teaching competence enhancement that leverages systematic collection and analysis of learning outcomes, learner feedback, and teaching process data[20]. For continuing education, where learner populations and program objectives vary substantially, data-informed improvement enables customization of teaching approaches based on actual outcomes rather than generic best practices.

4. Technology Integration and Digital Competence

Digital integration fundamentally reshapes teaching competence requirements for continuing education teams, demanding new skills while creating opportunities for enhanced pedagogical effectiveness. The transition from traditional to technology-enhanced instruction involves more than adding digital tools to existing practices; it requires reconceptualizing how learning occurs and how instructors facilitate that process[1]. Research in rural education contexts reveals that successful digital integration depends on establishing foundational infrastructure, developing educator digital literacy, and creating sustainable pedagogical models that align technological capabilities with learning objectives. These findings apply broadly to continuing education, where instructors must navigate diverse technological environments and learner digital competencies while maintaining focus on learning outcomes rather than technology for its own sake.

Artificial Intelligence and Generative Content (AIGC) technologies represent emerging frontiers in educational technology that require continuing education teams to develop entirely new competence dimensions. Recent research examining AIGC integration in design education demonstrates that successful adoption depends on both technological acceptance factors and pedagogical content knowledge frameworks[5]. Instructors must understand not only how to operate AI tools but also how to integrate them pedagogically in ways that enhance rather than replace human teaching, develop critical thinking about AI-generated content, and prepare learners for professional environments increasingly shaped by these technologies. For continuing education specifically, AIGC offers potential for personalized learning pathways, automated feedback systems, and content generation that addresses diverse learner needs.

Online course design and delivery constitute core competencies for contemporary continuing education teams, particularly following accelerated digital transformation during recent global disruptions. Effective online teaching differs substantially from face-to-face instruction, requiring competence in asynchronous communication, multimedia content creation, virtual facilitation, and technology-mediated assessment[3]. Research on online continuing education courses for emergency medical technicians reveals that successful programs carefully structure content modules, incorporate interactive elements despite physical distance, and provide clear navigation and support systems that accommodate learners with varying digital skills.

Statistical and analytical tools integration exemplifies how technological competence intersects with disciplinary content knowledge to enhance teaching effectiveness. The incorporation of software tools for teaching statistics demonstrates that technology can make abstract concepts more accessible through visualization, simulation, and interactive exploration[10]. Intelligent tutoring systems and adaptive learning platforms represent sophisticated technological approaches that require continuing education teams to develop competence in new instructional roles[15]. These systems use algorithms to personalize

ISSN 2522-6398 Vol. 9, Issue 4: 39-44, DOI: 10.25236/FER.2026.090407

learning pathways, provide automated feedback, and adjust difficulty based on learner performance, fundamentally changing instructor functions from primary content delivery to learning facilitation and system management.

5. Sustainable Pedagogical Models and Inclusive Practices

Sustainable teaching approaches prioritize pedagogical practices that can be maintained effectively over time while continuously improving rather than depleting instructor energy and institutional resources. Research examining teaching effectiveness in Korean dance education reveals that sustainable approaches involve clear task presentation, appropriate challenge levels, and instructional methods that engage learners without requiring unsustainable preparation or delivery efforts from educators[17]. For continuing education teams, sustainability proves especially critical given that many instructors balance teaching with other professional responsibilities and programs often operate with limited budgets for faculty support. Sustainable pedagogical models therefore emphasize efficient instructional design, reusable learning materials, and teaching methods that scale across different contexts without requiring complete redesign for each implementation.

Inclusive pedagogical practices constitute essential components of teaching competence in continuing education contexts characterized by diverse learner populations. Multilingualism and pedagogical inclusiveness in higher education demonstrate how teaching approaches must accommodate linguistic diversity, varied educational backgrounds, and different learning preferences to ensure equitable access to learning opportunities[8]. Continuing education programs frequently serve learners who have been underrepresented in traditional educational systems, making inclusive teaching competence not merely desirable but essential for program effectiveness. This requires instructors to develop awareness of diverse learner needs, flexibility in instructional approaches, and commitment to creating learning environments where all participants can succeed regardless of their backgrounds.

Gender and economic factors significantly influence both learner engagement and instructor approaches in sustainability-focused continuing education. Research on green teaching adoption reveals that gender differences and economic contexts shape how educators implement sustainability education, with implications for teaching competence development[4]. Teaching competence therefore includes cultural awareness and ability to adapt pedagogical approaches to diverse social contexts rather than assuming universal applicability of any single teaching model.

Project-based learning represents a sustainable pedagogical approach particularly well-suited to continuing education contexts where learners seek practical skills and immediate applicability. Research examining project management as a pedagogical device in tertiary education demonstrates that well-structured projects integrate multiple learning objectives, promote active engagement, and develop transferable skills while providing authentic assessment opportunities[13]. Arts education and creative pedagogies illustrate how sustainable teaching approaches can integrate aesthetic dimensions with practical learning objectives[11]. For continuing education broadly, these findings suggest that teaching competence should include ability to foster creativity and critical thinking alongside technical skill development.

6. Motivation and Assessment Integration

Instructor motivation fundamentally influences teaching quality and willingness to invest in competence development, making it a critical factor in continuing education team effectiveness. Research examining mathematics teachers' motivation reveals that self-efficacy, work satisfaction, and professional experience interact to shape decisions about continuing in teaching roles[12]. For continuing education contexts, where instructors often have alternative professional options, understanding and supporting motivation becomes essential for retention and quality. Work satisfaction among continuing education instructors depends on multiple factors including institutional support, recognition of teaching contributions, and alignment between personal values and program missions[6]. Autonomy in instructional decision-making emerges as a significant motivational factor that influences teaching quality and innovation[18].

Assessment practices constitute both teaching competence requirements and mechanisms for evaluating teaching effectiveness, creating recursive relationships between evaluation and improvement. Effective continuing education instructors develop sophisticated understanding of assessment purposes, methods, and interpretation, using evaluation data not merely for grading but for informing instructional

ISSN 2522-6398 Vol. 9, Issue 4: 39-44, DOI: 10.25236/FER.2026.090407

adjustments and documenting learning outcomes[19]. This competence includes designing assessments aligned with learning objectives, selecting appropriate evaluation methods for different types of learning, providing feedback that promotes improvement, and using assessment results to identify areas where teaching approaches require modification.

Quality improvement frameworks adapted from healthcare and other professional domains offer systematic approaches to enhancing teaching effectiveness through continuous evaluation and refinement. The integration of continuing education with quality improvement and patient safety initiatives demonstrates how teaching can be conceptualized as a process requiring the same rigorous improvement methods applied to other professional practices[2]. For continuing education teams, adopting quality improvement approaches involves establishing clear quality metrics, collecting relevant data systematically, analyzing patterns to identify improvement opportunities, implementing changes, and evaluating their impact.

Learner feedback systems provide essential data for teaching improvement when designed to elicit specific, actionable information rather than generic satisfaction ratings. Research on teacher interaction questionnaires reveals that well-designed instruments can capture nuanced aspects of teaching effectiveness including instructional clarity, responsiveness to learner needs, and creation of supportive learning environments[16]. Program-level outcome evaluation provides broader perspective on teaching effectiveness by examining aggregate learning results, completion rates, and longer-term impacts on professional practice[20].

7. Conclusion

Teaching competence enhancement in continuing education requires comprehensive, sustained approaches that address multiple interconnected dimensions rather than isolated skill development. This analysis reveals that effective teaching in continuing education contexts demands integration of pedagogical knowledge, technological proficiency, disciplinary expertise, and understanding of adult learner characteristics. The research examined demonstrates that successful competence development occurs through systematic professional development, collaborative learning communities, technology-enabled innovation, and sustainable pedagogical models adapted to specific educational contexts.

Sustainable approaches to teaching enhancement prove essential for long-term effectiveness, emphasizing practices that can be maintained and improved over time without depleting instructor energy or institutional resources. The integration of quality improvement frameworks, data-informed decision-making, and reflective practice creates organizational learning systems where teaching competence develops continuously rather than through episodic training interventions. Motivation and work satisfaction emerge as critical factors influencing instructor willingness to invest in pedagogical development, highlighting the importance of supportive institutional contexts, appropriate autonomy, and recognition systems that value teaching excellence.

Technological integration represents both opportunity and challenge for continuing education teaching teams, requiring new competencies while enabling enhanced pedagogical effectiveness. Successful technology adoption depends on comprehensive support systems addressing both technical skills and pedagogical reimagining of how digital tools enhance learning. Future research should examine longitudinal impacts of different professional development approaches, comparative effectiveness of various competence enhancement models across continuing education contexts, and relationships between instructor competence development and learner outcomes.

Practical implications for continuing education programs include investing in comprehensive professional development systems, creating collaborative learning communities among teaching teams, providing adequate technological infrastructure and training, and implementing quality improvement frameworks that support continuous enhancement. The development of teaching competence in continuing education ultimately requires coordinated efforts across individual instructors, teaching teams, institutional support systems, and broader educational policy contexts.

References

[1] Ardila, L. S., Navarro, R. B., & Regino, Y. C. (2026). Digital integration in rural education: Foundations for a sustainable pedagogical model. International Journal of Educational Development, 121, 103516.

ISSN 2522-6398 Vol. 9, Issue 4: 39-44, DOI: 10.25236/FER.2026.090407

[2] Abdool, P. S., Voore, P., Antinucci, R., Soklaridis, S., & Sockalingam, S. (2025). Role of simulation-based education in the integration of continuing education, quality improvement, and patient safety. Academic Psychiatry, prepublish, 1-5.

[3] Enzo, P. G., Bianca, P. L., & Kevin, R. M. (2025). Teaching emergency medical technicians about advanced life support interventions: Pilot study of an online continuing education course. Disaster Medicine and Public Health Preparedness, 19, e233.

[4] Harichandan, S., Kumar, A., & Saini, A. (2025). Green teaching, diverse minds: Unpacking gender and economic factors in sustainability education adoption. Sustainable Development, 33(S1), 720-739.

[5] Huang, Z., Fu, X., & Zhao, J. (2025). Research on AIGC-integrated design education for sustainable teaching: An empirical analysis based on the TAM and TPACK models. Sustainability, 17(12), 5497.

[6] Marcelino, R. (2025). Beyond winning in physical education: The role of continuing professional development in fostering a learning-focused climate. British Educational Research Journal, 51(5), 2474-2490.

[7] Bour, K. B., Fynn, D. A., Kugbey, N., Farkor, K. P., & Kwakye, I. N. (2025). Reflections on supported teaching in school (STS) as a strategy for attaining sustainable teacher education in Ghana. SAGE Open, 15(2).

[8] Chang, A., & Nkansah, J. O. (2024). Literacy for sustainable education: A premise of pedagogical inclusiveness and multilingualism in higher education. Sustainability, 16(24), 10943.

[9] Govindarajan, S., & Rajaragupathy, S. (2024). Empowering continuing medical education (CME) in India: Leveraging Kern's instructional design model. BMC Medical Education, 24(1), 1223.

[10] Marin, C. U., Murillo, J., Acosta, L. S., & Vargas, P. A. (2024). Integration of technological tools in teaching statistics: Innovations in educational technology for sustainable education. Sustainability, 16(19), 8344.

[11] Pavlou, V., & Varela, A. C. (2024). E-learning canvases: Navigating the confluence of online arts education and sustainable pedagogies in teacher education. Sustainability, 16(5).

[12] Täht, K., Mikkor, K., Aaviste, G., & Rozgonjuk, D. (2023). What motivates and demotivates Estonian mathematics teachers to continue teaching? The roles of self-efficacy, work satisfaction, and work experience. Journal of Mathematics Teacher Education, 27(6), 1-20.

[13] Guraziu, E. (2023). The model of project management as a sustainable pedagogical device: Case study research in the tertiary education environment. Sustainability, 15(14).

[14] David, G. C., & Kate, X. M. (2022). Continuing education: Evolutionary perspectives on educational psychology: Motivation, instructional design, and child development. Educational Psychology Review, 34(4), 2221-2227.

[15] Ninni, S., Vinit Kumar, G., Amit Kumar, M., Ram Krishn, M., & Nishad, N. (2022). SeisTutor: A custom-tailored intelligent tutoring system and sustainable education. Sustainability, 14(7), 4167.

[16] Samia, B., Noomen, G., Sabri Gaied, C., Sami, B., Aymen, K., Antonella, M., & Riadh, K. (2022). Adaptation of the questionnaire on teacher interaction in Tunisia: Teaching strategies to promote sustainable education in schools. Sustainability, 14(5), 2489.

[17] Eunchang, K., & Inseon, K. (2022). An analysis of situations and perspectives of secondary education Korean dance teachers' task presentation sustainable teaching effectiveness. Sustainability, 14(3), 1762.

[18] Tiernan, P., & O'Kelly, J. (2022). Enterprise education: Pre-service further education teachers' impressions and aspirations. Education + Training, 64(1), 56-68.

[19] Ramzi, S. (2021). Using a mixed method to develop consensus-based aims, contents, intended learning outcomes, teaching, and evaluation methods for a course on epilepsy for postgraduate or continuing education in community health nursing programs. BMC Medical Education, 21(1), 572.

[20] deMonsabert, J., Brookes, S., Coffey, M. M., & Thornburg, K. (2021). Data use for continuous instructional improvement in early childhood education settings. Early Childhood Education Journal, 50(3), 1-10.