From Knowledge Authority to Wisdom Collaborator: The Transformation and Reconstruction of the Role of English Teachers in the Era of Gene AI

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Grounded in educational ecology and constructivist theory, this study examines the challenges and opportunities faced by English teachers in the Gene AI era. While Gene AI is efficient in surface-level tasks, it has limitations in cultural interpretation, ethical guidance, and metacognitive development. The paper proposes a tripartite framework for role transformation: cognitive reframing, pedagogical innovation, and ethical repositioning to help tackle the problem of functional substitution anxiety due to AI's encroachment on traditional roles. The study concludes that English teachers must evolve into "intelligent curators" who can synergize AI's technical prowess with human wisdom, prioritizing holistic human development over skill acquisition.

Keywords: English teacher role transformation, Generative artificial intelligence (Gene AI), Human-AI collaboration, educational ecosystem reconstruction, wisdom collaborator

Introduction

In the 21st century, where technological revolutions and educational paradigms are deeply intertwined, the development of artificial intelligence (AI) is reshaping the educational ecosystem at an unprecedented pace. Particularly, intelligent tools represented by Generative AI (Gene AI) are disrupting the traditional relationship of "teacher-knowledge-student" in educational settings with their powerful natural language processing capabilities, efficient knowledge integration, and personalized interaction models. The Global Education Monitoring Report by UNESCO (2022) highlights that AI will redefine the "irreplaceability" of teachers, shifting their core function from knowledge transmission to becoming "extenders of human intelligence." Against this backdrop, the field of English language teaching faces particularly significant challenges: from imparting linguistic knowledge and fostering intercultural communication skills to cultivating critical thinking, the role of English teachers is undergoing a paradigm shift from "knowledge authority" to "collaborative wisdom facilitator." However, existing research predominantly focuses on the application of technology itself, lacking systematic exploration of how English teachers can achieve role transformation within the unique context of language teaching. Specifically, the dual nature of the English discipline as both a tool and a

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humanistic subject poses unique challenges. While Gene AI excels in surface-level tasks such as grammar correction and text generation, its limitations in cultural interpretation, value guidance, and metacognitive development may be overlooked. This necessitates that English teachers move beyond the passive role of "technology assistants" to become "intelligent navigators" within a human-machine collaborative ecosystem.

Grounded in educational ecology and constructivist theory, this study analyzes the role challenges faced by English teachers in the Gene AI era and attempts to deconstruct the pathways for their role transformation. The aim of this discussion is to provide a theoretical perspective for research on language education in the age of artificial intelligence and to offer references for policymaking and innovative practices in teacher professional development.

I. Challenges to the Role of English Teachers in the Era of Generative AI

Prior to the 1970s, based on behaviorist theory (Skinner, 1957), teachers served as authoritative transmitters of knowledge, dominating instruction through mechanical drills and standardized testing (Richards & Rodgers, 2001). The rise of Communicative Language Teaching (CLT) in the 1970s marked a significant paradigm shift in language education, with the teacher's role transitioning from the traditional "knowledge transmitter" to a "facilitator of communication" and "guide for learning." However, with the rapid advancement of artificial intelligence technologies, particularly the emergence of new-generation generative AI represented by tools like Chat GPT and DeepSeek, the field of foreign language learning is undergoing revolutionary change. This transformation is not only reflected in the iterative updates of teaching tools and resources but also in the profound redefinition of the essence of learning itself. Leveraging its characteristics of intelligence, personalization, and interactivity, generative AI technology is reshaping multiple dimensions of English learning, including the setting of learning objectives, the optimization of learning processes, the depth of language practice, the breadth of cultural understanding, and even innovations in learning assessment systems. As the core of the educational system, teachers are facing unprecedented challenges to their roles and functions, which are primarily reflected in the following aspects.

1.1 The Deconstruction of Knowledge Authority and the Crisis of Identity

Generative AI fundamentally challenges the role of teachers as "monopolists of knowledge." AI demonstrates high efficiency in areas such as language knowledge transmission (e.g., grammar analysis, vocabulary expansion), task grading (e.g., automatic error correction), and resource generation (e.g., lesson plan design), causing teachers to experience anxiety over the "instrumental replacement of their functions" (Luckin et al., 2016). A report from Cambridge University noted that younger generations of students are more receptive to AI technologies, further undermining teachers' authority in technology (Cambridge Assessment, 2023). For instance, AI-driven writing assistants can instantly provide grammar correction suggestions, marginalizing the traditional role of teachers as "error correctors" (Selwyn, 2019). Additionally, the application of AI in assessment, such as automated grading systems, challenges the core function of teachers as the "sole evaluators." For example, tools like Gradecam and iWrite demonstrate overwhelming efficiency in structured tasks: grading efficiency for multiple-choice/fill-in-the-blank questions improves by 80% (Luckin et al., 2016), and grammar error correction accuracy reaches 97.3% (Zhang, 2021). This technological advantage systematically replaces teachers' foundational assessment skills, with approximately 65%-82% of routine

assessment tasks now capable of being handled by AI. As assessment authority shifts from humans to algorithms, the monopoly of teachers as "sole evaluators" is dismantled, leading to a crisis in their sense of professional value (Frey & Osborne, 2017).

1.2 Pressure to Adapt to Technology and the Skills Gap

Teachers are required to master new skills such as data analysis, AI tool operation, and multimodal resource design, but delays in technical training create significant adaptation challenges (Cheung & Li, 2022). Empirical research conducted at higher education institutions in Hong Kong revealed that 62% of English teachers struggle to effectively integrate AI tools due to a lack of systematic training (Cheung & Li, 2022). For example, using AI to generate personalized reading materials requires not only subject knowledge and technical proficiency but also data interpretation skills for analyzing student learning contexts, posing a significant challenge for experienced teachers (Van Dijk, 2020). Furthermore, teaching models need to transition from "teacher-led" to "human-machine collaboration," requiring a reconfiguration of classroom interaction logic, such as combining AI's instant feedback with teachers' in-depth guidance. All of this increases the complexity of instructional design (Luckin et al., 2016).

1.3 The Value Conflict Between Humanistic Attributes and Instrumental Rationality

The advantage of AI in standardized knowledge transmission creates tension with teachers' roles in providing humanistic care. Research shows that AI cannot replace the unique roles teachers play in emotional support, cultural understanding, and value guidance (Selwyn, 2019). For example, AI cannot deeply perceive students' emotional needs, interpret cultural metaphors in depth, or offer value-based guidance (Floridi, 2019). Moreover, an over-reliance on AI-generated standardized content may lead to "decontextualized" teaching, neglecting individual differences such as students' learning styles and cognitive levels. Therefore, teacher intervention is needed to balance efficiency with warmth (Luckin et al., 2016). Additionally, the potential bias risks inherent in AI algorithms—such as cultural stereotypes encoded into algorithmic frameworks due to limitations in data collection—pose challenges. These bias risks fundamentally stem from the dual alienation of technical systems and social-cultural structures, requiring teachers to possess critical technological literacy to identify and rectify ethical issues in AI outputs (Floridi, 2019; Selwyn, 2020). The cultural bias in AI is essentially a cognitive mirror of human society. Teachers' critical technological literacy is not only essential for ensuring educational equity but also serves as a digital safeguard for cultural diversity. This demands that English teachers move beyond a purely technical fix mindset and work to reconstruct a symbiotic ethics of human-machine culture within the educational domain.

II The Transformation Path of English Teachers in Teaching: A Triple Reconstruction from "Knowledge Authority" to "Wisdom Collaborator"

In the process of AI technology deconstructing the traditional educational order, English teachers are experiencing an unprecedented crisis of professional value. When AI systems achieve a 97.3% accuracy rate in grammar correction and take over the transmission of linguistic knowledge, and when adaptive algorithms deliver precise knowledge through dynamically adjusted learning paths, the monopolistic position of teachers as "knowledge authorities" has already collapsed. This crisis is not only reflected in the functional dissolution

caused by technological substitution but also in the deeper predicament of the alienation risk inherent in education itself—algorithmic biases triggering cultural cognition colonization. However, the crisis itself harbors opportunities for evolution. Through the triple reconstruction of cognitive frameworks, practical models, and ethical stances, English teachers are transforming into "wisdom collaborators," a role that is neither a passive compromise to technology nor a mechanical replication of tradition but rather a redefinition of the ultimate value anchor of education within a human-machine symbiotic ecosystem.

2.1 Connotation of Wisdom Collaborator

In the context of generative artificial intelligence (Gene AI) reshaping the educational ecosystem, "wisdom collaborator" refers to a new professional role in which teachers integrate the complementary advantages of human intelligence (HI) and artificial intelligence (AI), applying critical thinking to guide technological applications and leveraging educational wisdom to optimize human-machine collaboration. Its essential characteristics are embodied in threefold synergy: cognitive synergy—constructing a dynamic HI-AI knowledge network; emotional synergy—maintaining intersubjective dialogue between teachers and students; and ethical synergy—balancing technological efficiency with the value of nurturing individuals (Fullan & Langworthy, 2014). This role transcends the limitations of the traditional "knowledge monopolist," shifting the focus to designing differentiated learning paths, cultivating higher-order thinking skills, and shaping the humanistic spirit of the digital age (Wenger-Trayner, 2015).

2.2 Cognitive Framework Reconstruction: From Knowledge Monopolist to Metacognitive Navigator

The transformation of English teachers' roles fundamentally involves the reconstruction of cognitive frameworks, encompassing shifts in knowledge perspectives and teaching logic. In traditional teaching, teachers act as authoritative figures monopolizing the dissemination of knowledge. However, in the age of intelligence, students can independently access information through online platforms and AI tools. Teachers must reconstruct their knowledge perspective, transitioning from "monopolists" to "knowledge integrators" and "metacognitive guides," helping students to filter, evaluate, and apply knowledge (Zimmerman, 2002). Connectivist learning theory posits that knowledge in the digital age is dynamically generated (Siemens, 2005). Teachers should guide students in building knowledge networks and fostering autonomous learning abilities. Specific pathways for cognitive restructuring include technology empowerment, context creation, and the establishment of learning communities.

2.2.1 Technology empowerment: Building a "Data-Diagnosis-Intervention" closed loop

Based on connectivism and technology-enhanced learning, knowledge acquisition shifts toward a dynamic, networked model. English teachers need to use intelligent tools for precise interventions, such as employing AI technologies for real-time learning data capture through speech analysis or automated essay grading systems (Chen & Cheng, 2021). Teachers can accurately identify cognitive blind spots. For instance, when AI flags fluctuations in reading comprehension accuracy, teachers must combine daily observations to determine whether this stems from emotional issues (Pekrun, 2006) or analyze task design based on cognitive load theory (Sweller, 2011) to assess whether it exceeds working memory capacity. This forms a collaborative model of "technological diagnosis humanistic intervention."

2.2.2 Context creation: Designing immersive learning experiences

Situated cognition theory (Brown et al., 1989) and multimedia learning principles (Mayer, 2020) highlight the role of authentic contexts in promoting knowledge transfer. Using VR/AR technologies to simulate real-life language scenarios, such as enabling students to engage in conversations on "English-speaking country streets" through virtual reality, enhances the authenticity of language application (Mayer, 2020). Teachers, as "context designers," must integrate core disciplinary competencies into the design of multimodal tasks (Jewitt, 2009).

2.2.3 Learning communities: Collaborative creation and reflection between teachers and students

Sociocultural theory and the human-machine collaboration framework (Hwang et al., 2020) emphasize the social nature of cognitive development, meaning human cognition evolves through symbolic tools like language and technology in social interactions (Vygotsky, 1978). Within learning communities, teachers and students construct knowledge through collaborative dialogues such as peer reviews of writing and project discussions. Hwang et al.'s human-machine collaboration framework extends sociocultural theory, highlighting the role of intelligent technologies as cognitive mediators in collaborative learning (Hwang et al., 2020). This technology-empowered interactive model extends the sociality of learning communities from physical spaces to digital ecosystems. For example, students can outline a story framework, with AI generating plot suggestions that are subsequently refined and optimized into cross-media works. This process cultivates human-machine collaborative thinking.

2.3 Reconstruction of Practice Models: From One-Way Instruction to Eco-Engineer

In the educational ecological transformation triggered by Gene AI, English teachers need to break away from the linear structure of "podium-textbook-exam" and shift toward building a dynamic and balanced "language learning ecosystem." This reconstruction involves five dimensions.

2.3.1 Designer of learning environments

Teachers utilize systems thinking to create multidimensional interactive environments and hybrid virtual-physical spaces, such as designing cross-cultural communication scenarios with AI chatbots (e.g., simulating United Nations conferences), while preserving the interpersonal warmth of in-person. This "mixed reality" environment requires teachers to master the principles of learning space design (Benson, 2016), maintaining a tension between technological intervention and human interaction, akin to the symbiotic relationship between "non-human actors" and human agents emphasized in Latour's (2005) Actor-Network Theory.

2.3.2 Curator of learning resources

The teacher's role should shift from textbook interpreter to a "super node" within a resource network. By curating AI-generated personalized reading materials (such as those from the Newsela intelligent grading system), integrating expert lecture videos from MOOCs platforms, and guiding students in collaborative editing of Wikipedia entries, teachers are effectively practicing Siemens' (2005) Connectivist Learning Theory—knowledge exists within connections. This curatorial role requires the establishment of dynamic evaluation mechanisms, such as using learning analytics dashboards to monitor the effectiveness of resource utilization.

2.3.3 Architect of learning relationships

With intelligent tutoring systems taking over the function of knowledge transmission, teachers should focus on constructing a triadic interaction network of "learner-AI-community." For instance, they can organize online writing workshops where tools like Grammarly, native-speaking volunteers, and students collaborate. This practice aligns with Wenger's (1998) Community of Practice theory, where teachers act as "boundary coordinators" to facilitate cross-system dialogues.

2.3.4 Interpreter of learning data

Faced with digital learner profiles generated by AI systems, teachers need to develop data literacy to make value-based judgments. For example, beyond the grammar scores provided by intelligent writing assessment tools, teachers should supplement with qualitative analyses of cultural metaphors in texts. This "algorithmic critical literacy" (Williamson, 2017) effectively reconciles the conflict between instrumental rationality and humanistic care, embodying Weber's notion of value rationality transcending instrumental rationality.

2.3.5 Guardian of learning ethics

In the context of AI permeating language learning, teachers need to establish an ethical framework for technology use. This includes using blockchain technology to track the intellectual property of AI-generated content, such as citing the source when referencing examples generated by DeepSeek, and designing "digital disconnection" periods to protect the emotional experience of language acquisition. This requires teachers to possess technological philosophical literacy and to implement Noddings' (1984) ethics of care, emphasizing "relational existence" in practice

This dynamic and balanced "language learning ecosystem" has led to a fundamental paradigm shift in teaching: teachers transition from being transmitters of standardized content to becoming "gardeners" who maintain the balance of the language learning ecosystem. By introducing carefully designed cognitive disturbances such as critical thinking tasks and cross-cultural conflict scenarios, they stimulate the system's self-organizing evolution, ultimately fostering the emergent development of learners' language proficiency.

2.4 Reconstructing Ethical Stances: From Technology Consumers to Algorithm Co-constructors

In the context of English teachers' ethical stance reconstruction in the Gene AI era, the core lies in breaking through the passive identity of technology consumers and achieving the return of educational subjectivity through participation in the co-construction of algorithmic values. This can be elaborated from the following dimensions.

2.4.1 The awakening of critical technological awareness

Teachers need to transcend instrumental rationality and establish "algorithmic literacy," systematically understanding the biases in training data of natural language processing models (such as issues of discrimination against English variants) and the mechanisms of value embedding. This requires teachers to grasp the basic principles of machine learning and to deconstruct the power relations behind AI-generated content, such as the neo-colonial tendencies in corpora (Feenberg, 2002). For example, in the application of essay grading systems, teachers should guide students to question: Which English variants are labeled as "standard"? Does this standard reinforce linguistic hegemony?

2.4.2 Processual intervention in algorithm development

By utilizing the "Teacher Advisory Committee" mechanism of educational technology companies, teachers can directly participate in the calibration of values during model training. For instance, in the development phase of dialogue systems, teachers can advocate for the inclusion of intercultural communication competency indicators in the algorithm evaluation system, ensuring that AI tools not only assess grammatical correctness but also recognize culturally inclusive expressions (Selwyn, 2021). The "Moral Machine" project at MIT demonstrates that educators' involvement can lead to more humanized decision-making logic in autonomous driving ethical algorithms, providing a methodological reference for educational AI development.

2.4.3 Ethical review framework for teaching practices

Establish a three-tier review process for AI applications: conduct value impact assessments before technology deployment (e.g., whether the presentation of knowledge reinforces technological determinism); implement dynamic monitoring during use (focusing on signs of alienation in students' cognitive development); and engage in meta-ethical discussions after class (e.g., comparing feedback differences between human teachers and AI). This framework draws on the "moral enhancement cycle" theory proposed by information ethicist Floridi (2013), emphasizing that technological applications must serve the fundamental goal of human flourishing.

2.4.4 constructing data sovereignty awareness

In AI-enabled personalized learning scenarios, teachers should become guardians of students' data rights. This includes: refusing to unconditionally supply educational data for commercial algorithm training; guiding students to understand the cognitive shaping risks of data tracking; and establishing "algorithm transparency agreements" in the classroom (e.g., requiring systems to disclose recommendation logic). Beer (2017) critiques algorithmic culture, pointing out that data colonialism is reshaping educational power structures, and teachers' ethical responsibility lies in constructing critical data practices.

2.4.5 Bridging role in interdisciplinary dialogue

By utilizing platforms such as educational neuroscience conferences and digital humanities forums, facilitate value negotiations between language education experts and AI engineers. The practice of Stanford University's "Human-Centered AI Institute" shows that when English teachers provide examples of emotional support in second language acquisition, it can effectively improve the empathy design of emotional computing models (Castañeda & Selwyn, 2020). This cross-disciplinary dialogue allows technological development to break free from the shackles of efficiency supremacy and return to the essence of education.

III Conclusion

The rise of generative AI marks a new paradigm of "human-machine collaboration" in English education. In this process, the role of English teachers faces both deconstructive challenges and reconstructive opportunities. In traditional teaching, the teacher's core functions as a "knowledge authority" (such as knowledge delivery, assignment grading, and standardized assessment) are being efficiently replaced by AI tools. However, the humanistic attributes of teachers complement the rationality of technology, forming the foundation of their irreplaceability.

This study indicates that the essence of the teacher's transformation lies in the rebalancing of "instrumental rationality" and "humanistic wisdom." Through the reconstruction of cognitive frameworks, teaching models, and ethical stances, teachers can overcome the anxiety of being "marginalized by technology" and instead become the "key nexus of symbiosis between human intelligence and AI." For instance, while AI handles standardized knowledge delivery and data analysis, teachers can focus on cultivating higher-order thinking skills such as critical reading, cross-cultural communication, and emotional support, creating a collaborative model where "machines enhance efficiency, and humans add value."

This transformation concerns not only the professional development of individual teachers but also the overall restructuring of the educational ecosystem. In the future, the goal of English education should shift from "language skills training" to "holistic cognitive development." Evaluation systems should evolve from "standardized testing" to "growth-oriented evidence chains," and teaching teams should achieve refined collaboration through specialized roles such as AI resource engineers, learning data analysts, and humanistic mentors. The study also reveals that teachers' critical technological and ethical literacy will become a key competency—they must not only leverage AI to enhance efficiency but also remain vigilant against algorithmic bias and cultural hegemony, ensuring that technology applications align with educational equity and humanistic values (Lin Min et al., 2024).

In summary, generative AI is not a replacement for teachers but a "catalyst" for educational innovation. Only by actively embracing change and upholding the core mission of education in the context of technological empowerment can English teachers continue to serve as "wise collaborators" and "guardians of humanity" in future education, guiding students to transcend linguistic and cultural boundaries and achieve true growth and transformation in the AI era.

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