

Deep Learning Perspective: Targeted AI Empowerment for Innovation and Practice in English Teachers' Instructional Design

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Abstract: The potential of artificial intelligence (AI) to promote deep learning in foreign language teaching is garnering increasing attention. Focusing on deep learning objectives, this paper explores how AI can precisely empower English teachers to innovate and implement instructional design. Through literature review and case analysis, it reveals AI's application potential in personalized learning path planning, intelligent resource recommendation, and smart assessment feedback. These applications effectively facilitate the renewal of teachers' pedagogical concepts and the diversification of teaching methods. The study demonstrates the efficiency and precision of AI-empowered instructional design, analyzes its positive impact on enhancing student learning outcomes, stimulating interest, and cultivating higher-order thinking skills, and provides theoretical and practical references for the intelligent transformation of English education in the new era.

Keywords: Deep Learning; Artificial Intelligence (AI); English Teachers; English Classroom.

1. Introduction

In recent years, the deepening reform of basic education in China and the establishment of the core competencies concept for English have positioned curriculum reform as the cornerstone driving profound transformation in educational practice. Research perspectives on English classroom teaching have shifted fundamentally from solely focusing on learning outcomes to the learning process. Departing from the traditional model of mechanically transmitting shallow linguistic knowledge, current English curriculum reforms prioritize cultivating students' core competencies, aiming to effectively implement the fundamental task of fostering well-rounded individuals. Consequently, English learning transcends the mere acquisition of language knowledge and skills, emphasizing instead the deep development of language application abilities and the cultivation of higher-order thinking skills, facilitating a transition from surface learning to deep learning.

Concurrently, the rapid development of AI technology in China, particularly the widespread integration of AI, digital resources, big data, and cloud platforms into education, has injected powerful momentum into educational innovation. The advent of the AI era provides conceptual guidance for shifting student learning from surface to deep levels and constructs unprecedented learning environments through rich digital resources, precise data analytics, and flexible cloud platform support [1]. Deep learning, as a pedagogical model meeting the demands of the information age, has become an inevitable trend and core requirement for teaching reform, encouraging students to actively explore, think critically, and engage in innovative practice.

2. AI-Powered Innovation in English Teachers' Instructional Design

The traditional curriculum model comprises three core elements: teachers, students, and teaching materials. With the advent of the information age, Wen Qiufang proposed a four-

element model integrating Artificial Intelligence (AI) as a new element. In this model, AI acts as an enhancer and connector within the interactions among teachers, students, and teaching materials, strengthening their interconnections and injecting new impetus into educational transformation [2]. This signifies that AI can be leveraged to precisely empower students' deep learning, enhancing the depth, richness, and breadth of English classroom teaching [3].

2.1. Intelligent Lesson Preparation for Personalized Teaching and Tiered Objectives

During lesson preparation, teachers must understand individual student differences to ensure activities foster cognitive and affective development, guided by deep learning objectives. Integrating AI technology is key to addressing capacity constraints. Using intelligent platforms, teachers assign individual tasks; students respond via their interfaces. The platform automatically collects and analyzes performance, interests, and ability levels, enabling real-time tracking of learning trajectories. Teachers leverage this data-driven insight to design highly personalized content and strategies.

For example, when planning theme-based reading extensions for writing tasks (e.g., an appeal letter for the "Clear Your Plate" campaign in Unit 6, FLTRP Senior English Compulsory Book 2), teachers traditionally faced challenges matching texts to varied student reading levels (e.g., B-, B, B+). AI generation tools (e.g., Baidu's ERNIE Bot) efficiently provide level-appropriate articles, saving time while ensuring material relevance and diversity, promoting personalized learning paths [1].

["I would like to offer three English texts on the same topic for Chinese high school learners at the level of B1-, B1 and B1+ respectively. The topic is Clear Your Plate campaign. The text of B1-level is 350-word long, the text of B1 level is 400-word long and the text of B1+ level is 450-word long. The major content includes: (1) the poorest region in the world, where people often suffer from hunger; (2) how much food is

wasted around the world every day; (3) future potential food crises. Can you help me complete the tasks above according to the requirements?"

Text for B1- Level (350 words)

Title: The Call to Clear Your Plate

In the world, there are places where people go to bed hungry every night. These are the poorest regions, where food is scarce and every meal is a struggle. Imagine not knowing when your next meal will be or having to share a small portion of food with your whole family. This is a reality for millions of people around the globe.

But while some are starving, others waste a lot of food. Did you know that each day, tons of perfectly edible food are thrown away? This happens in homes, restaurants, and even grocery stores. The amount of wasted food is shocking – it's like throwing away a whole meal for every person on Earth!

To address this issue, many countries have started the "Clear Your Plate" campaign. It's a simple idea: take only what you can eat and finish your plate. This small act can make a big difference. By reducing food waste, we can help feed those in need and protect our planet's resources.

So, next time you sit down for a meal, think about those who are hungry. Order or cook just enough food for yourself and your family. And remember, every bite counts. Together, we can make a change and create a world where no one goes hungry.

Text for B1 Level (400 words)

The Global Hunger Crisis and the Power of Clearing Your Plate

In the vast expanse of our planet, there exists a stark contrast between abundance and scarcity. While some regions thrive with plenty of food, others are plagued by hunger and malnutrition. The poorest regions of the world, particularly in Africa and parts of Asia, face a daily struggle for survival. Children go to bed with empty stomachs, and families often have to choose between food and other basic necessities.

This is a global issue that demands our attention. Alongside the human suffering, the waste of food resources is alarming. Each day, billions of tons of food are discarded, much of it still edible. This not only exacerbates the hunger problem but also contributes to environmental degradation and climate change.

The "Clear Your Plate" campaign is a call to action for everyone. It urges us to be mindful of our food consumption and to reduce waste wherever possible. By taking only what we need and finishing our meals, we can help alleviate the hunger crisis and protect the environment.

Moreover, reducing food waste can also contribute to future food security. As the world's population continues to grow, the demand for food will increase. By minimizing waste, we can ensure that more food reaches those who need it most.

Let's all play our part in the "Clear Your Plate" campaign. Every small action adds up to make a big difference. Together, we can create a world where everyone has access to nutritious food and where waste is a thing of the past.

Text for B1+ Level (450 words)

The Urgency of the Clear Your Plate Campaign Amidst the Looming Food Crisis

As the world grapples with multiple challenges, one of the most pressing issues remains the global hunger crisis. In the shadows of progress and prosperity, millions of people still

struggle for their daily bread. The poorest regions of the world, particularly in developing countries, bear the brunt of this crisis, where children and women are disproportionately affected.

The stark reality is that while hunger persists, food waste is at an all-time high. Each day, vast amounts of food are discarded, often due to consumerism, overproduction, and inefficient distribution systems. This not only undermines efforts to combat hunger but also threatens food security and environmental sustainability.

The "Clear Your Plate" campaign emerges as a potent symbol of hope and action. It is a reminder that each one of us has the power to make a difference, no matter how small. By adopting simple practices like ordering only what we can eat, storing food properly, and donating excess to those in need, we can significantly reduce food waste and contribute to a more equitable food system.

Moreover, the campaign highlights the urgent need for systemic change. Governments, businesses, and individuals must work together to address the root causes of food waste and hunger. This includes improving agricultural practices, enhancing food distribution networks, and promoting sustainable consumption patterns.

As we face the looming threat of future food crises, the "Clear Your Plate" campaign takes on even greater significance. It is a call to action, urging us to act now and work towards a world where food is valued, shared, and consumed responsibly.]

2.2. Resource Integration for Core Competency Implementation and Classroom Depth

In transforming English classrooms towards cultivating learning abilities, cultural awareness, and thinking skills, teachers design interactive, inquiry-based activities. AI in education provides efficient platforms, vast teaching resources in the cloud, breaking spatiotemporal constraints. These resources cover language learning aspects and incorporate elements like cross-cultural understanding and critical thinking training.

Teaching Unit 1 "Food for Thought" (FLTRP Senior English Compulsory Book 2) exemplifies this. AI recommends relevant materials (e.g., BBC documentary clips on dietary cultures) based on student behavior. AI also helps teachers quickly find comprehensive resources on cultural differences (ingredients, cooking, etiquette). For interactive learning, AI assists in designing authentic scenarios (e.g., cultural conflicts) for language production and cross-cultural skill development. To stimulate critical thinking, AI can identify debate topics (e.g., "Impact of Fast Food Culture on Global Health") and assist in evaluating student arguments during debates [4].

2.3. Smart Assessment for Targeted Feedback and Enhanced Language Production

AI's empowerment extends to post-class consolidation. AI collects multi-dimensional feedback (homework, tests, learning trajectories). Using analytics, it generates individual learning profiles, highlighting strengths and weaknesses. AI produces personalized reports, offering teachers precise evaluation suggestions and tailoring student learning paths and revision plans [5].

For the "Food for Thought" unit: AI simulates real speaking scenarios (e.g., ordering food), providing instant feedback on

pronunciation, grammar, and expression. For comparative essays requiring critical thinking, AI analyzes structure, argumentation, and language accuracy, offering targeted improvement suggestions. AI provides level-specific feedback (e.g., logic puzzles for weak critical thinkers; cultural resources for deeper understanding). Furthermore, AI automates grading and Q&A, reducing workload and freeing time for innovation and personalized guidance.

2.4. AI-Enhanced Teacher Competency Development

The 21st century makes teacher-AI collaboration essential. AI is a core driver of teacher professional growth. Specifically, AI's advanced language capabilities offer unprecedented language enhancement opportunities for non-native English speaking (NNES) teachers, indirectly boosting student proficiency.

New teachers often struggle with native-like fluency and cultural adaptability. Traditional teaching prioritized grammar, leading to unnatural student output. Teachers lacked resources to correct non-idiomatic expressions [2]. AI addresses this: Inputting student expressions allows data analysis to identify idiomatic and non-idiomatic usage, providing teachers immediate feedback, broadening linguistic repertoire, and prompting strategy adjustment. AI also integrates cross-disciplinary resources, offering teachers learning opportunities and intelligently recommending relevant materials (papers, courses) to enhance professional competency, sustaining curriculum reform momentum.

3. Conclusion

Facing rapid technological change, future English classrooms must cultivate creators who collaborate with AI, possessing lifelong learning skills, interdisciplinary thinking, and problem-solving abilities. Consequently, English teachers must prioritize cultivating deep learning capacity. Teachers

must embrace change, leverage AI to empower instructional design for deeper content exploration, innovative methodologies, and comprehensive assessment. Using intelligent tools, teachers can discern student needs, design targeted tasks, and guide deeper understanding. Therefore, leveraging AI for targeted instructional design is essential for adapting to educational trends and fostering students' holistic development for the future.

References

- [1] Chen, Y. T. (2023). Research on the application of SPOC foreign language teaching model from the perspective of deep learning. *Foreign Language World*, (04), 91–96.
- [2] Wen, Q. F. (2024). English education in the era of artificial intelligence: Analysis of a four-element new curriculum model. *China Foreign Languages*, 21(3), 11–18.
- [3] Luo, Y. H. (2021). The connotation and construction of deep learning in high school English classrooms. *Curriculum, Teaching Material and Method*, 41(6), 96–102.
- [4] Jin, Y. F. (2024). Exploring the application of AI teaching strategies in junior high school English classrooms from the perspective of key competencies. *English for Middle School Students*, (16), 149–150.
- [5] Yan, Y. (2019). Exploring the path to promote students' deep learning in English teaching in the era of artificial intelligence. *Teaching & Administration*, (27), 106–108.
- [6] Zheng, W., & Liu, Y. X. (2018). Deep learning: Teaching improvement based on key competencies. *Educational Research*, 39(11), 56–60.
- [7] Liu, L. B. (2024). Exploration of college English teaching mode under the background of AI. *Journal of Hubei University of Economics (Humanities and Social Sciences)*, (06), 147–149.
- [8] Duan, M. J., & Zheng, H. Y. (2021). Research on a deep learning-based model for cultivating higher-order thinking. *Modern Educational Technology*, 31(03), 50–57.