

# Artificial Intelligence in University English Education Enhancing Teaching Efficiency and Learner Autonomy

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**Abstract:** Artificial Intelligence (AI) has increasingly become a vital tool in university English education, transforming traditional teaching and learning methods. This study explores how AI can enhance teaching efficiency and promote learner autonomy in higher education English classrooms. By reviewing current AI applications — such as intelligent content generation, adaptive learning systems, speech recognition, and automated assessment — this paper highlights the practical benefits of these technologies in improving personalized learning and instructional feedback. The findings indicate that AI not only supports more effective teaching practices but also empowers students to take greater control of their learning processes. The study concludes by discussing the challenges of AI integration, including ethical concerns and data privacy issues, and proposes future research directions to promote the sustainable and responsible integration of AI into university English education.

**Keywords:** artificial intelligence; university English teaching; learner autonomy; AI assessment tools; teaching innovation; educational technology

## 1. Introduction

In recent years, the rapid advancement of Artificial Intelligence (AI) has brought transformative changes to the field of education. Traditionally shaped by textbook-centered instruction and teacher-led activities, university English education is now being reimagined through the integration of intelligent technologies. This transformation is especially significant given the growing demands for teaching efficiency and the cultivation of learner autonomy — two core goals of modern higher education reform [1].

Despite ongoing reforms in curriculum design and pedagogical approaches, university English teaching in many regions still faces challenges such as large class sizes, insufficient personalized instruction, and limited out-of-class learning support. Meanwhile, English language learners are increasingly expected to develop lifelong learning capabilities, including self-regulation, independent progress assessment, and personalized learning strategies. These expectations necessitate innovative solutions capable of addressing systemic inefficiencies and empowering learners.

AI technologies — such as natural language processing, machine learning, and intelligent tutoring systems — offer new possibilities for optimizing English teaching practices. Intelligent writing assistants, automated pronunciation feedback, personalized content recommendation systems, and real-time analytics are just a few examples of how AI can reshape teaching and learning processes. When implemented effectively, AI has the potential to reduce teachers' instructional burden while enhancing learners' engagement, motivation, and autonomy.

This paper explores the applications of AI in university English education, with a particular focus on how AI can enhance teaching efficiency and foster learner autonomy.

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Through a synthesis of theoretical perspectives, practical applications, and case studies, the study investigates the dual role of AI in supporting teachers and empowering students. It also critically examines the challenges and ethical concerns associated with AI in educational contexts and proposes strategies for ensuring the responsible and effective integration of AI in English education.

## **2. Theoretical Foundations**

### *2.1. Definitions and Measures of Teaching Efficiency and Learner Autonomy*

Teaching efficiency in university English education refers to the degree to which instructional processes maximize learning outcomes while minimizing time and resource input. It is commonly evaluated through indicators such as student performance, curriculum coverage, teacher workload, and the adaptability of teaching strategies. Efficient instruction not only accelerates knowledge delivery but also enables differentiated learning to meet diverse learner needs.

Learner autonomy, a concept central to learner-centered education, is defined as the capacity of students to take control of their own learning. This includes setting goals, selecting strategies, monitoring progress, and evaluating outcomes. Some researchers have defined autonomy as "the ability to take charge of one's own learning". In practice, it is measured through self-regulated behaviors, engagement in independent study, and the use of metacognitive strategies.

Both teaching efficiency and learner autonomy are central to the transformation of English language education in the digital age. While efficiency emphasizes optimization of teaching inputs and outcomes, autonomy focuses on the learner's active role and responsibility. The integration of AI offers a technological pathway to enhancing both dimensions concurrently.

### *2.2. Educational Technology Theories: Constructivism and Autonomous Learning Theory*

The application of AI in university English education is grounded in several foundational learning theories. Constructivism posits that learners actively construct knowledge through experience rather than passively receive it. It advocates for interactive, personalized, and learner-driven environments — principles reflected in AI-enhanced tools such as intelligent tutoring systems and adaptive platforms.

Autonomous learning theory complements constructivism by focusing on the learner's ability to manage their own learning process. It supports environments that encourage goal-setting, reflection, and self-monitoring. AI facilitates these processes through personalized feedback, learning analytics, and intelligent recommendation systems.

Furthermore, connectivism — a theory developed in response to digital learning environments — argues that learning is the process of creating connections and developing networks. In AI-supported English education, this translates into leveraging digital platforms and data insights to foster meaningful interactions among learners, content, and learning contexts.

Collectively, these theories establish a pedagogical rationale for the integration of AI in fostering learner-centered and adaptive English instruction [2].

### *2.3. Core Concepts and Technologies of Artificial Intelligence in Education*

Artificial Intelligence (AI) refers to a suite of computational technologies designed to simulate human cognitive functions such as language comprehension, pattern recognition, and decision-making. In the domain of university English education, several core AI technologies — most notably Natural Language Processing (NLP), Machine Learning (ML), and Recommender Systems — play critical roles in enhancing both instructional delivery and learning personalization [3].

NLP enables machines to interpret and produce human language, facilitating applications such as automated essay evaluation, real-time grammatical correction, and AI-

powered conversational agents. These tools support both formative assessment and individualized feedback. ML algorithms process vast amounts of learner data to identify patterns, predict learning outcomes, and dynamically adjust instructional content. Recommender Systems further refine the learning experience by suggesting relevant resources and learning activities tailored to each learner's preferences, needs, and progress trajectory.

An overview of these technologies and their pedagogical applications is provided in Table 1, illustrating how AI contributes to optimizing teaching efficiency while simultaneously promoting learner autonomy through intelligent, adaptive learning environments.

**Table 1.** AI Technologies and Their Applications in University English Education.

AI Technology	Description	Applications in English Education
Natural Language Processing (NLP)	Enables understanding and generation of human language	Automated essay scoring, grammar correction, pronunciation feedback, chatbot conversation practice
Machine Learning (ML)	Algorithms that learn from data to make predictions or decisions	Analyze learning patterns, predict performance, personalize materials
Recommender Systems	Suggest content based on learner preferences and progress	Adaptive learning environments, personalized content recommendation
Additional Technologies	Speech recognition, computer vision, learning analytics	Gesture tracking, engagement monitoring, learning data analysis

- 1) Natural Language Processing (NLP): NLP enables machines to understand, interpret, and generate human language. Applications in English education include automated essay scoring, real-time grammar correction, pronunciation feedback, and chatbot-based conversation practice.
- 2) Machine Learning (ML): ML involves algorithms that learn from data to make predictions or decisions. In educational contexts, ML can be used to analyze students' learning patterns, predict academic performance, and personalize learning materials.
- 3) Recommender systems: These systems suggest personalized learning content, tasks, or resources based on learners' preferences, progress, and behavioral patterns. They are essential in creating adaptive learning environments that respond to individual learner needs and support autonomous learning.

Additional technologies such as speech recognition, computer vision (for gesture or engagement tracking), and learning analytics further expand AI's potential in education. Importantly, the effectiveness of these technologies depends not only on their technical sophistication but also on their pedagogical alignment and adherence to ethical standards. A solid understanding of these foundational technologies and theories enables educators and researchers to more effectively evaluate and design AI-driven interventions that enhance both teaching efficiency and learner autonomy in university English education.

### 3. Applications of AI in University English Teaching

This chapter explores real-world applications of artificial intelligence (AI) in tertiary English education. It illustrates how AI technologies enhance teaching methods, foster learner autonomy, and transform assessment and feedback processes. The tools and systems discussed herein are either actively used or have already been implemented in practical educational contexts both in China and globally.

### *3.1. AI-Assisted Teaching Methods*

#### *3.1.1. AI-Generated Instructional Content*

Large language models such as ChatGPT are increasingly being integrated into university-level English instruction to support the rapid development of customized learning materials. Instructors at universities such as the Communication University of China and Fudan University have reported using ChatGPT to generate reading passages, dialogue scripts, and grammar exercises tailored to specific course themes.

For example, a lecturer may input the topic "urban life and traditions" into ChatGPT and receive multi-level dialogues and discussion prompts tailored for classroom use, thereby streamlining material preparation and enhancing thematic relevance. This not only reduces teachers' workload but also ensures that instructional content is contextually appropriate and aligned with learners' proficiency levels.

#### *3.1.2. Intelligent Pronunciation Assessment Tools*

Speech recognition technologies embedded in applications such as iFlytek's Intelligent Oral Evaluation System and Duolingo's Speaking AI module are widely used for oral English training. These systems analyze pronunciation, intonation, and rhythm, delivering instant feedback and accuracy scores. iFlytek is frequently employed in Chinese high schools and universities to prepare for English exams, while Duolingo supports individualized practice in informal settings.

#### *3.1.3. Automated Grading and Teaching Analytics*

AI-enabled platforms like Xuexitong (a widely used Chinese higher education LMS) and Zhihuishu (a smart teaching system for universities) integrate automated grading systems capable of evaluating essays, multiple-choice questions, and oral tasks. These platforms also feature analytics dashboards that summarize class performance, track submission patterns, and visualize learning progress in real time. International tools such as ETS's e-rater system are used to score TOEFL essays, providing scalable writing assessment in formal contexts.

### *3.2. AI-Supported Learner Autonomy*

#### *3.2.1. Personalized Learning Pathways*

Platforms such as MOOC China, Xuexitong, and Coursera employ adaptive algorithms to customize learning sequences based on user behavior, preferences, and prior performance. These AI-driven systems recommend content based on test results, engagement patterns, and predicted learning needs, enabling differentiated learning at scale.

#### *3.2.2. AI-Powered Conversational Practice*

Apps such as ELSA Speak and SpeakPal incorporate speech recognition, pronunciation correction, and dialogue simulation features. Widely used in both formal and informal education, they allow students to engage in structured speaking practice with immediate, personalized feedback. These tools simulate human conversation and support autonomous oral skill development in flexible environments.

#### *3.2.3. Autonomous Writing Feedback*

Students can use AI writing assistants like Grammarly or Cambridge's Write & Improve to receive immediate grammar, style, and content feedback on their written work. These platforms help develop metacognitive awareness and enable repeated self-correction, supporting independent learning outside the classroom [4].

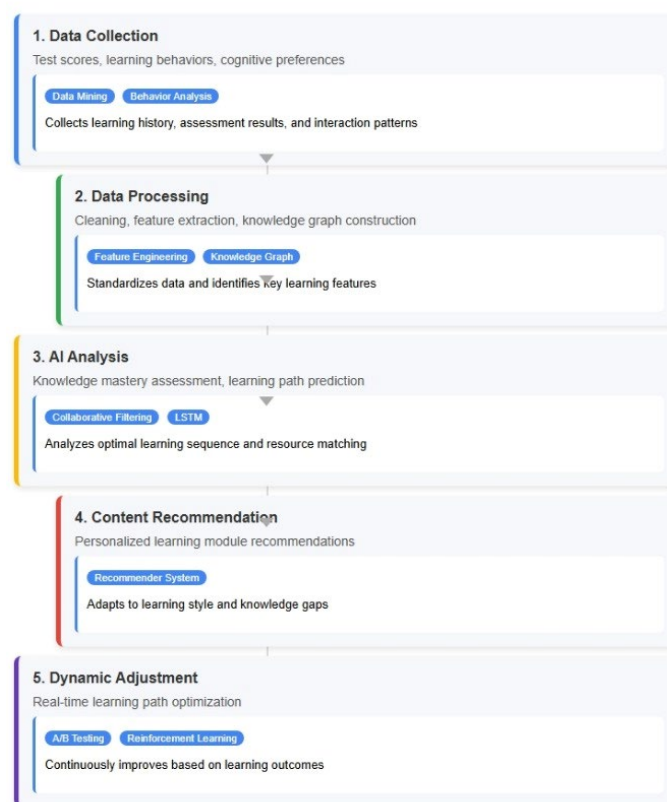
### 3.3. Intelligent Support for Personalized English Learning

Artificial intelligence enables personalized learning experiences by tailoring content, assessment, and feedback to the individual learner's needs. In university English education, AI facilitates adaptive support in three core aspects: learning path recommendation, automated feedback and assessment, and behavior tracking with motivation mechanisms.

#### 3.3.1. Personalized Learning Path Recommendation

One of the most impactful applications of artificial intelligence in college English education is the construction of personalized learning paths. These paths are dynamically generated based on learners' individual profiles, cognitive styles, and knowledge gaps. AI systems enable educators to go beyond uniform content delivery by recommending tailored learning sequences for different students.

To better understand how AI supports personalized learning in university English education, Figure 1 illustrates the typical five-stage process of AI-powered learning path recommendation, which includes data collection, learner profiling, content matching, path generation, and progress monitoring [5].



**Figure 1.** AI-Driven Learning Path Recommendation Workflow.

- 1) **Data Collection:** The system gathers learners' test scores, behavior logs, and cognitive preferences through tools such as click tracking and behavioral analysis.
- 2) **Data Processing:** This involves data cleaning, feature extraction, and the construction of knowledge graphs to represent student learning structures.
- 3) **AI Analysis:** Core algorithms such as collaborative filtering and decision trees are used to assess knowledge mastery, predict learning progress, and determine optimal learning sequences.

- 4) **Content Recommendation:** Based on the analysis, the system recommends customized learning resources, adapting to individual learning styles and areas of weakness.
- 5) **Dynamic Adjustment:** Learning paths are continuously refined based on real-time performance data, ensuring that the system remains responsive to each learner's progress.

This iterative and adaptive process significantly enhances learner autonomy and motivation, offering a level of personalization that traditional classroom settings may struggle to achieve. By visualizing and responding to learners' progress in real time, AI not only improves learning efficiency but also promotes sustained engagement [6].

### 3.3.2. Automated Feedback and Assessment

AI enables scalable and real-time evaluation of students' language performance across various skills. Systems such as automated essay scoring tools use natural language processing (NLP) to assess coherence, vocabulary richness, grammar, and task relevance. International platforms like ETS's e-rater are widely used to evaluate academic writing.

In addition, speech evaluation technologies provide instant feedback on pronunciation, fluency, and intonation. These systems help learners improve oral proficiency by highlighting specific phonetic deviations and offering corrective suggestions.

Real-time grammar correction engines, often integrated into writing tools and learning apps, further assist students by detecting and explaining errors, thereby fostering self-correction and independent learning.

### 3.3.3. Learning Analytics, Feedback, and Motivation

AI-enhanced learning platforms collect and visualize user data to support both instructors and learners. For example, Rain Classroom (an interactive teaching platform developed by Tsinghua University) and Chaoxing Fanya (a comprehensive online learning system widely used in Chinese universities) offer real-time dashboards tracking attendance, participation frequency, and mastery of course content. These insights inform instructors' teaching adjustments and encourage learners to self-monitor progress.

Moreover, vocabulary learning applications like Shanbay, Baicizhan, and Quizlet employ gamified elements powered by learning analytics. These include personalized progress graphs, mastery tracking, and reward-based milestones, which foster motivation and sustained engagement.

Example: After completing a vocabulary set, learners may receive a visual mastery chart and unlock a new level, which reinforces their effort through immediate positive feedback.

## 4. Case Studies or Empirical Evidence

### 4.1. Current Status of AI Teaching Platforms in Domestic and International Universities

In China, the adoption of AI teaching platforms in university English education has grown rapidly. A notable example is the "Squirrel AI" adaptive learning system, which employs machine learning and big data analytics to provide individualized learning paths for students based on their performance and behavior. This system has been widely deployed across hundreds of learning centers in cities such as Shanghai, Beijing, and Hangzhou. In addition, platforms like iWrite and Jukuu are used in many Chinese universities to assist in writing instruction by providing real-time feedback on grammar, vocabulary, and structure. These tools not only improve writing fluency but also reduce the burden on instructors by automating evaluation and revision suggestions. Such technologies reflect China's strong push toward AI-driven educational reform, aiming to increase teaching efficiency and promote student autonomy.

Internationally, universities have also embraced AI platforms to support English language instruction. At Germany's IU International University of Applied Sciences, the AI-

based learning assistant "Syntea" has demonstrated measurable impact by shortening students' study time by approximately 27% through personalized tutoring and progress tracking. In South Korea, Chonnam National University has investigated student use of AI tools such as Grammarly, Google Translate, and Naver Papago, finding that these technologies enhance students' confidence and writing ability when integrated appropriately into instruction. Additionally, institutions like Arizona State University in the United States have begun experimenting with generative AI tools like ChatGPT for writing support and classroom activities. These developments illustrate how AI is transforming language education globally by enabling greater learner autonomy and adaptive instruction [7].

#### *4.2. Impacts of AI on Learner Engagement and Autonomy*

Multiple empirical studies have demonstrated that AI technologies significantly enhance teaching efficiency and student learning outcomes in university English education.

In Germany, research at IU International University of Applied Sciences revealed that students using the AI teaching assistant "Syntea" across more than 40 courses reduced their average study time by approximately 27%, indicating that personalized AI-driven instruction can effectively accelerate learning progress.

Recent studies in Chinese universities have shown that students using AI-assisted learning tools reported improvements in English proficiency and increased learning motivation, particularly due to the personalized learning experiences these tools support [8].

#### *4.3. Changes in Learner Autonomy: Survey and Interview Findings*

AI technologies also show positive impacts on enhancing students' learner autonomy.

In Turkey, a study reported that 72% of university preparatory students improved their mastery of the present perfect tense after using an AI chatbot for English grammar learning. Many students expressed increased self-learning ability and confidence.

In Japan, research on pre-service teachers indicated that AI-assisted collaborative task-based learning helped improve critical thinking and digital literacy. The study also highlighted the essential role of teachers in guiding and supervising AI usage.

Empirical evidence from Chinese college classrooms suggests that AI-integrated tools, such as automated writing feedback systems (e.g., Grammarly, Write & Improve) and pronunciation apps (e.g., iFlytek's Intelligent Oral Evaluation System, ELSA Speak), have significantly enhanced students' motivation and engagement. Learners reported that instant error correction, personalized feedback, and real-time progress tracking were key factors contributing to their sustained interest in English learning. Notably, improvements were observed in both writing fluency and speaking accuracy, as students could practice repeatedly and receive immediate support independently, without direct teacher intervention [9].

### **5. Challenges and Ethical Considerations**

#### *5.1. Data Privacy and Security Issues*

With the increasing integration of AI technologies in university English teaching, vast amounts of student data are generated and processed. This includes personal identification, learning habits, assessment scores, and interaction logs. The collection and storage of such sensitive information raise significant privacy concerns. Institutions must ensure compliance with international and local data protection laws, such as the General Data Protection Regulation (GDPR) in Europe or China's Personal Information Protection Law (PIPL). Beyond legal compliance, ethical data management practices require transparency about data usage. It also involves obtaining informed consent and providing students with control over their data. Furthermore, cybersecurity threats like hacking and data breaches pose risks that could undermine trust in AI systems. Therefore, universities must

invest in robust encryption, secure data storage solutions, and regular security audits to safeguard student information [10].

### *5.2. Changing Role of Teachers and Technology Dependence*

The integration of AI in educational settings profoundly changes the teacher's traditional role. Instead of solely delivering content, teachers increasingly act as facilitators, mentors, and designers of learning experiences, leveraging AI tools to provide personalized support. However, this transition also brings challenges, including diminished teacher autonomy and potential over-reliance on AI for instructional decisions. If educators become too dependent on AI-generated recommendations or automated grading, their critical pedagogical judgment may weaken, potentially impacting teaching quality. Moreover, the rapid pace of technological change requires continuous teacher training and professional development to ensure educators are equipped to effectively collaborate with AI tools. Balancing human insight with technological assistance is essential to maximize educational outcomes without compromising the irreplaceable human elements of empathy, motivation, and contextual understanding [11].

### *5.3. Accuracy and Bias in AI Systems*

AI-powered teaching tools heavily depend on data quality and algorithm design. However, these systems can inherit biases from their training data, leading to unfair or inaccurate results. For example, speech recognition software may have difficulty accurately understanding non-native or regional accents, causing incorrect feedback and learner frustration. Similarly, automated essay scoring systems might unintentionally favor certain writing styles or cultural norms, disadvantaging some students. Such inaccuracies not only affect learner motivation but also raise ethical concerns about fairness and inclusivity. To mitigate these issues, regular audits, diverse training datasets, and transparency in AI decision-making are essential. Additionally, involving educators in reviewing AI outputs and providing contextual interpretation helps ensure AI supports equitable learning rather than hindering it.

### *5.4. Educational Equity and the Digital Divide*

Although AI offers great potential to personalize and enhance language learning, its benefits are not equally accessible to all students. Socioeconomic disparities mean many learners lack reliable internet access, modern devices, or the digital skills needed to use AI platforms effectively. This digital divide risks deepening existing educational inequalities, particularly for students in rural or disadvantaged areas. Addressing this challenge requires coordinated policy measures, including investments in educational infrastructure, affordable technology access, and digital literacy training. Furthermore, AI developers and educators should prioritize inclusivity by designing tools that function well on low bandwidth, support multiple languages, and offer user-friendly interfaces. Only through such comprehensive efforts can AI-enhanced education fulfill its promise without leaving vulnerable groups behind.

## **6. Strategies and Recommendations**

### *6.1. Teacher Training and AI Literacy Enhancement*

To effectively integrate AI into university English education, comprehensive teacher training programs are indispensable. Such programs should not only focus on technical skills — such as operating AI tools, understanding their algorithms, and interpreting AI-generated data — but also emphasize pedagogical implications, ethical considerations, and critical thinking about AI's role in education. Continuous professional development and peer collaboration networks can support teachers in staying updated with the latest AI advancements. Moreover, fostering teachers' confidence and willingness to experiment with AI-based methods can accelerate innovation in teaching practices. Training should



also address resistance and anxiety that some educators may feel towards technology adoption, providing psychological and institutional support [12].

#### *6.2. Building a Human-Centered AI-Assisted Teaching System*

A human-centered approach to AI integration in English teaching requires balancing technological efficiency with empathy and contextual awareness. AI tools should be designed with flexibility, allowing customization according to specific course goals and diverse student needs. For example, AI can help generate adaptive learning paths, but teachers must remain able to intervene and adjust content based on real-time classroom dynamics. Transparency in AI decision-making fosters trust among students and educators; thus, AI feedback should be interpretable and explainable. Additionally, safeguarding students' emotional well-being by avoiding over-monitoring and respecting privacy promotes a positive learning environment. The goal is to enhance, not replace, the human touch in education.

#### *6.3. Policy Support from Educational Administrators*

Policy-level support is foundational for the sustainable deployment of AI in university settings. Educational leaders should develop strategic plans that integrate AI within broader institutional goals for quality and equity. Policies must guarantee that investments prioritize inclusive access to AI tools, especially for under-resourced departments and marginalized student groups. Additionally, data governance frameworks should be established to protect student privacy, including transparent consent processes and clear accountability mechanisms. Incentives for innovation, such as grants or recognition programs for AI-based teaching projects, can motivate faculty engagement. Finally, fostering partnerships with AI technology providers ensures that universities have a say in the development of tailored educational solutions [13].

#### *6.4. AI System Evaluation and Continuous Optimization*

Evaluation of AI systems in education should be an ongoing, iterative process involving multiple stakeholders. Quantitative data — such as improvements in student test scores, reduced grading time, and engagement metrics — provide objective measures of AI effectiveness. However, qualitative insights from teacher and student surveys, focus groups, and classroom observations reveal nuanced impacts and unintended consequences. Feedback loops enable developers to refine algorithms, address biases, and improve user interfaces. Furthermore, adaptive evaluation frameworks should consider diversity in learner backgrounds and course formats, ensuring AI solutions remain relevant and equitable. Building institutional capacities for such monitoring and encouraging an open culture around AI experimentation fosters continuous improvement.

### **7. Conclusion and Future Directions**

Artificial intelligence has demonstrated significant potential in enhancing teaching efficiency and promoting learner autonomy in university English education. Through intelligent content generation, automated assessment, and personalized learning support, AI technologies can effectively reduce educators' workload while providing students with tailored learning experiences that increase engagement and motivation. However, the integration of AI should not diminish the essential role of teachers; rather, a collaborative relationship between educators and AI systems is crucial to maximize pedagogical outcomes. Teachers bring irreplaceable contextual understanding, empathy, and guidance that complement AI's data-driven capabilities.

Looking ahead, future research should focus on the development of multimodal AI learning systems that integrate text, speech, and visual inputs to better mimic human teaching interactions and accommodate diverse learner needs. Additionally, exploring AI tools designed for cross-cultural language teaching can help address the challenges of

globalized education and cultural differences. Moreover, ongoing attention to ethical considerations, system transparency, and inclusive design will be vital to ensure equitable access and responsible use of AI in education. As AI continues to evolve, its thoughtful integration promises to transform university English education into a more efficient, engaging, and learner-centered process.

## References

1. R. Jiang, "How does artificial intelligence empower EFL teaching and learning nowadays? A review on artificial intelligence in the EFL context," *Front. Psychol.*, vol. 13, 1049401, 2022, doi: 10.3389/fpsyg.2022.1049401.
2. P. John, "Constructivism: Its implications for language teaching and second-language acquisition," *Pap. Educ. Dev.*, no. 33–34, Mar. 2018.
3. J. H. Woo and H. Choi, "Systematic Review for AI-based Language Learning Tools," *arXiv Prepr. arXiv:2111.04455*, 2021, doi: 10.48550/arXiv.2111.04455.
4. L. Wang and W. Li, "The Impact of AI Usage on University Students' Willingness for Autonomous Learning," *Behav. Sci.*, vol. 14, no. 10, 956, 2024, doi: 10.3390/bs14100956.
5. D. Daflizar and E. Petraki, "Readiness for autonomous English language learning: The case of Indonesian undergraduate students," *Indones. J. Appl. Linguist.*, vol. 11, no. 3, pp. 515–526, 2022, doi: 10.17509/ijal.v11i2.34259.
6. L. Wei, "Artificial intelligence in language instruction: impact on English learning achievement, L2 motivation, and self-regulated learning," *Front. Psychol.*, vol. 14, 1261955, 2023, doi: 10.3389/fpsyg.2023.1261955.
7. M. A. Heidelmann, "The impact of AI-supported teaching in academia: Potentials and limits of chatbots for transformative education at universities," *EDULEARN24 Proc.*, pp. 7570–7570, 2024, doi: 10.21125/edulearn.2024.1777.
8. I. P. Egel, "Learner autonomy in the language classroom: From teacher dependency to learner independency," *Procedia Soc. Behav. Sci.*, vol. 1, no. 1, pp. 2023–2026, 2009 doi: 10.1016/j.sbspro.2009.01.355.
9. T. Xu and H. Wang, "The effectiveness of artificial intelligence on English language learning achievement," *Syst.*, vol. 125, 103428, 2024, doi: 10.1016/j.system.2024.103428.
10. N. Hockly, "Artificial Intelligence in English Language Teaching: The Good, the Bad and the Ugly," *RELC J.*, vol. 54, no. 2, pp. 1–15, 2023, doi: 10.1177/00336882231168504.
11. H. Crompton, A. Edmett, N. Ichaporia, and D. Burke, "AI and English language teaching: Affordances and challenges," *Br. J. Educ. Technol.*, vol. 55, no. 6, pp. 2503–2529, 2024, doi: 10.1111/bjet.13460.
12. B. Younis, "The artificial intelligence literacy (AIL) scale for teachers: A tool for enhancing AI education," *J. Digit. Learn. Teach. Educ.*, vol. 41, no. 1, pp. 37–56, 2025, doi: 10.1080/21532974.2024.2441682.
13. W. Holmes, M. Bialik, and C. Fadel, *Artificial Intelligence in Education: Promises and Implications for Teaching and Learning*. Boston, MA: Center for Curriculum Redesign, 2019. ISBN: 9781794293700.

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