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The integration of AI technology and critical thinking in English major education in China: opportunities, challenges, and future prospects

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Abstract

This paper addresses the call to integrate Artificial Intelligence (AI) technology and critical thinking in English major education in China. By examining the perspectives of university, college, and departmental leaders at Shantou University, this paper explores the integration of AI and critical thinking in English major education in China, focusing on opportunities, challenges, and future directions. Through a polylogue with institutional leaders at Shantou University, the paper provides insight into how AI tools can enhance personalized learning, improve academic outcomes, and better prepare students for the global workforce. However, the findings also highlight the ethical and pedagogical challenges of AI, such as the risk of exacerbating educational inequalities and compromising critical thinking. The paper advocates for an approach that balances AI proficiency with the development of independent thinking, ensuring that students are well equipped for the future.

Keywords: AI in education; critical thinking; English major; China; higher education; curriculum innovation

Introduction

The swift progression of Artificial Intelligence (AI) technology has led to transformative changes across numerous sectors, notably higher education. This evolution has sparked a growing demand to embed AI into curriculum development (Kostka & Toncelli, 2023; Southworth et al., 2023; Zhang et al., 2023). As educational institutions worldwide increasingly integrate AI technologies into their curricula, understanding the potential benefits and challenges of such integration has become critical areas of inquiry (Jeon et al., 2024;

Zhang & Cao, 2022). This integration not only promises to enhance language learning experiences by providing personalized feedback but also poses challenges such as assessing learning outcomes, addressing ethical concerns, and preparing educators and students for a rapidly changing technological landscape in the domain of digital applied linguistics. Consequently, these developments necessitate a comprehensive examination of how AI can be effectively and ethically incorporated into language education practices to maximize its benefits while mitigating potential challenges.

AI has been increasingly adopted in educational contexts, offering personalized learning experiences, enhancing teaching efficiency, and providing data-driven insights into student learning patterns and guiding educators into an era of pedagogical innovation. Recently, AI has been utilized to improve the technological literacy of graduates to enhance competitiveness in the global market (Milberg, 2024). In the context of English language education, particularly writing, AI has the potential to revolutionize traditional teaching methods by offering tailored feedback, facilitating interactive learning experiences, and supporting language acquisition through tools such as automated essay scoring and intelligent tutoring systems (Teng, 2024), suggesting “a community of practice centered on the exploration of ChatGPT” that may possibly help educators and students feel confident in “experimenting with AI applications and addressing associated challenges” (p. 54). However, this also requires an enhancement of teachers’ and students’ AI-related digital competences in higher education “to create meaningful learning environments to deepen students’ learning experiences and boost their capacities” (Ng et al., 2023, p. 138).

At this pivotal moment in education, the integration of AI technology and critical thinking into English major education in China represents a significant area of exploration. This paper examines how these elements can be woven into the curriculum to enhance both language teaching and learning outcomes. The integration of AI and critical thinking is crucial because it addresses the evolving demands of the 21st-century workforce, which increasingly values cognitive skills such as problem-solving, analytical thinking, and adaptability (Luckin et al., 2016). Critical thinking is a key ability in education, which is widely recognized as a fundamental skill, particularly in language studies, that enables students to analyze texts, construct coherent arguments, and engage in reflective thought (Yuan & Liao, 2023). The development of critical thinking skills is essential for preparing students to navigate the complexities of the modern world using a foreign language, where they must critically evaluate information and make informed decisions (Wale & Bishaw, 2020; Yin et al., 2023).

While AI presents numerous opportunities to enhance learning, there is also a concern that over-reliance on AI tools might diminish students’ critical thinking skills. This concern stems from the potential for AI to provide answers and solutions too readily, which might lead students to engage less deeply with the learning material (Kim et al., 2022). While AI in education offers numerous advantages, it also presents considerable ethical and practical challenges. One major concern is the potential for AI to exacerbate existing inequalities within the educational system. Additionally, the inherent biases in AI algorithms raise questions about fairness and equity in their application (Adigüzel et al., 2023). To address this issue, it is crucial to explore how AI can be integrated into educational contexts in ways that actively support and enhance critical thinking. Focusing on a university in Southeast China, this paper investigates strategies for integrating AI into English major education to bolster, rather than undermine, the cultivation of critical thinking skills. The study employs a polylogue format, engaging with multiple stakeholders, including educators, administrators, and AI experts, to gather diverse perspectives on the opportunities and challenges associated with this integration.

We utilized a polylogue format to better understand the complexity of AI and critical thinking in education as well as in program development, bringing together three individuals with

different expertise and experiences in education and language education: Zhifeng Hao serves as the current president of Shantou University, bringing a wealth of expertise in the fields of AI and Mathematical Modeling. His leadership is characterized by a strong commitment to integrating advanced technological insights into the university's strategic vision, fostering innovation and academic excellence. Jian-E Peng holds the position of deputy dean at the College of Liberal Arts, Shantou University. Her research has significantly contributed to various areas, including learner motivation (Peng & Woodrow, 2010). She has also made substantial advancements in computer-assisted language learning, collaborating with Jiang to explore the impact of technology on language education (Jiang & Peng, 2023). Additionally, her research on teacher development highlights her dedication to improving educational practices and supporting educator growth (Peng et al., 2023). Fan Fang is the head of the Department of Foreign Languages and Literature within the College of Liberal Arts. Since completing his PhD in 2015, Fang has concentrated his research on sociolinguistics, delving into areas such as global Englishes, language ideology, language policy, and translanguaging. His scholarly work, including collaborations with Hu and Liu, has provided valuable insights into the dynamic nature of language in a globalized world (Fang, 2020; Fang & Hu, 2022; Fang & Liu, 2020). Fang's contributions continue to influence contemporary discussions on language and identity, reflecting his commitment to advancing sociolinguistics in the digital landscape. According to Ferrara (2000), a polylogue provides "a way for each writer to reflect and respond to another writer, but also to serve as a point of analysis for the next team of instructors who would continue developing the collaborative course" (p. 56). It is hoped that this polylogue may serve as a foundation for future research and curriculum development, offering valuable insights for educators, program developers, and policymakers seeking to integrate AI and critical thinking into English major education, not only in China but also in other educational contexts globally. This polylogue aims to address the following questions:

- 1) To what extent is AI and critical thinking important in foreign language education, particularly for English language major students;
- 2) What are the opportunities and challenges of incorporating AI and critical thinking in English major programs in China; and
- 3) What are the future opportunities for incorporating AI and critical thinking in English major programs in China?

Literature Review

AI Technology in Education

The integration of AI into education, particularly in language learning, has been the subject of extensive research over the past decade. AI technologies such as natural language processing (NLP), machine learning, and adaptive learning systems have shown promise in enhancing language acquisition and providing personalized learning experiences (Luckin et al., 2016). For instance, some AI-powered platforms have been used to effectively deliver language learning through personalized lessons tailored to individual learners' needs (Kaswan et al., 2024; Wei, 2023).

AI's ability to provide real-time feedback and adaptive learning pathways is particularly beneficial in language education, where practice and reinforcement are critical (Crompton et al., 2024; Ouyang & Jiao, 2021). Ouyang and Jiao (2021) proposed three paradigms for AI in education, namely, "AI-directed, learner-as-recipient," "AI-supported, learner-as-collaborator," and "AI-empowered, learner-as-leader." The authors emphasized a need to incorporate AI in

the pedagogical, social, cultural, and economic dimensions of education to enhance technology use in the learning process (Ouyang & Jiao, 2021). They also emphasized the need for modern education “to foster learner-centered learning, human agency, and lifelong learning in the current innovation-driven knowledge age” (p. 2). Similarly, studies have shown that AI-driven tools can improve students’ language proficiency by providing instant feedback on grammar, vocabulary, and pronunciation (Hwang et al., 2020). Moreover, AI can facilitate more interactive and engaging learning experiences, allowing students to practice language skills in simulated contexts that mimic real-world scenarios (Dai & Ke, 2022; Kessler, 2018).

However, previous studies have also highlighted potential challenges associated with AI in education. One significant concern is the risk of algorithmic bias, where AI systems may perpetuate existing inequalities or reinforce stereotypes (Heinrichs, 2022). Additionally, the ethical implications of AI use in education, such as data privacy and the potential for surveillance, are critical areas that require careful consideration (Selwyn, 2022). In relation to language learning, for instance, AI could discriminate against non-native accents. Similar concerns are linked to minoritized students and teachers as well as other vulnerable groups in society (Birhane & Van Dijk, 2020), as Selwyn (2022) noted:

Any instance of *some* people being disempowered and disadvantaged by the implementation of AI technologies in education is accompanied by *others* being empowered and advantaged. As such, any particular AI technology might appear to work perfectly well, and be of great advantage, for many teachers and students. Nevertheless, for many others, the same technology can simultaneously be experienced in harmful ways. (p. 624, italics original)

In summary, while incorporating AI in education offers numerous benefits, such as personalized learning, enhanced efficiency, and access to a wealth of resources, it is equally important to acknowledge potential downsides. These include concerns around data privacy, discrimination in education, over-reliance on technology, and the risk of diminishing students’ critical thinking and creativity. As we embrace AI in the classroom, it is crucial to balance its use with fostering critical thinking skills, especially in language education. The next section will review and explore the concept of incorporating critical thinking into language learning, ensuring students not only master linguistic skills but also become thoughtful, independent thinkers in an AI-driven world.

Critical Thinking in Language Education

Critical thinking has long been recognized as a cornerstone of higher education, particularly in relation to the English language and literature (Yuan & Liao, 2023). It involves the ability to analyze, evaluate, and synthesize information as well as to reason logically and make informed judgments. In language education, critical thinking is essential for tasks such as interpreting texts, engaging in debates, and constructing persuasive arguments (El Majidi et al., 2023; Wang et al., 2021).

Previous studies on critical thinking in education have emphasized the importance of fostering this skill through pedagogical approaches, such as inquiry-based learning, problem-based learning, and Socratic questioning (Paul & Elder, 2006). These methods encourage students to actively engage with content, question assumptions, and develop their own interpretations.

Despite its importance, critical thinking is often underdeveloped in educational systems that prioritize rote learning and standardized testing (Rear, 2019). In China, the traditional emphasis on memorization and exam performance has been identified as a barrier to the

development of critical thinking skills (Yuan et al., 2022), highlighting the need for curriculum reforms that prioritize critical thinking alongside content knowledge. For example, Wang et al. (2021) studied the integration of critical thinking and critical pedagogy in a traditional intercultural communication course. By organizing workshops and providing supplementary readings, the concept of critical thinking was gradually embedded in students' minds. Through this approach, students learned to challenge the essentialist view of culture and the narrow concept of native speakerism in language learning.

The integration of AI into education presents both opportunities and challenges for the development of critical thinking skills. On the one hand, AI tools can support critical thinking by providing students with access to diverse perspectives, facilitating data analysis, and offering platforms for collaborative problem-solving (Holmes et al., 2019). For example, AI-powered debate platforms can help students practice constructing and defending arguments, while AI-driven data analysis tools can aid in the critical evaluation of information. On the other hand, there is a risk that over-reliance on AI tools may lead to a decline in critical thinking and autonomous learning (El Majidi et al., 2023). If students become dependent on AI for information retrieval and decision-making, they may be less likely to engage in deep, reflective thinking (Hao et al., 2024). This underscores the importance of integrating AI in a way that enhances, rather than replaces, critical thinking. Educators must strike a balance between leveraging AI's capabilities and fostering students' independent thinking skills. Currently, efforts in this area are somewhat lacking. This paper explores the integration of AI and critical thinking in foreign language education from the perspectives of leaders and experts in the field.

The Macro Perspective of Incorporating AI and Critical Thinking in Foreign Language Education

Zhifeng Hao

From an institutional perspective, the integration of AI and critical thinking into foreign language education represents a strategic opportunity to enhance the quality of education and better prepare students for the demands of the modern workforce, especially for students with majors of arts and humanities. The transition to the AI era has led to new understandings of education for foreign language major students, as traditional language skills can be performed by AI chatbots. Consequently, it is crucial to incorporate critical thinking when redesigning curricula and syllabi for these students to meet their future needs. As President of Shantou University, I view this integration as essential for maintaining the relevance and competitiveness of our academic programs.

Furthermore, the integration of AI and critical thinking not only enhances the quality of foreign language education but also cultivates a new generation of learners equipped with both technical proficiency and cognitive agility. In a world where AI can handle many traditional language tasks—such as translation, grammar correction, and language practice—it is critical that we shift our focus toward developing higher-order thinking skills.

Shantou University has a long history of offering *Integrated Learning* as a compulsory course for all students; however, it has recently been changed to an elective course. Despite this, different major programs are still encouraged to offer courses that incorporate critical and integrated thinking to better cultivate students' critical thinking skills and prepare them for future challenges. By incorporating critical thinking into the curriculum, we empower students to analyze, evaluate, and interpret complex information, allowing them to engage more deeply with language and culture. This approach fosters creativity, problem-solving, and adaptability—skills that are increasingly valuable in the global job market. At Shantou University, we recognize that

this shift is not merely a trend but a necessity to prepare our students for leadership roles in a rapidly evolving world. The integration of AI and critical thinking will ensure that our graduates are not only proficient in foreign languages but also capable of navigating and thriving in diverse, tech-driven environments.

Strategic Vision for Integration

The strategic vision for integrating AI and critical thinking into our curriculum is rooted in the understanding that the future of education lies at the intersection of technological advancements and cognitive skills development. By incorporating AI tools into our English major programs, we aim to provide students with personalized and adaptive learning experiences that traditional methods cannot always offer. These AI-driven tools can support students at different proficiency levels, bridging gaps in learning by offering tailored resources, real-time feedback, and customized learning paths. Whether students struggle with language acquisition or excel in advanced topics, AI can cater to individual learning needs, making education more inclusive and efficient. Moreover, this integration allows educators to shift the focus from repetitive tasks, such as grammar correction, to fostering deeper engagement with language and culture, creating a more enriching educational environment. This aligns with the requirements of the Chinese Ministry of Education (MOE) to promote the incorporation of AI into foreign language learning.

However, the successful integration of AI must be accompanied by the cultivation of critical thinking skills. While AI is a powerful and transformative tool, it can only be as effective as the individuals who harness it. As AI becomes increasingly capable of generating insights and automating processes, students must develop the ability to critically evaluate the information AI provides. This includes questioning the accuracy, reliability, and biases present in AI-generated content as well as understanding the broader ethical implications of using such technologies. Our aim is to ensure that students are not only proficient in operating AI technologies but are also capable of making informed, ethical decisions about the use of these tools. By fostering a dual emphasis on AI proficiency and critical thinking, we are preparing our graduates to excel in an increasingly AI-driven world, where the ability to think critically and use technology responsibly will be paramount to success.

Institutional Challenges and Solutions

One of the primary challenges we face in implementing this vision is the varying levels of technological infrastructure across the university. While some departments are well equipped to integrate AI tools into their curricula, others may lack the necessary resources or expertise. To address this issue, we are committed to investing in the necessary infrastructure and providing ongoing professional development for our faculty. This will ensure that all departments have the tools and knowledge they need to effectively incorporate AI and foster critical thinking in their students.

Another challenge is the potential resistance to change from both faculty and students. The integration of AI represents a significant shift in how education is delivered, and it is natural for there to be some hesitation. To overcome this, we are fostering a culture of innovation and continuous learning within the university. By involving faculty and students in the development and implementation of AI-driven initiatives, we can build a sense of ownership and encourage a more positive attitude toward change.

Jian-E Peng

As deputy dean of the College of Liberal Arts, I am particularly focused on the pedagogical implications of integrating AI and critical thinking into our curriculum. The potential for AI

to enhance student learning is immense, but it is essential that we approach this integration thoughtfully and deliberately.

Pedagogical Innovations

One of the key pedagogical innovations we are exploring is the use of AI-driven tools to support critical thinking. For example, AI-powered platforms can facilitate collaborative learning experiences, where students work together to solve complex problems or analyze texts. These platforms can provide real-time feedback, helping students refine their thinking and develop more sophisticated arguments. We are also looking at ways to use AI to personalize learning experiences for our students. By analyzing data on student performance, AI tools can identify areas where individual students may need additional support and provide targeted resources to address these needs. This personalized approach can help ensure that all students are developing their critical thinking skills, regardless of their starting point.

In addition to fostering collaborative and personalized learning experiences, AI-driven tools can also enhance students' engagement with complex materials by offering adaptive challenges that grow with their critical thinking abilities. For instance, AI can dynamically adjust the difficulty level of tasks based on a student's progress, ensuring that they are continually pushed to think more deeply and critically. This adaptive learning not only prevents students from becoming disengaged due to tasks being too easy or too difficult but also promotes a growth mindset by allowing them to gradually build confidence in their analytical abilities. Furthermore, AI can introduce diverse perspectives by incorporating a variety of viewpoints and sources into discussions, encouraging students to consider multiple angles and question their assumptions. This approach helps cultivate a more well-rounded understanding of issues, promoting the development of higher-order thinking skills such as synthesis, evaluation, and reflection. By leveraging AI in these ways, we are creating a more dynamic, interactive, and engaging environment of our college that supports the continuous development of English major students' critical thinking abilities throughout their academic journey.

Development of Curriculum

The development of a curriculum that effectively integrates AI and critical thinking requires careful planning and collaboration across departments. We are working closely with our colleagues in computer science, education, and other relevant fields to design courses and modules that incorporate AI tools while maintaining a strong emphasis on critical thinking. This endeavor requires support from the university. Echoing the president, I believe that a specific program for English majors focused on AI and critical thinking would be a good start.

One of the challenges we face in this process is balancing the use of AI with more traditional teaching methods. While AI can provide valuable insights and support, it is important for students to also engage in activities that require them to think critically and independently. To achieve this balance, we are adopting a blended learning approach, where AI tools are used to complement, rather than replace, traditional classroom instruction.

Successful implementation of this blended learning approach requires ensuring that AI tools are seamlessly integrated into the curriculum without overshadowing the importance of traditional, human-centered teaching methods. For instance, while AI can provide automated feedback on grammar, structure, and even style in writing assignments, students still need the opportunity to engage in deep discussions, debates, and hands-on projects that foster critical thinking and creativity. In these activities, students must analyze, synthesize, and evaluate information independently, building their reasoning and problem-solving abilities without over-relying on AI assistance. By combining AI's strengths—such as personalized feedback

and data-driven insights—with traditional methods like group discussions, peer review, and instructor-led critical analysis, we can create a holistic learning environment that nurtures both technological proficiency and cognitive growth. Moreover, instructors play a crucial role in guiding students to use AI as a tool to enhance their learning rather than as a crutch, helping them understand when and how to critically assess AI-generated output. This balanced approach ensures that students remain active participants in their learning process, developing not only technical skills but also the critical and independent thinking abilities that are essential for success in the modern world.

Fan Fang

As Head of the Department of English Language and Literature, I am particularly concerned with ensuring that our students are not only proficient in English but also equipped with the critical thinking skills they need to succeed in their future careers.

Department Initiatives to Integrate AI into Curriculum Courses

We have encouraged our faculty members to integrate AI and critical thinking into our English major curriculum. This includes faculty development workshops focused on the use of AI tools in the classroom as well as student workshops designed to help students develop both their AI literacy and critical thinking skills. We are happy to see that a course on academic writing has been selected as the first “AI + Curriculum” cultivation course. One of our key initiatives is the development of a new course on AI and language learning, which will introduce students to the ways in which AI is transforming the field of language education. This course will not only provide students with practical skills in using AI tools but also encourage them to critically evaluate the impact of AI on language learning and communication.

Building on these efforts, we are also exploring opportunities to embed AI and critical thinking into other areas of the curriculum, ensuring that students across different language-focused courses benefit from this innovative approach. The success of the academic writing course as part of the “AI + Curriculum” initiative has already demonstrated the potential for integrating AI in meaningful ways that enhance both learning outcomes and student engagement. The new course on AI and language learning is an exciting extension of this initiative. In addition to introducing students to cutting-edge AI technologies, such as machine translation, speech recognition, and language learning platforms, the course will also emphasize the critical examination of AI’s role in education and communication. Students will be challenged to reflect on how AI tools shape their understanding of language, cultural nuances, and human interaction, considering questions about bias, accuracy, and the future of language-related professions. By engaging with these topics, students will develop technical proficiency as well as the analytical skills needed to assess the broader implications of AI in their future careers, ensuring they are well-prepared for the evolving demands of the global workforce.

Student Engagement

As mentioned by Professor Peng regarding the balance of AI-driven learning and traditional language learning classrooms, engaging students in the integration of AI and critical thinking is essential to the success of our initiatives. We are adopting a student-centered approach, where students are actively involved in the learning process and encouraged to take ownership of their education. To support this, we are incorporating project-based learning into our curriculum, where students work on real-world problems that require them to apply both their language skills and critical thinking abilities. By working on projects that involve the use of AI

tools, students will gain hands-on experience and develop a deeper understanding of the potential and limitations of AI in language education.

Incorporating project-based learning into our curriculum allows students to engage more deeply with both AI tools and critical thinking, fostering a more active and immersive learning experience. This approach encourages students to tackle real-world challenges that require them to apply their language skills in innovative ways, using AI to enhance their problem-solving strategies. For example, students might work on projects such as creating language learning apps, analyzing linguistic patterns with AI, or using AI tools to facilitate cross-cultural communication in business settings. These projects not only provide practical, hands-on experience but also require students to critically assess the role of AI in language learning, weighing its advantages and limitations. As they collaborate on these tasks, students will develop a holistic understanding of AI's capabilities—as mentioned by the president—and learn to navigate its complexities while maintaining a human-centered approach to language education. This experience will empower them to become more independent, creative thinkers who can leverage AI technologies in a thoughtful, ethical manner in their future careers. Ultimately, project-based learning creates an environment in which students are not passive recipients of knowledge but active participants in their educational journey, preparing them to face the evolving challenges of the modern workforce.

Opportunities and Challenges of Incorporating AI and Critical Thinking into English Major Programs in China

Zhifeng Hao

The integration of AI and critical thinking into English major education in China presents significant opportunities. One of the most significant opportunities is the potential for AI to address regional disparities in educational quality. In China, there are significant differences in the quality of education between urban and rural areas. AI-driven tools can help bridge this gap by providing personalized learning resources to students in under-resourced areas, ensuring that they receive the same level of education as their urban counterparts. AI also offers the potential to better prepare students for the global job market. As AI becomes increasingly prevalent in various industries, graduates with both AI literacy and strong critical thinking skills will be in high demand. By integrating these elements into our English major programs, we can ensure that our students are well prepared for the challenges and opportunities of the future.

Despite these opportunities, there are also significant challenges associated with the technological integration of AI into education, including the capability of teachers to incorporate AI and critical thinking into educational programs. Many educators lack familiarity with AI tools, or the pedagogical strategies needed to foster critical thinking, making faculty development a key priority. Providing ongoing professional development, such as workshops and training sessions, will be essential to help teachers build the necessary skills and confidence to integrate these elements into their teaching practices. By empowering educators with the right tools and knowledge, we can ensure the successful implementation of AI-driven and critical thinking-focused curricula. Another challenge is the need for infrastructure development and funding support. Integrating AI into education requires not only access to technology but also the development of new curricula, teacher training programs, and support systems. This requires significant investment and coordination between educational institutions, government agencies, and private sector partners.

Jian-E Peng

I agree with the president's comments regarding both the opportunities and challenges of incorporating AI and critical thinking into the English major program. For me, a professor who

is interested in statistics and quantitative approaches in language education, one of the key academic opportunities is the potential for AI to enhance research and collaboration within the English department. By leveraging AI tools, faculty can analyze large datasets, identify trends in language usage, and develop new insights into language acquisition and pedagogy. This can lead to the development of new research projects and partnerships with other academic institutions and industry partners.

AI also offers the opportunity to enhance student learning outcomes by providing personalized learning experiences tailored to individual needs. Through adaptive learning platforms, AI can identify areas where students struggle and offer targeted resources or exercises to help them improve, allowing for more efficient and focused skill development. This not only leads to improved academic performance but also better prepares students for the job market, equipping them with the technological proficiency and language skills required in a rapidly evolving global economy. Furthermore, by automating routine tasks, AI frees up more time for students to engage in critical thinking and creative problem-solving, further enriching their educational experience.

However, there are also challenges associated with the implementation of AI-driven curricula. One of the primary issues is faculty readiness. Integrating AI into the curriculum requires faculty to develop new skills and knowledge, which can be a time-consuming and challenging process. To address this, with the support of the university and college, we are providing ongoing professional development opportunities for our faculty, including workshops, seminars, and online courses. Another challenge is student adaptability. While many students are excited about the potential of AI, others may be hesitant or resistant to change. To address this, we are adopting a gradual approach to integration, where AI tools are introduced alongside more traditional teaching methods. This will allow students to become familiar with the technology at their own pace and develop the skills they need to succeed.

Fan Fang

Echoing the comments provided by the university and college leaders as well as experts in education, I would like to mention some opportunities related to the learning process and employability as well as ethical and pedagogical challenges that must be carefully considered.

One of the key opportunities presented by AI is its potential to significantly enhance students' language skills and employability. By offering personalized learning experiences and real-time feedback, AI can help students develop their language proficiency more effectively and efficiently. For example, AI-driven platforms can tailor exercises to individual needs, addressing specific areas for improvement and providing instant corrections, leading to more focused and productive learning. This level of customization can accelerate language acquisition, resulting in improved academic performance and a stronger foundation in communication skills. Moreover, these enhanced language abilities, combined with the technological fluency gained through interacting with AI tools, will make students more competitive in the job market. Employers are increasingly seeking candidates who are not only proficient in language but also capable of adapting to new technologies and utilizing digital tools. By incorporating AI into language education, students will be better prepared for a tech-driven workforce, with the advanced language proficiency and digital literacy that modern employers demand.

However, there are also significant ethical and pedagogical challenges associated with integrating AI into education. One of the primary ethical concerns is the potential for AI to exacerbate existing inequalities. If AI tools are not equally accessible to all students, particularly those from underprivileged backgrounds or regions with limited technological infrastructure, they

may unintentionally reinforce disparities in educational outcomes. This digital divide could result in certain students receiving enhanced learning experiences while others are left behind, widening the gap in achievement and opportunities. Furthermore, AI has the potential to compromise academic integrity. As AI becomes more prevalent, there is a risk that students may rely too heavily on AI tools for tasks like writing or problem-solving, which could diminish their independent thinking, creativity, and problem-solving abilities.

The Future of Incorporating AI and Critical Thinking in English Major Programs in China

Zhifeng Hao

Looking to the future, the integration of AI and critical thinking into English major education in China offers significant potential for transforming higher education. However, it also requires careful planning and strategic partnerships to ensure its success.

The long-term vision for integrating AI and critical thinking into English major education is to create a more dynamic and responsive educational environment. By leveraging AI tools, we can provide students with personalized learning experiences that are tailored to their individual needs and interests. This will help ensure that all students, regardless of their backgrounds or abilities, have the opportunity to succeed.

In addition to enhancing student learning, the integration of AI and critical thinking also has the potential to transform the way we approach research and scholarship. By harnessing the power of AI, we can analyze large datasets, identify trends, and develop new insights into language and communication. This can lead to the development of new academic programs and research centers focused on AI in education.

To achieve this vision, it is essential that we build strategic partnerships with industry, government, and other academic institutions. These partnerships will provide us with the resources, expertise, and support we need to effectively integrate AI and critical thinking into our curriculum. They will also help to ensure that our graduates are well prepared for the challenges and opportunities of the future.

Jian-E Peng

The future of AI and critical thinking integration in English major education requires a commitment to ongoing curricular evolution and the pursuit of educational excellence. As AI continues to advance, it is essential that our curriculum evolves to keep pace with these changes. This will require a commitment to continuous curriculum review and innovation. We must be willing to experiment with new teaching methods, tools, and technologies to ensure that our students are receiving the most up-to-date and relevant education.

One area of potential growth is the development of interdisciplinary courses that combine AI with other fields of study, such as linguistics, psychology, and communication. These courses can provide students with a more holistic understanding of the ways in which AI is transforming language and communication.

To sustain educational excellence in the face of rapid technological change, we must also prioritize continuous professional development for our faculty. This will ensure that our educators are equipped with the knowledge and skills they need to effectively integrate AI into their teaching.

In addition to faculty development, we must also strengthen student support services. As AI becomes more prevalent in education, it is essential that we provide students with the resources and support they need to succeed. This includes access to AI tools as well as guidance on how to use these tools effectively and ethically.

Fan Fang

As we look to the future, it is essential that we focus on preparing our students for the challenges and opportunities that lie ahead.

One of the key ways in which we can prepare our students for the future is by equipping them with both AI literacy and strong critical thinking skills. This will ensure that they are not only proficient in using AI tools but also capable of critically evaluating the information and insights these tools provide. To achieve this, we are developing new courses and modules that focus on AI literacy, critical thinking, and their intersection with language education. These courses will be designed to provide students with both the theoretical knowledge and practical skills they need to succeed in a rapidly changing world.

To address the ethical issues mentioned above, we are also developing comprehensive guidelines and policies to ensure that AI is used in a way that supports academic growth and integrity. These policies will focus on promoting responsible use of AI, ensuring that its application complements rather than replaces critical thinking and individual effort. We are also prioritizing equal access to AI tools by advocating for resources and infrastructure improvements to prevent any student from being disadvantaged due to a lack of technological access. It is, of course, important to realize the side-effects of “unguided and unprincipled use of ChatGPT in academic writing courses” (Yang et al., 2024, p. 18). Additionally, we will encourage educators to balance AI integration with traditional learning methods that foster independent thought, creativity, and ethical decision-making, ensuring that AI enhances, rather than undermines, the educational experience for all students.

A Theoretical and Pedagogical Framework on AI and Critical Thinking Integration

To create a cohesive narrative that explains the integration of AI and critical thinking into English major education, we organize different perspectives into a structured theoretical and pedagogical model (see Figure 1).

The integration of AI and critical thinking into English major education serves as a transformative approach to modernizing the curriculum and enhancing student learning experiences. At the core of this integration is the emphasis on creating a dynamic learning environment (Adıgüzel et al., 2023). This is facilitated by establishing a clear vision and forming strategic partnerships with industry and academic institutions. These collaborations provide essential resources and expertise, enabling educational institutions to adapt to technological advancements and prepare students for future challenges.

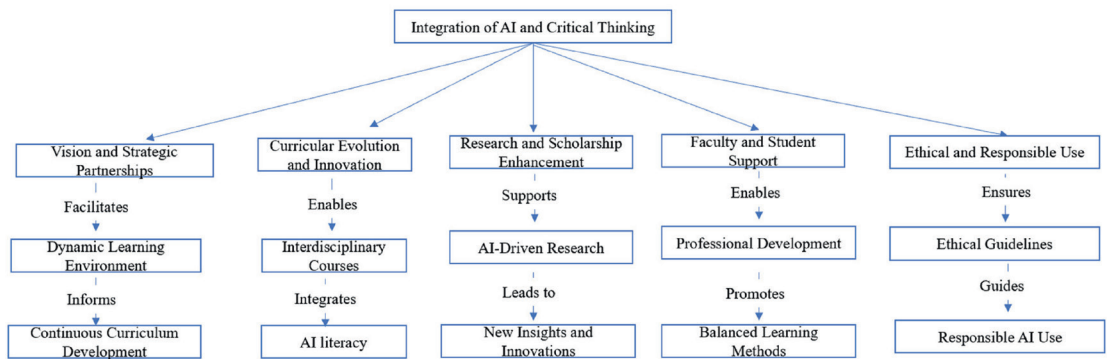


Figure 1 AI and critical thinking integration model.

Curricular evolution and innovation play a crucial role in this framework by enabling the development of interdisciplinary courses. These courses incorporate AI and critical thinking, offering students a comprehensive understanding of how AI impacts language and communication. By continuously updating the curriculum, educators can ensure that it remains relevant and aligned with the latest technological trends. This approach not only enriches the educational experience but also equips students with the skills needed to navigate a rapidly changing world. However, it is important to address the concern that as students become dependent on AI for information retrieval and decision-making, they may be less inclined to engage in deep, reflective thinking (El Majidi et al., 2023). This suggests the importance of integrating AI to enhance rather than replace critical thinking (Hao et al., 2024).

Research and scholarship enhancement is another vital component of this framework, supporting AI-driven research that leads to new insights and innovations. By leveraging AI technologies, researchers can analyze large datasets and identify trends, contributing to the creation of new academic programs and research centers focused on AI in education (Selwyn, 2022). This research-driven approach fosters a deeper understanding of language and communication, enhancing the overall quality of education.

Faculty and student support is essential for successful integration, as it enhances professional development for educators and provides necessary resources for students. Continuous training ensures that educators are equipped with the skills to effectively incorporate AI into their teaching methods. Additionally, enhanced student support services help students use AI tools responsibly and ethically, ensuring equal access to technology and infrastructure. Incorporate workshops and supplementary readings to embed critical thinking (Wang et al., 2021). In China, memorization and exam performance are prioritized, necessitating curriculum reforms (Yuan et al., 2022). In the context of the AI era, assessment practices also need to evolve. Traditional exams may not adequately measure students' ability to think critically and apply knowledge in innovative ways. Critical thinking involves analyzing, evaluating, and synthesizing information, reasoning logically, and making informed judgments (Yuan & Liao, 2023). Assessments could incorporate more open-ended questions, reflective essays, and practical projects that require students to demonstrate their understanding and use of AI tools.

In this framework, the ethical and responsible use of AI is a fundamental principle, ensuring that AI serves as a complement to, rather than a replacement for, critical thinking and individual effort. By establishing ethical guidelines and policies, educators and students are better equipped to navigate the ethical challenges posed by AI technologies. This approach maintains a balance between AI and traditional learning methods, fostering independent thought, creativity, and ethical decision-making. Such skills are crucial for students' success in both academic and professional settings. Critical thinking, the process of actively engaging with information by breaking it down into its components, assessing its validity and relevance, and integrating these insights to form a coherent understanding (Yuan & Liao, 2023), is essential for interpreting texts, engaging in debates, and constructing persuasive arguments (El Majidi et al., 2023; Wang et al., 2021). By integrating AI responsibly, educational frameworks can enhance these critical thinking skills, preparing English major students to navigate complex problems and make sound decisions in the domain of digital applied linguistics.

Concluding Remarks

The integration of AI and critical thinking into English major education in China presents an unprecedented opportunity to transform language learning and prepare students for the demands of an AI-driven, globalized world. By harnessing AI's ability to personalize learning, provide real-time feedback, and offer diverse perspectives, we can enhance students' language

proficiency and equip them with the critical thinking skills necessary to navigate complex information landscapes. However, to realize these benefits, it is crucial to address the associated challenges, including ensuring equitable access to AI tools, overcoming resistance to change, and providing adequate faculty development to effectively integrate AI into the curriculum.

Furthermore, ethical considerations surrounding AI, such as data privacy, academic integrity, and the potential for exacerbating educational inequalities, must be carefully managed through comprehensive guidelines and policies. These frameworks will help ensure that AI is used responsibly and complements rather than replaces traditional methods of fostering independent thought and creativity.

Looking ahead, it is essential for educational institutions to prioritize ongoing innovation in curriculum design, interdisciplinary collaboration, and strategic partnerships with industry and government. By doing so, we can ensure that the integration of AI and critical thinking not only enhances English language education but also prepares graduates to succeed in an ever-evolving, technology-driven global workforce. Ultimately, the successful implementation of this integration will position China's English major programs at the forefront of educational innovation, producing a new generation of learners who are both technologically adept and critically aware.

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