ISSN 2706-6827 Vol. 5, Issue 15: 108-113, DOI: 10.25236/IJFS.2023.051519

The Action Logic of Artificial Intelligence Interaction Technology Empowering Foreign Language Education

Rui Li*

College of Foreign Languages, Bohai University, Jinzhou, China
selinalr@163.com
**Corresponding author*

Abstract: *Artificial intelligence interaction technology not only enables language analysis, but also language generation, enabling dialogue with humans in a more natural and precise form, greatly changing the general public's understanding of chat robots and completing the transition from "artificial intelligence disabilities" to "interesting" impressions. In order to meet the needs of foreign language teaching reform in the era of smart education, this project proposes the action logic of empowering foreign language education with human-machine intelligent interaction technology from multiple perspectives: actively adapting, researching artificial intelligence language models and technologies; Deepen mode flipping and construct a new type of interactive relationship between teachers and students; Optimize knowledge production by combining prior knowledge with experiential knowledge; Beyond language itself, seeking balance in the process of developing smart education; Improve information literacy and train humanities skills that surpass artificial intelligence; Reconstruct the education ecosystem and proactively respond to the impact of new technologies on education.*

Keywords: *Artificial Intelligence Interaction Technology; Foreign Language Education; Action Logic; Wisdom Education*

1. Introduction

The generation of content through artificial intelligence interaction technology will continue to promote the deep integration of intelligent technology and foreign language teaching on the basis of existing pre trained large models. This will not only bring about changes in teaching concepts and methods, but also make the teaching process and teaching scenarios more deeply intelligent, thereby promoting foreign language intelligent education from theoretical conception to reality. Therefore, foreign language education needs to clarify the logic of action on the basis of updated concepts, and complete the identity transformation from "foreign language teacher" to "foreign language intelligent teacher"[1]. To become an intelligent foreign language teacher, it is not enough to only understand foreign language professional knowledge. On the basis of understanding the working principles of language intelligence, it is necessary to master how to better use technology to empower foreign language education. Teachers should implement the fundamental task of cultivating moral character and deepen the cultivation of students' ideological and cultural connotations. This research topic proposes action logic from the aspects of "proactive response, deepening mode flipping, optimizing knowledge production, surpassing language itself, improving information literacy, and reconstructing educational ecology", innovating educational scientific research and practice paradigms, comprehensively and deeply understanding the laws of foreign language intelligent education, and promoting the breadth and depth of the integration of artificial intelligence interaction technology and educational applications.

2. Deepen Mode Flipping and Construct a New Type of Interactive Relationship between Teachers and Students

The most basic activity between teachers and students is teaching activities. When teaching activities occur, teachers and students form a relationship. The essence of teacher-student relationship is the most basic interpersonal relationship in the educational field, which is a special social relationship

ISSN 2706-6827 Vol. 5, Issue 15: 108-113, DOI: 10.25236/IJFS.2023.051519

formed in the process of education and teaching. The construction of teacher-student relationship is a process in which teachers and students, starting from their respective positions, comprehensively consider interaction paradigms, construction fields, and emotional attitudes, and find the most beneficial and suitable interaction mode for improving teaching efficiency and the growth of both parties. In traditional foreign language education, teachers are often regarded as the main body of education, the main designer, organizer, and implementer of educational activities. The teaching process largely reflects the concept, will, and methods of the teacher's educational subject. In today's world, artificial intelligence is irresistibly impacting traditional teaching, and the transformation of traditional teaching will further affect teacher-student relationships. One of the main characteristics of education in the era of artificial intelligence is the emergence of virtual learning fields, where teaching situations are no longer limited to classrooms. Students can access learning resources at any time or anywhere, and the strong correlation between teachers and students is broken.

Artificial intelligence technology is driving the reshaping of teacher-student relationships, and the relationship model of authoritative obedience and mechanized identification is gradually breaking down, leading the teacher-student relationship to enter a new stage of ecology and presenting a unique era connotation[2]. The changes in the technological era have led to changes in the field of constructing teacher-student relationships. From the perspective of artificial intelligence education, teacher-student relationships adhere to student-centered learning, teacher-led human-machine collaborative education, fully respect the physical and mental development characteristics and growth differences of each student, integrate new technologies such as human intelligence and big data, and construct ecological and intelligent teacher-student relationship models, promoting teacher-student relationships in teaching, psychological relationships Harmonious and healthy development of emotional and moral relationships [3]. In the stage of integrating human-machine intelligent interaction technology with foreign language education, the teaching process has truly achieved a "two-way journey" between teachers and students, and high student participation has been achieved. Under the comprehensive empowerment of human-machine intelligent interaction technology, the teacher-student relationship has shifted from a focus on knowledge acquisition results to a focus on emotional generation processes, from authoritative teaching relationships to collaborative learning relationships, from standardized "manufacturing" relationships to personalized "creation" relationships, promoting the establishment of harmonious teacher-student relationships.

3. Optimize Knowledge Production and Combine Prior Knowledge with Experiential Knowledge

The traditional knowledge production paradigm is helpless against the massive data in the era of big data, and has long faced the problem of "rich data and lack of analytical ability". The new generation of artificial intelligence interaction technology centered on deep learning has made knowledge production based on big data a reality[4]. The human brain is a very powerful information processor. Compared to artificial intelligence, the processing ability of the human brain for digital data is extremely poor. Usually, it is difficult for humans to calculate the multiplication of two two-digit numbers. However, machines can quickly and accurately calculate very complex data. Artificial intelligence can compensate for the shortcomings of the human brain's inability to process big data and automate the collection, analysis, and visualization of massive data. The information storage capacity of the human brain is insufficient, and forgetting is a prominent feature of the human brain. The human brain always uses fragmented data in information processing, unable to process data panoramas. Artificial intelligence programs have faster computational efficiency and more convenient information acquisition, and are able to constantly pay attention to dynamic data and perform data analysis and processing at the first time.

Artificial intelligence interaction technology increases the efficiency of human information collection and organization, which is equivalent to liberating human brain power to observe problems that may not have been noticed before with a broader perspective. It helps to improve the efficiency of human problem-solving and objectively increases the speed of human theoretical correction [5]. Artificial intelligence interaction technology can integrate prior knowledge and experiential knowledge. Prior knowledge is knowledge and experience obtained through logical reasoning and thinking without directly observing phenomena, rather than accumulated through practice in life and learning. Empirical knowledge is more based on practical experience. There is a difference between prior knowledge and empirical knowledge, but the two are not completely independent of each other, but interact and promote each other. The integration of prior knowledge and experiential knowledge helps people better understand and apply knowledge in the real world, enabling the continuous growth and development of human knowledge and wisdom, and making it easier for people to acquire new experiential knowledge.

ISSN 2706-6827 Vol. 5, Issue 15: 108-113, DOI: 10.25236/IJFS.2023.051519

4. Beyond Language Itself, Seeking Balance in the Process of Developing Smart Education

The new round of information technology revolution has brought many challenges to modern university education. The new generation of information technology, represented by artificial intelligence and big data, is deeply transforming the form of education. "Knowledge transfer" is gradually moving towards "transforming knowledge into intelligence", and smart education has become an inevitable trend leading the innovation and development of educational informatization. Smart education relies on emerging technologies such as big data, cloud computing, and the Internet of Things, aiming to build a smart learning environment, transform traditional teaching and learning methods, and promote the education system of the intelligent era. The characteristic of foreign language intelligent education is to use intelligent information technology for foreign language learning and practice. By analyzing the corpus, students can summarize and summarize regular language features to engage in positive learning. Foreign language smart education advocates students to actively explore knowledge, utilize various learning resources and media, communicate and interact with the external environment, construct a knowledge system, update and actively construct the learned knowledge, and activate the relevant knowledge points of students' second language system[6].

The key to smart education is to innovate and transform teaching through the integration of technology and education, with the pursuit of human individuality and comprehensive development as the value, and to seek a balance between ideals and reality. When using human-machine intelligent interaction technology to develop smart foreign language education, it is necessary to explore how to integrate new tools into various possible appropriate parts of the teaching process, think and design foreign language teaching courses, and achieve a multi perspective and multi value presentation of ideas. Teachers should help students establish guidelines for using human-machine intelligent interaction technology tools, because knowing does not mean understanding, and understanding does not mean applying [7]. On the one hand, teachers should enable students to have a comprehensive and objective view of human-machine intelligent interaction technology tools, recommend advanced human-machine intelligent interaction technology tools to students, guide students to fully obtain the resources and strategies required for learning, cultivate students' critical thinking ability, and deepen the understanding and understanding of the effectiveness of artificial intelligence interaction technology in foreign language teaching; On the other hand, students should constantly reflect on their learning characteristics and processes, recognize their own progress and shortcomings, change their hostile attitudes towards human-machine intelligent interaction technology, and actively explore the use of human-machine intelligent interaction technology.

5. Improve Information Literacy and Train Humanities Skills that Surpass Artificial Intelligence

Information literacy is the ability and quality to obtain, identify, utilize, and create information in the information society. It is also a necessary basic survival ability and fundamental quality for contemporary college students to carry out lifelong learning. People with information literacy can recognize that accurate and complete information is the foundation of reasonable decision-making, determine the need for information, form questions based on information needs, identify potential information sources, develop successful retrieval plans, integrate new information with existing knowledge systems, and use information in critical thinking and problem-solving processes. Only by possessing good information literacy can college students adapt to the development requirements of the information age. There are many problems in the current education of information literacy for college students. Computer basic courses are the first window for college students to learn information knowledge and improve their information abilities, and they must shoulder their historical mission. It is necessary to comprehensively enhance the information literacy of college students, meet the needs of building an innovative country and creating a learning society, meet the needs of quality education reform and higher education informatization, meet the needs of students' self-learning and information processing abilities, and meet the needs of adapting to social development in the era of artificial intelligence.

From an educational perspective, AIGC (AI Generated Content) is an auxiliary tool for knowledge production and learning, which can help teachers and students better complete teaching and research tasks. Recently, the new breakthroughs of AIGC are clearly more related to liberal arts knowledge activities. To leverage the advantages of AIGC in foreign language education, it is necessary to have a high level of information literacy as a prerequisite. In the society where artificial intelligence interaction technology assists in work, various tasks such as text writing, multimedia scripts, program

ISSN 2706-6827 Vol. 5, Issue 15: 108-113, DOI: 10.25236/IJFS.2023.051519

code, and manuscript translation may be first completed at a high level by AIGC tools, followed by creative adjustments made by humans, and finally published and pushed directly on the platform by artificial intelligence interaction technology. Therefore, the workload of liberal arts positions is greatly reduced, and one person can undertake the work of several people now. If a person's manufacturing level in text, images, translation, video, and audio is similar to that of AIGC, they cannot be competent for similar job positions. In other words, humanities students need to have a higher level of proficiency than AIGC tools, otherwise they will find it difficult to survive in the future workplace.

6. Reconstruct the Education Ecosystem and Proactively Respond to the Impact of New Technologies on Education

The Action Plan for Artificial Intelligence Innovation in Higher Education Institutions requires accelerating the innovative application of artificial intelligence in the field of education, utilizing intelligent technology to support innovation in talent cultivation models, reform of teaching methods, and improvement of educational governance capabilities. Building an intelligent, networked, personalized, and lifelong education system is an important means to promote balanced development of education, promote educational equity, and improve educational quality, It is an indispensable driving force and support for achieving educational modernization. Under the impact of artificial intelligence, the traditional concept of talent has changed, and the standards for talent cultivation have been redefined. Education must focus on "cultivating new talents for a society that has not yet existed" and "cultivating unknown talents for an unknown world" [8]. This means that the cultivation of talents in the era of artificial intelligence is not only the accumulation of knowledge, but also the continuous growth of modernity. Modernity and foresight are the key to talent cultivation. The goal of talent cultivation is gradually shifting from "knowledge-based" to "innovative". Simple "knowledge-based" talents can no longer adapt to the era of artificial intelligence, because compared to machines, the memory capacity and speed of the human brain are at a disadvantage. If they cannot win in thinking, they will inevitably be replaced by machines.

Education ecology refers to the application of ecological methods to study the laws of education and human development, focusing on issues such as ecological balance, environment and adaptation, population distribution and composition, and interpersonal relationships, establishing a reasonable ecological environment inside and outside the school, improving teaching efficiency, and promoting students' healthy growth. In the context of artificial intelligence, the education ecosystem relies on artificial intelligence technology, which is a deepening application of the combination of the Internet and the education field. Its main characteristics are innovation driven, restructuring, open ecology, respect for individuality, service intelligence, and autonomous evolution [9]. In terms of innovation driven, the new technology of artificial intelligence is interconnected with the core elements of the internal ecological environment of modern education. Through the application innovation of artificial intelligence technology in the field of education, it drives the construction of the education ecosystem. The foreign language education ecosystem must also be continuously optimized with the continuous correction and improvement of artificial intelligence technology.

7. Actively Adapt and Research Artificial Intelligence Language Models and Technologies

Faced with the impact of artificial intelligence interaction technology on foreign language education, higher foreign language education should be proactive in identifying changes, actively adapting, and actively seeking changes, focusing on cultivating high-quality international composite talents with "one essence, multiple abilities" and "one specialty, multiple abilities". Quality has become the theme of the development of higher education worldwide, and we will fight the battle to comprehensively revitalize undergraduate education; The new technological revolution and industrial transformation call for the construction of new humanities, deepen the reform of foreign language education, create "golden courses", vigorously promote the construction of new humanities, and put forward higher requirements for curriculum content, difficulty, depth, teaching mode, and teaching methods; Foreign language education should actively serve the national development strategy, closely align with the needs of the country and society, actively meet the challenges of the new technological revolution, carry out "intelligent teaching, intelligent learning, and intelligent evaluation" based on artificial intelligence interaction technology, fully integrate into the construction of a strong higher education country, and vigorously cultivate high-quality international talents with a global perspective, Chinese sentiment, understanding of international rules, proficient in using foreign languages, and proficient in Sino

ISSN 2706-6827 Vol. 5, Issue 15: 108-113, DOI: 10.25236/IJFS.2023.051519

foreign negotiations and communication.

The artificial intelligence language model is an artificial intelligence technology based on deep learning, which has the ability to process natural language, generate natural language text, understand context, and engage in coherent intelligent dialogue. The language output of artificial intelligence language models imitates human thinking patterns and behavioral habits in a natural language expression similar to humans, thereby creating a sense of closeness and facilitating its application in daily social fields [10]. The artificial intelligence language model has the ability to generalize knowledge and express natural language beyond most human individuals, equivalent to establishing connections between the eyes and mind of artificial intelligence. It can not only observe and reason about things it "sees" like humans, but also more keenly discover the internal connections between these things than humans. Artificial intelligence language models can provide feedback based on students' personalized needs and learning situations, timely correct students' mistakes, and strengthen students' advantages [11]; Artificial intelligence language models can solve the problems of insufficient interaction between teachers and students in traditional teaching, as well as the limitations of traditional teaching modes on students, and improve learning effectiveness.

8. Conclusions

Smart education is increasingly becoming a cutting-edge topic in the field of education, using big data and artificial intelligence technology to accurately analyze students' situations and provide learning solutions that meet personal needs and characteristics. Artificial intelligence interaction technology has brought new directions for the transformation of foreign language intelligent education. Through this research project, the potential problems brought by artificial intelligence interaction technology to foreign language education are revealed, and the thinking patterns and practical strategies for empowering foreign language intelligent education transformation by artificial intelligence interaction technology are proposed. The potential functions of human-machine intelligence interaction technology are explored, making reasonable independent decisions for learning, actively seeking change, and actively adapting, Accelerate the successful transformation of foreign language smart education and more effectively enhance foreign language abilities.

Acknowledgements

This work is supported by 2023 annual social science planning fund project of Liaoning province (L23BYY015): Research on Artificial Intelligence Interaction Technology Empowering Foreign Language Education.

References

[1] W. W. Li. Ai-enabled foreign Language Education reform: Idea innovation and action logic[J]. China Higher Education, 2023, 59(09): 49-52.
[2] L. L. Zhao, X. M. Chen, X. Y. Du. Teacher-student Relationship Construction in the Age of Artificial Intelligence: Realistic Challenges and Proper Turn[J]. Theory and Practice of Education, 2021, 41(31): 36-41.
[3] W. W. Wang, L. Yang. Realistic Challenges and Countermeasures of the Transformation and Upgrading of Teacher-student Relationship from the Perspective of AI Education[J]. Journal of Hunan Institute of Engineering (Social Science Edition), 2023, 33(02): 113-118.
[4] M. Su, Chen Bateer. Data-Driven Artificial Intelligence Knowledge Production[J]. Forum on Science and Technology in China, 2021, 37(11): 51-56.
[5] H. Y. Zhang. Knowledge production in the era of artificial intelligence transformation[J]. China Social Science Review, 2023, 9(02):4-8.
[6] Y. L. Zhang, Z. L. Sun, D. S. Zhang, et al. A Practical Research on Foreign Language Intelligent Education based on Big Data[J]. Modern Educational Technology, 2017, 27(12): 63-68.
[7] Z. Y. Zhang, H. Q. Hong. Foreign language teaching supported by ChatGPT: empowerment, issues, and strategies[J]. Foreign Language World, 2023, 44(02): 38-44.
[8] L. H. Shi, Y. Yang. Adaptation and Leapfrog: Modernization of education under the impact of artificial intelligence[J]. Journal of the Chinese Society of Education, 2022, 43(03): 47-52.
[9] R. H. Wang. Construction of Educational Ecosystem in the Context of Artificial Intelligence[J]. The Journal of Shandong Agriculture and Engineering University, 2019, 36(08): 139-140.

ISSN 2706-6827 Vol. 5, Issue 15: 108-113, DOI: 10.25236/IJFS.2023.051519

[10] S. Y. Jian. GPT language model: Technical preparation for "humanoid" artificial intelligence[J]. Journal of Guangzhou University(Social Science Edition), 2023, 22(04): 19-24.
[11] J. S. Hu, Y. J. Qi. When Confronted with ChatGPT, How will China's Foreign LanguageEducation Policy React: Seeking Changes and Adaption [J]. Technology Enhanced Foreign Language Education, 2023, 45(01): 3-6+105.