

# The Logic and Direction of Teaching Method Reform in the Context of Artificial Intelligence

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**Abstract:** With the passage of time, machine learning algorithms represented by deep learning have been gradually applied to machine vision, speech recognition and other fields, and have obtained certain results. Around big data, cloud computing and other technologies to provide very sufficient data resources, artificial intelligence is entering a period of rapid development, but also in the profound changes in various fields of society, the state requires the setting of digital, intelligent education, but the integration of artificial intelligence and education path still need to be explored, has not yet formed up and down the effective integrated education system. Based on this, this paper focuses on the research on the integration of artificial intelligence into the teaching model reform, in order to provide reference ideas for artificial intelligence education activities and help the intelligent development of education and teaching.

**Keywords:** Artificial intelligence; Teaching method; Revolution

**Online publication:** February 10, 2025

## 1. Introduction

Teaching method refers to a kind of measure adopted by taking teaching activities as the main body to achieve the goal of discipline education, and it is also the dynamic embodiment of teaching activities. Intelligent teaching method is based on the integration of technology into the teaching situation, the teaching subject to improve the effectiveness of classroom teaching, optimize the model of discipline education and education consensus, is also the basis of artificial intelligence to complete the teaching activities. With the arrival of the educational revolution in the new era, the innovation and reform carried out around artificial intelligence technology are accelerating the development of the education field. Taking artificial intelligence as a sharp tool of education activities, teaching activities optimize the path of education by integrating technical means, so as to improve the quality and efficiency of teaching activities, and make intelligent means and teaching content complement each other. Artificial intelligence can enrich the value and connotation of teaching mode, seek appropriate tension based on the balance between emotion and technology, and accelerate the innovation and reform of teaching methods.

## **2. The internal logic of teaching mode reform under the background of artificial intelligence in the new era**

### **2.1. Life logic: Presenting the characteristics of life and constructing interactive forms**

Chinese traditional culture sets human life as the source of the unity of heaven, earth and man, and sets up multi-dimensional discourse on this basis. Taoism believes that the source of life is “Tao.” The application of artificial intelligence in the field of teaching has a certain uniqueness, aiming at integrating advanced technology into the logic of Taoism and the logic of adult life <sup>[1,2]</sup>. The teaching idea determines the teaching thinking and has a profound impact on the teaching activities. In order to change the teaching mode, teachers should set the concept of people-oriented education, respect the principal position of students, and innovate the teaching mode.

Artificial intelligence can help the innovation of teaching mode, involving the life interaction of the subject and object of teaching, mainly including the following two aspects:

- (1) Reflecting on life is the prerequisite for the innovation and reform of artificial intelligence <sup>[3,4]</sup>. Virtual technology in artificial intelligence, also known as soul technology, can help the optimization and innovation of traditional teaching modes and derive new teaching methods and new dynamics around immersive and interactive experiences. In the implementation process of virtual interaction, teachers can use semi-immersive virtual reality interaction technology to closely integrate virtual teaching activities with classroom knowledge, simulate human sensory functions in the virtual situation, stimulate students’ interest in knowledge learning, and make them devote themselves to classroom practice.
- (2) Teachers and students can also use language, gestures, expressions and other content to complete the interactive communication, strengthen the interactive experience of students, and help students to form divergent thinking. The teaching reform supported by intelligent technology should follow the essential principle of life, focus on reflecting the influence of teaching innovation on education results and other aspects, and highlight the open, sustainable, and dynamic characteristics of natural life.
- (3) Helping teachers and students grow is also one of the effects of the application of artificial intelligence technology. The innovation and reform of teaching mode lies in expanding individuals, realizing the value goal between teachers and students based on their standpoint, stimulating students’ potential as much as possible, and promoting the sustainable development of life.

### **2.2. Out-of-control logic: reshaping the community form and giving teaching new connotations**

Close integration, artificial intelligence and teaching activities can not only break traditional boundaries of time and space but also sublimate and reshape the traditional teaching mode, teaching mode is derived from the new changes. Lefebvre used tripartite dialectics to explain the theory of integration, in which the unity of theoretical existence is explained from multiple fields, such as the material, spiritual and social fields, so that modern teaching and the environment can achieve deep reform and improvement <sup>[5,6]</sup>. In this regard, subject teaching mode in the perspective of artificial intelligence should break the boundaries of time and space, shape the teaching framework and teaching content from multiple angles, and give the subject teaching a new mission.

Based on the expression form and functional orientation of material time and space, it includes tangible time and intangible time and space. The former refers to the objective presentation form of the air teaching mode, that is, the activity form to realize teaching and learning in a specific time and space. Among them, the teaching form is affected by external factors, such as the traditional classroom teaching time and teaching body are represented by clocks, timetables, tables and chairs. As the main place for teacher-student teaching and learning communication, the classroom provides the necessary prerequisite for the setting of teaching activities. From the latter situation, the invisible time and space teaching mode exerts more importance on innovation and

optimization, that is, the subject teaching reform centered on artificial intelligence technology <sup>[7,8]</sup>. Artificial intelligence technology affects the implementation of teaching activities all the time, mainly by combining teaching time, teaching order and teaching rhythm. The setting of network space, virtual space, and online space is full of modern means and pays more attention to teaching time and space to produce structural changes. The synergy and effectiveness of intelligent teaching lay a solid foundation for students to implement independent learning activities, so that they have time and space to set the teaching process, truly follow the basic principle of teaching according to their aptitude, and give play to the unique attributes of subject and object.

### **2.3. Value logic: Help teaching innovation and change, enlightening students' minds**

In the context of the current situation, basic education in China gradually moving towards high-quality development to achieve a higher quality of the transformation of the teaching mode to a more depth. From the definition of the word "method," teaching method is mostly applicable to the object of teaching, and the improvement of classroom teaching effectiveness also has the characteristics of objectivity and subjectivity, which can not only show the uniqueness of teaching mode but also realize the effective connection between the subject and object of teaching. In this regard, the improvement of teaching quality can not only show the deep demands of modern high-quality education but also reflect the more objective presentation of the reform of teaching mode, which is the core demand of promoting the construction of a deep teaching system of artificial intelligence <sup>[9,10]</sup>.

## **3. The main path of innovation and reform of teaching methods in universities from the perspective of artificial intelligence**

### **3.1. Maintain the value-integrated education logic and correct the deviation of teaching activities**

The ultimate goal of teaching activities is to cultivate high-quality and skilled talents. Technology is only used as an auxiliary tool in teaching activities. Teaching activities should rely on the people-oriented education concept and apply technology as an auxiliary tool to improve the effectiveness of classroom teaching. Limited by the one-sided thinking that mechanical equipment replaces traditional teaching, the current intelligent education model faces the problem of "teaching the whole person in a whole way." The instrumental characteristics of the application of artificial intelligence technology promote teaching activities to gradually deviate from the expected goals, and the precision of technical means also makes the teaching mode more similar. Visual content runs through the teaching process, and the model of evaluating people and only data is gradually established <sup>[11]</sup>. The accurate judgment of artificial intelligence does not pay attention to the complexity of the learning subject in the teaching activities, which makes the learning mode and education resources more homogeneous. The rationality of technical assistance tools and the rationality of teaching value are integrated to pursue the effectiveness of the teaching process, measure the people-oriented value with technical means, and realize the unity of intelligent means and teaching mode.

- (1) Adhere to the attribute of life and promote the humanistic spirit, run through the whole process of students' learning, explore the essence of teaching activities, return to the source, and avoid the elimination of the true meaning of life by technology.
- (2) Pay more attention to students, organically integrate artificial intelligence technology and teaching mode, optimize and integrate education concepts and thinking, and become the standard for setting teaching activities. The principle of constructing the harmony and unity of instrumental rationality and value rationality, relying on the foundation of modern technology and education concepts, makes the teaching

method more in line with the logic of educating people, abandons the erroneous concept of only technology theory and only data theory, and becomes an educational art in the field of intelligent education <sup>[12]</sup>.

### **3.2. Build digital time and space to awaken the cognition of the subject and object of teaching**

The application of artificial intelligence in the field of education can not only promote innovation and reform of teaching methods but also make the original education value face the risk of retreating, which is not conducive to the interaction between teachers and students. The interaction between individuals and the real world determines the form of autonomous cognition of human beings. The teaching mode in the virtual world cannot engage teachers and students wholeheartedly and guide students to obtain more in-depth experience. The teaching innovation in the stage of modernization construction should focus on the subject of “people.” From quality education to quality education, all exert importance on the innovation of subject knowledge and teaching mode <sup>[13]</sup>.

Embodied cognition theory emphasizes that the body, psychology and environment complement each other. In the actual teaching process, the perfect integration of the three can make the teaching method more concrete and highlight the “humanness” characteristics of the essence of education. In this regard, the optimization of teaching methods in the era of artificial intelligence should be transformed from the body to the inner, and the physical and mental recovery is the key, and it should be carried out from two directions:

#### (1) Focus on cultivating teachers’ embodied teaching thinking

Under the intelligent teaching scenario, the integration of embodied teaching can strengthen teachers and students’ understanding of knowledge and fully mobilize students’ sensory cognition. Embodied teaching requires the full involvement of teachers and students. The application of intelligent means can stimulate the active participation of both teachers and students and guide their integration into the teaching communication link. Starting from physical participation, through self-reflection and other physical and mental experiences, the self-perception between teachers and students can be awakened, thus promoting the emotional communication between teachers and students and strengthening the rapid development of students’ personality traits and sociality. It can help build a more harmonious relationship between teachers and students, and let the teaching method return to the source <sup>[14]</sup>.

#### (2) Improve students’ practical ability by combining virtual with real

Physical practice can guarantee their learning experience. Teaching activities are a process based on physical practice and experience perception, and teaching methods can be self-transformed with the help of the body. The integration of artificial intelligence and teaching activities cannot ignore the cultivation of perception, but the knowledge transformation should be completed by personal actions. Judging from the current development situation, students’ innovation ability has become the key to the cultivation of core literacy goals. Teachers need to promote the integration of online and offline modes and use intelligent technology in the classroom to further strengthen students’ practical operation skills.

### **3.3. Give full play to the effectiveness of human-machine symbiosis and highlight the value of education**

Human-machine symbiosis can effectively transform the single mode of traditional teaching links, and gradually form a teaching environment and machine. The new teaching pattern is based on machines and equipment. Human-machine symbiosis also emphasizes the advantages and disadvantages between teaching activities and auxiliary tools, giving full play to the efficiency of the integration of the two, promoting deep reform and

integration, rather than the single implementation of virtual auxiliary teaching. Based on this, it is necessary to carefully consider how to realize the vision of human-machine symbiosis development and help the deep reform of teaching methods, to build a more intelligent education system with more temperature and humanistic connotation. Based on diversified teaching, use learning data to generate classroom teaching activities, deepen the design of teaching content and the improvement of teaching evaluation, and gradually present a dynamic teaching process to reduce teachers' teaching burden as much as possible and let teachers return to the source of teaching and educating people. In the teaching process, teachers can apply intelligent technology to transform the teaching role, help teachers improve their professional skills, clarify the important value of teacher teaching in the new era, carry out various education services more efficiently, and deeply understand the core connotation of education while innovating teaching activities.

Nowadays, the generation of AI and the emergence of ChatGPT have a profound impact on social development. Education and teaching should integrate key technologies in the new era, create teaching methods around the principle of human-computer symbiosis, and shape key paths to meet the needs of teaching activities. Man-machine symbiosis can be divided into three parts: man-machine coexistence, man-machine co-existence and man-machine creation. The above three levels can be carried out in different ways: First, the teaching process should fully demonstrate the "humanity" of teaching activities to further realize human-machine coexistence<sup>[15]</sup>. The single teaching mode is no longer suitable for the development of students in the new era. The teaching mode under the background of artificial intelligence requires teachers to transform their role in time and respect the object status of students' subject and intelligent auxiliary tools. Generative teaching activities can inject new vitality into classroom teaching. Human-machine symbiosis emphasizes that the relationship between teachers and students and technology no longer stays in the repetitive operation of the classroom, teachers should strengthen their digital professional quality, under the guidance of science, truly grasp the boundary between classroom teaching and virtual reality, choose a reasonable teaching mode according to the teaching content, and grasp the balance between technology and emotion. The subject and object of teaching have constitutive and decisive characteristics, while the effect of artificial intelligence on teaching gives the teaching method the advanced function of generation, interaction and creativity.

## 4. Conclusion

To sum up, with the innovation and change of artificial intelligence technology and its deep application in the field of education, artificial intelligence has a more profound impact on the teaching environment. Based on this, college classroom teaching should be reformed from the aspects of teaching philosophy, teaching environment and teachers' roles to adapt to the challenges brought by the application of artificial intelligence in the field of education in the new era. Artificial intelligence technology can be used to improve the quality of classroom teaching in colleges and universities and cultivate high-quality and skilled talents in line with the development of education in the new era.

## Funding

2023 Undergraduate Ideological and Political Demonstration Course Construction Project of University of Shanghai for Science and Technology

## Disclosure statement

The author declares no conflict of interest.

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