

Teacher-Student Relationships in the Context of Artificial Intelligence

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Keywords: Artificial Intelligence, teacher-student relationship, practice Paths

Abstract: Under the rapid advancement of artificial intelligence technology, the field of education is experiencing a technology-driven change. The application of technologies such as deep learning, big data and cloud computing has not only resolved some real-life conflicts in education, but also had a reshaping effect on the pattern of education. In this process, the teacher-student relationship, as the core of educational activities, is facing unprecedented challenges in its traditional mode. The purpose of this paper is to discuss the challenges encountered by teacher-student relationship in the context of artificial intelligence, mainly the teacher's intellectual authority is threatened, the traditional teaching space of teachers and students is broken, the ethical quality between teachers and students needs to be strengthened, and the emotional relationship between teachers and students is affected, and put forward the corresponding practical paths to meet these challenges.

In January 2017, the State Council released the '13th Five-Year Plan for the Development of National Education', which proposed for the first time to explore new modes of future education and teaching with technologies including artificial intelligence. [1] Teacher-student relationship is the most important and basic form of interaction in teaching and learning activities, which not only has an important impact on the environment and situation of teaching and learning activities, but also has a far-reaching impact on the level and quality of teaching and learning effects. This issue has always been valued and thoroughly studied by experts and scholars in the education field. It is the fundamental task and duty of educators to establish a rational, harmonious teacher-student relationship that is adapted to the changes of the times. Its ultimate goal is to create a happy, harmonious and healthy environment for growth, so that it can better fulfil the basic purpose of education - to promote the all-round development of human beings. Especially with the rapid development of AI education, the issue of the relationship between teachers and students has become particularly important and challenging. As a physical embodiment of human intelligence, the application of artificial intelligence in education will inevitably have a profound impact on the main body of education - teachers and students. Therefore, exploring how to build a new type of teacher-student relationship in the era of artificial intelligence is not only a challenge to the traditional education model, but also an exploration of the future direction of education development.

1. Core Definition

1.1. Artificial intelligence

Artificial intelligence can be divided into "artificial" and "intelligent" for in-depth interpretation. Academia agrees with "artificial" and "artificial" in the general sense, but the definition of "intelligence" lacks a unified conclusion, so that the definition of "artificial intelligence" is various.

Some scholars define "artificial intelligence" as intelligent machines or agents. Zhang Kunying and others defined "artificial intelligence" as the sum of the functions of intelligent machine to realize judgment, reasoning, learning and problem solving related to human intelligence. [2] Li defined "artificial intelligence" as an artificial agent that simulates complex intellectual activities such as human perception, learning and reasoning through computers. [3] Some scholars define "artificial intelligence" as a technology. Yu sees artificial intelligence as a technology rather than a living thing. [4] Some scholars also define "artificial intelligence" as "education." Jia Ji defined "artificial intelligence" as an education completed by machines. Malcolm ·Frank et al define AI as focusing on machine self-learning. [5] This research no longer regards "artificial intelligence" as an independent technology for operation and use, but defines artificial intelligence as a new medium that causes teachers to change their physical scene, communication scene and information scene.

1.2. Teacher-student relationship

The connotation of teacher-student relationship is wide and the researchers will have different understanding of teacher-student relationship based on different research angles. The essential connotation of teacher-student role relationship is learning-promoting relationship. The relationship between teacher and student in teaching is the relationship between teaching and learning based on the media of teaching content. What the pedagogic circle recognizes is the elaboration of the relationship between teachers and students in the Foundation of Pedagogy jointly compiled by the twelve key normal universities in China. The book points out that the relationship between teachers and students refers to the relationship between teachers and students in the process of teaching and learning, including the status of teachers and students, their respective roles and attitudes towards each other. It is expressed as a special social relationship and personal relationship, a pluralistic relationship system to achieve the purpose of education and has its own unique characteristics and status through direct interaction between teaching and learning. [6] The teacher-student relationship in the existing documents can be divided into teaching relationship, emotional relationship and ethical relationship, as shown in Table 1. Among them, the most recognized teacher-student relationship is the teaching relationship, which is also the traditional teacher-student relationship.

Table 1: Classification of Teacher-Student Relations

Teaching relationship	The teaching relationship in teacher-student relationship has the nature of law and stability. It is the most logical and reasonable complex relationship between teachers and students. It can also be called the formal relationship or working relationship between teachers and students.
Emotional relationship	Teachers can establish harmonious relationship with students, teacher-student relationship is equal, students' emotional dependence, teachers' encouragement, teachers' temperament of words and deeds plays an important role in students' growth.[7]
Ethical Relation	In the ethical culture, the relationship between teachers and students in education is based on the relationship between human beings, with the moral value as the direction, and with the personality formation and life development of teachers and students as the important task of educational activities.[8]

2. Challenges to Teacher-Student Relations from the Perspective of Artificial Intelligence

2.1. The knowledge authority of teachers is threatened

In the age of artificial intelligence, the way people acquire knowledge is becoming more and more diverse. The traditional teacher-only approach to teaching has changed, allowing students to get what they want directly from the vast knowledge base. This change makes teachers' teaching behavior impart knowledge to students simply and impart knowledge to students. The diversification of the way to acquire knowledge not only improves students' learning efficiency and autonomy, but also requires teachers to reposition their roles in the new teaching situation so as to better guide and support students' learning process. Zhao Lei and other scholars emphasize: "Under the supervision and guidance of 'babysitter-style' teaching, the development of students' independent learning ability and innovation ability is restrained, and the role of the subject (student) in the education process is lost, which affects the effect of the subject (teacher) in teaching." [9] Teachers are no longer the only source of knowledge for students, and teachers' knowledge reserve is less than that of artificial intelligence, so teachers' knowledge authority is challenged.

2.2. The teaching space between teachers and students is broken

With the development of artificial intelligence and educational technology, traditional teaching methods have changed greatly. The close relationship of traditional "education-school-teacher" weakens the close relationship between teachers and students established by school life. However, this change also raises some new issues, especially in teaching monitoring and data sharing. With the development of artificial intelligence technology, some important teaching information, such as teaching behavior, expression, teaching posture, are exposed to the danger. Information leakage between teachers and students not only endangers the personal privacy of teachers and students, but also undermines the foundation of trust between teachers and students. Trust is the most important link in the relationship between teachers and students. If it is damaged, it will have a great negative impact on the teaching effect.

2.3. Lack of ethics of teachers and students

From the perspective of the interaction between teachers and students, the extensive application of artificial intelligence technology in the field of education has profoundly changed the traditional teaching methods. The relationship between teachers and students and moral education have lost their moral space to some extent. In this context, the imbalance between science and technology and education will inevitably change the relationship between teachers and students. Wang Xiaomin and others pointed out that under the impact of artificial intelligence technology, the ethical cognition of artificial intelligence between teachers and students is facing a severe practical test. [10] Teachers are the communicator of knowledge and the guide of morality, but the understanding and application of artificial intelligence technology between teachers and students deepen the deviation of their understanding of artificial intelligence education due to the difference of digital literacy.

2.4. Emotional impact of teacher-student relationship

With the wide application of artificial intelligence in the field of education, its key technologies, such as intelligent agent technology, natural language processing technology and emotion computing technology, etc. This technology trend leads to an increase in physical distance between teachers and students, and physical communication without presence makes traditional face-to-face emotional

communication difficult. In the virtual space, it is difficult for students to feel the true and warm care of teachers. This communication mode without direct emotional experience makes it difficult for students to open their hearts and express their true self at the psychological level. Similarly, it is difficult for teachers to understand the inner world of students through virtual communication, which further strengthens the gap between teachers and students. Zheng Xin and others said: "Along with the deep integration of technology and teaching, the 'living space' of emotional interaction is further squeezed, especially artificial intelligence, which not only brings convenience to teachers, but also squeezes the time of emotional interaction between teachers and students." [11] The lack of emotional communication leads to the crisis of trust. Students may have doubts about the teacher, a sense of disbelief in the teaching content, and teachers may be unable to provide targeted guidance because they are unable to understand the student in depth. Finally, this lack of in-depth teacher-student interaction is difficult to touch the soul, affecting the effectiveness of education and teaching.

3. The Practical Path of Constructing Harmonious Teacher-Student Relations under the Background of Artificial Intelligence

3.1. Keep your heart in mind: Encourage teachers to return to the standard of education

Artificial intelligence endowment teaching, in the future, artificial intelligence can assume twelve roles in teaching, teachers' intellectual teaching role will be replaced. But this does not mean that teachers will be replaced by artificial intelligence. Human teachers always have the advantage of artificial intelligence. In the era of artificial intelligence, the value of teachers' "teaching" may be replaced by artificial intelligence, but the value of "educating people" will not be shaken. Teachers should stick to the education essence of their professional role, uphold the tenet of Leader, and be the modeler of students' soul and the guide of life. Su Lingyin once said: "In the face of artificial intelligence, teachers can be liberated from repetitive work, put more energy into the healthy and stable, harmonious relationship between teachers and students and promote the overall development of students." [12] In the era of artificial intelligence, teachers should stick to the essence of educating people in their professional roles, uphold the tenet of Leader, and constantly improve their own professional accomplishment and educational concept. Through the organic combination with artificial intelligence, teachers can provide students with more comprehensive and in-depth educational services and realize the innovation and development of education and teaching.

3.2. Relationship optimization: Build a teacher-student relationship community

The school should give full play to the role of artificial intelligence in the symbiotic relationship, re-examine the role of teachers and students in teaching, attach importance to the evaluation and promotion of the quality of teacher-student relationship, pursue the higher level of teacher-student emotional interaction, stick to the professional ethics of teachers in technical application, and construct the mutually beneficial symbiotic teacher-student relationship. Li Haifeng and others have proposed the development of artificial intelligence driven virtual intelligence companion, the establishment of online and offline integration of learning companion learning mechanism, based on the Internet of Things, big data and learning analysis technology to build a seamless connection of virtual reality companion. [13] Liu Lei and others once said: "They are" connected "with teachers of different disciplines, different levels and different schools and experts in the field of artificial intelligence, so as to build a professional community of teachers across fields, disciplines and time and space." [14] Wang Guo advocated the construction of "he-I" two-way symbiosis between teachers and students, emphasizing that teachers and students face artificial intelligence as the main body of life existence, and take teachers and students as the moral connection rather than knowledge

connection as the foundation of life existence. [15] To establish the relationship community between teachers and students is the key to the current artificial intelligence education. The artificial intelligence technology is used to construct the relationship community between teachers and students, close the distance between teachers and students, and sublimate the relationship emotion between teachers and students.

3.3. Core guarantee: Pursuit of good ethics

As the most important accomplishment in the era of artificial intelligence, ethical accomplishment relates to the correct use of artificial intelligence. The development of teacher-student relationship should pay more attention. Teachers should improve the "trust quotient," and teachers should be vigilant against the traps of technical omnipotence and technological overstep, and should not transfer their roles and responsibilities in the relationship between teachers and students to artificial intelligence. In educational practice, attention should be paid to the cultivation of teachers and students' design thinking and ability in solving problems by using artificial intelligence technology. We need to carry out teacher-student data literacy education training to help teachers master the skills and abilities of applying educational data to promote the development of education and teaching. The education administrative department shall formulate relevant policies, encourage the cooperation between colleges and universities and relevant technology enterprises, and jointly devote itself to the construction of artificial intelligence classroom. Liu Xia advocated the establishment of educational ethics space based on the three-party interaction and integration of "teachers," "intelligent machines" and "students" in the age of intelligence to serve the teaching objectives. [16] Yu Ping once said: "Whether online or offline, we should abide by information laws and regulations, respect others' intellectual property rights, correctly acquire, develop and disseminate information, and consciously abide by the information ethics in the information environment." [17] In the era of artificial intelligence, the relationship between teachers and students should be promoted in the process of the evolution of the relationship between teachers and students.

3.4. Direction: Pursue deeper emotional interaction

Teachers should use the dialogue field with the characteristics of "intellectual adaptation" to meet the students' emotional needs, integrate into the students' life, pay attention to the students' individualized needs, carry out "heart-to-heart" and "point-to-point" communication with students, try to reach the relationship of "first friend, second teacher and student" with students, and lay a foundation for higher-level and more effective emotional interaction. Zheng Xin and other teachers suggested that teachers should devote more time to the emotional interaction with students, and carry out "point-to-point" communication with students, so as to lay a foundation for higher-level and more effective emotional interaction. [11] MA Yan advocated teachers to improve "love for business," teachers should pay more attention to students' mental health and emotional changes, and give meticulous personalized care, care and respect in time, so that students can feel the temperature of human nature. [18] The most important relationship between teachers and students is emotional interaction, which is an important practice way to improve the relationship between teachers and students.

4. Summary

The relationship between teachers and students is undergoing a profound transformation from the perspective of artificial intelligence. Teachers should recognize their own educational position and return to the standard of education. With the help of artificial intelligence, teachers and students

should build a community of mutual help between teachers and students, reach a deeper emotional interaction between teachers and students, and make the relationship between teachers and students develop in a positive direction.

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