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Reflections on Teacher-Student Relationships in the Artificial Intelligence Era: Ethical Risks, Root Causes, and Mitigation Strategies

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Abstract: *In the age of artificial intelligence, teacher-student relationships face ethical risks, such as privacy leakage and algorithmic bias, etc., which arise from inappropriate application of technology and lack of ethical awareness. This paper discusses the root causes of these ethical risks and proposes mitigation strategies, including strengthening the ethical review of technology, innovating the way of knowledge transfer, reshaping the interaction mode between teachers and students, paying attention to emotional needs, and rebuilding the trust mechanism, etc., aiming to build a healthy and harmonious educational environment and promote the overall development of students.*

Keywords: *Artificial Intelligence, Teacher-Student Relationships, Ethical Risks, Ethical Roots, Relief Paths*

1. Introduction

With the rapid development of science and technology, the era of artificial intelligence has quietly arrived, and the penetration of artificial intelligence technology has revolutionized the traditional teaching mode, and the impact on teacher-student relationship is also becoming more and more prominent. The purpose of this paper is to explore and analyze the specific impact of artificial intelligence technology on teacher-student relationships in educational change, reveal the current ethical problems in teacher-student relationships, explore their roots, and put forward corresponding paths to crack. The research in this paper not only helps to deepen the understanding of teacher-student relationship in the era of artificial intelligence, but also provides useful references and lessons for the healthy development of education in the future.

2. The Ethical Risks of Teacher-Student Relationships in the Era of Artificial Intelligence

In the era of artificial intelligence, changes in the field of education are surging, and teacher-student relationships are facing many new challenges. Teacher-student interaction modes are changing, emotional interaction is blocked, and a crisis of trust has emerged, and these problems need to be analyzed in depth to find solutions.

2.1. Changes in Teacher-Student Interaction

In the era of artificial intelligence, the education field has undergone profound changes, and the teacher-student relationship is facing new challenges. Traditionally, teachers are the knowledge transmitters and students are the receivers, and this model has dominated education for a long time. However, the integration of artificial intelligence technology, such as intelligent teaching systems and online learning platforms, has broadened the channels of knowledge acquisition and made student learning more independent, convenient and efficient. Students are no longer completely dependent on teachers, which improves learning efficiency but brings about the problem of alienation of teacher-student interaction. Excessive reliance on technology, students may be tired of face-to-face teaching, reduce classroom participation, or even do not cooperate, affecting teaching. Teacher-student interaction is reduced, classroom vitality and efficiency are impaired, teacher-student distance is increased, and communication barriers are revealed. Teachers' guiding and motivating roles may be weakened, and students miss opportunities for in-depth communication. At the same time, the teacher's role changes, the dominant position is challenged, and some students ignore the value of the teacher in the transfer of knowledge, all these changes urgently require us to re-examine the teacher-student

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relationship. These challenges have weakened the status of teachers as the authority of knowledge and the main body of teaching, and also diluted the ethical relationship of "karma" between teachers and students due to the transmission of knowledge and learning,[1]The traditional teacher-student interaction model suffers from great ethical risks.

2.2. Emotional Crisis Surfaces

With the continuous penetration of AI technology in the field of education, the teacher-student relationship is undergoing profound changes, and the blockage of emotional interaction has become a remarkable phenomenon, leading to the gradual alienation of the teacher-student relationship. In the traditional education model,[2]emotional interaction between teachers and students is an important part of teaching and learning, with teachers understanding students' needs and providing personalized guidance through face-to-face communication, and students feeling cared for by teachers and actively engaging in learning. However, the intervention of intelligent technology has eroded the ethical space of teacher-student dialog and impacted the traditional emotional interaction mode. Although intelligent teaching systems and online learning platforms provide convenient and efficient learning methods, they reduce the opportunities for face-to-face communication between teachers and students, and students interact more with machines and lack emotional communication and collision of ideas with teachers. In the virtual teaching situation, teacher-student communication is transformed into text symbols,[3] teachers cannot observe students' emotions, it is difficult to transmit emotional support, and teacher-student emotional interaction is gradually weakened or even faded.[4] This alienation makes it difficult for teachers to understand the real needs of students and provide effective guidance, and students also feel lonely and helpless due to the lack of emotional connection, which affects the motivation and effectiveness of learning, and also negatively affects teachers' professional development and enthusiasm for teaching.

2.3. Crisis of Trust Emerges

Algorithmic decision making has been increasingly used in education, which has brought a lot of convenience to teaching, but it has also triggered a crisis of trust between teachers and students. In the traditional education model, the relationship between teachers and students is based on trust. Teachers provide guidance and assistance to students by virtue of their professional knowledge and teaching experience, while students trust teachers' judgment and advice and actively cooperate with teachers' teaching activities. This relationship of mutual trust forms the basis of education and is an important guarantee that teaching activities can be carried out smoothly. However, with the increasing popularity of algorithmic decision-making, teachers are prone to the challenge of unconscious pedagogical ethical misconduct when relying on the logic of big data on which AI is based. [5]The big data behind artificial intelligence and its related analytical logic may, to a certain extent, weaken teachers' ability to care deeply about individual students, making the teaching process more focused on data-driven logical judgments and neglecting in-depth attention to students' emotional, psychological, and personalized needs. Algorithmic decision-making often relies on data and models, while ignoring humanistic care and individual differences in the educational process. When students find that their learning outcomes and assessments are subject to "cold" algorithmic decision-making, they may feel neglected and misunderstood, and thus distrustful of teachers and the education system as a whole.

3. The Roots of Ethical Risks in Teacher-Student Relationships in the Era of Artificial Intelligence

Exploring the roots of ethical risk in teacher-student relationships, we will analyze three perspectives: technological rationality algorithmic bias, and teacher-student roles.

3.1. Expansion of Technical Rationality and Neglect of Humanistic Concerns in Education

In the era of artificial intelligence, technological rationality is over-inflated, especially in the field of education. Technical rationality emphasizes efficiency, standardization and quantification, which makes education tend to be mechanically utilitarian, humanistic care is neglected, and the ethical risk of teacher-student relationship is becoming obvious. Max Weber divided rationality into two types: instrumental rationality and value rationality. Instrumental rationality is committed to the pursuit of the maximum efficacy of things,[6]Initially, one-sided technical rationality is prone to ethical dilemmas,

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education is reduced to data processing and algorithm execution, ignoring students' individual differences and emotional needs, and destroying the emotional connection between teachers and students. The expansion of technological rationality makes education emphasize performance efficiency over emotional and personality development, and the evaluation system is single, so that students' diversified development and individuality are neglected and their subjective status is weakened. Teachers lose the ability to teach students according to their aptitude, and emphasize knowledge transfer rather than ethical and moral guidance, which damages students' moral development or triggers tensions in teacher-student relationships. The essence of education is distorted and reduced to a competition of data and rankings, and the teacher-student relationship is challenged.

3.2. Algorithmic bias affects the construction of teacher-student relationship

In the era of artificial intelligence, algorithms are widely used as educational decision-making tools, but they are not completely objective and neutral, and often contain bias and discrimination, affecting educational fairness and becoming a source of ethical risk in the construction of teacher-student relationships. Intelligent teaching products are prone to ethical dilemmas due to design bias, which is contrary to the concept of “human-centered” education. Algorithms rely on data, but educational data are unevenly distributed and labeled with discriminatory tendencies, which may lead to bias. Algorithmic bias leads to a crisis of trust between teachers and students, and unfair resource allocation and evaluation makes students question the fairness of teachers and destroys trust. It may also exacerbate teacher-student conflicts, with students becoming angry and frustrated by bias and resisting teachers and schools. In addition, algorithmic bias undermines teachers' teaching motivation and innovation, and teachers over-rely on algorithms and neglect professional judgment. Therefore, it is necessary to treat algorithmic applications prudently, strengthen ethical review and supervision, improve the algorithmic literacy of teachers and students, and encourage teachers to incorporate professional judgment to avoid ethical risks and achieve quality and balanced development of education.

3.3. Blurred roles of teachers and students and unclear boundaries of responsibility

In the age of artificial intelligence, technological innovations and paradigm shifts in education are blurring the traditional roles and responsibilities of teachers and students, which has become an important cause of ethical risks in the teacher-student relationship. Teachers' diversified roles, including mastering educational technology, guiding and supporting students' learning, and even participating in technology development and evaluation, not only raise the requirements of professionalism, but also lead to difficulties in coordinating the change of roles and blurring the boundaries of responsibility. Students' roles have also changed, as they can learn and assess independently with the help of technology and participate in content creation and sharing, which makes their roles diverse and complex, but may lead to difficulties in independent learning and self-management, and unclear responsibilities and obligations. For example, students may not know who to turn to for help and responsibility if they encounter problems when using the technology platform. This ambiguity may also lead to a crisis of trust, destabilizing the traditional relationship of trust. For this reason, the roles and responsibilities of teachers and students need to be re-examined.

4. Mitigation Strategies of Ethical Risks in Teacher-Student Relationships in the Era of Artificial Intelligence

In the era of artificial intelligence, a multi-pronged approach is needed to mitigate the ethical risks of teacher-student relationships. Optimizing the ecology of educational technology application is the foundation, reshaping the interaction mode is the key, and clarifying the role of teachers and students and improving the mechanism of ethical responsibility are the core to ensure the healthy development of education.

4.1. Optimizing the ecology of educational technology application

In the era of artificial intelligence, optimizing the ecology of educational technology application is crucial for mitigating the ethical risks of teacher-student relationship. First, it is necessary to strengthen the review of technology ethics to ensure that educational technologies follow strict ethical standards, and developers should assess their impact on teacher-student relationships to reduce negative impacts.

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Second, the technical support system should be optimized, data protection measures should be established to ensure information security, and teachers and students as users of the technology need to be equipped with key literacy and competencies to cope with the opportunities and challenges of the development of smart technologies.[7]Further, it is necessary to balance technological rationality and educational humanism, design humanized AI tools, and respect students' emotions and personalities, so as to make the deep integration of technology and education. In addition, educational goals and methods should be rethought, and AI should be regarded as a resource to stimulate students' creativity. To this end, a collaborative mechanism involving multiple parties needs to be established to jointly develop and implement ethical risk prevention strategies.

4.2. Reinventing Teacher-Student Interaction

In order to alleviate the emotional and trust crisis in the teacher-student relationship, it is necessary to reinvent the teacher-student interaction mode. The traditional one-way teaching method is prone to alienation of interaction and makes teaching boring. Knowledge transfer should be innovated, and interactive elements such as group discussions and case studies should be introduced to stimulate students' interest, increase participation and strengthen teacher-student interaction. At the same time, pay attention to the emotional needs of teachers and students, understand the psychological state of students through symposiums, individual counseling, etc., give care and support, and encourage students to express their emotional views and enhance emotional communication. In addition, rebuild the trust mechanism, optimize the algorithmic decision-making, ensure its fairness and transparency, teachers participate in the development and implementation, set an example of integrity, and guide students to establish correct values. In this way, a harmonious, intimate and trusting teaching environment can be created to promote the healthy development of education and the overall growth of students.

4.3. Clarifying the ethical roles of teachers and students

In the era of artificial intelligence, it is crucial to re-examine the role positioning of teachers and students and improve the ethical responsibility mechanism. In traditional education, teachers are knowledge transmitters and students are recipients. Nowadays, however, teachers need to guide students to learn to learn and cultivate innovative thinking and practical skills, while students become the main body of learning by actively exploring with the help of smart tools. Teachers and students need to take on more ethical responsibilities, and a detailed list of ethical responsibilities should be drawn up to help both parties recognize their responsibilities. Teachers need to have a sense of role change,create a new ethical space of “teacher-machine-student” harmonious coexistence.[8]Teachers should change their roles from knowledge transmitters to learning guides, emphasizing the creation of contexts and emotional support to ensure fair and accurate teaching and avoid bias. Students should observe academic integrity and actively participate in the classroom. In addition, ethical responsibilities should be integrated into all aspects of education, and ethical factors should be fully considered in the curriculum, teaching methods, and evaluation system, so as to encourage teachers and students to practice ethical responsibilities and jointly promote the healthy development of education.

5. Conclusion

With the deepening of artificial intelligence and education reform, teacher-student relationships are facing new challenges and opportunities. We need to pay continuous attention to ethical issues and explore relief strategies to ensure humanistic care and fairness in education. In the future, the integration of the two will be even closer, and it is necessary to prevent ethical risks, update ethical norms, build an efficient, fair, innovative and inclusive educational ecology, and cultivate future talents.

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