

The Impact and Reshaping of Teacher-Student Relationships by Artificial Intelligence

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Abstract. As artificial intelligence enters the classroom, the modes of interaction between teachers and students are undergoing profound changes. This paper argues that the primary impact of AI on teacher-student relationships is not the replacement of teachers, but rather a shift in teacher-student interaction from direct to indirect, from embodied to abstract, and from emotional to procedural. The key to reshaping this relationship lies in clarifying AI's role as a tool, allowing teachers to return to their role as emotional companions, and protecting the unquantifiable spaces of interaction in education.

Keywords: Artificial intelligence; teacher-student relationship; structure of interaction; teacher authority; teacher-student trust; emotional connection.

1. The Irreplaceability of the Teacher-Student Relationship

The fundamental reason education differs from mere information transmission is that it is built upon genuine human interaction. Martin Buber's "I-Thou" relationship, a genuine encounter of mutual inclusion and mutual recognition, represents the ideal state of the teacher-student relationship. In contrast, the "I-It" relationship objectifies and instrumentalizes the other [1]. Once the teacher-student relationship slips into the "I-It" mode, education loses its soul. Biesta also emphasizes that one of education's core functions (the process of subjectification through which an individual becomes a unique subject) can only be achieved through real human encounters; technology cannot replace this [2]. Therefore, the teacher-student relationship is not merely the background or condition of teaching, but the very baseline for whether educational activity can be considered valid.

2. Multidimensional Impacts of Artificial Intelligence on the Teacher-Student Relationship

2.1. Technological Mediation of the Interaction Structure

When AI systems become a permanent third party in the classroom, direct dialogue between teachers and students is interrupted by technological mediation. Students first turn to intelligent assistants when they encounter problems, and teachers first consult data analytics to understand students. Machines not only transmit information but also filter and reorganize it, weakening the bond between teachers and students. The technologicalization of education has a significant negative impact on the relationships between teachers and students, and among students themselves [3]. This process shifts the teacher-student relationship from an "I-Thou" relationship toward an objectified "I-It" relationship. The consequences are obvious: students feel they are interacting more with a system, while teachers find themselves increasingly resembling data administrators. A case study on the development of AI-led courses, based on in-depth interviews with 11 primary and secondary school teachers, found that "alignment" became the key term for teachers preparing for AI-assisted lessons, appearing 14 times across all interview materials [4]. Such alignment requires teachers to expend considerable effort adapting to the logic and interface of machines, rather than using that time to build natural dialogic relationships with students. Moreover, each update of the technical system may force teachers to re-enter an adjustment cycle, meaning alignment is never a one-time task. In other words, technological mediation represents a sustained diversion of attention, redirecting focus that would

otherwise go to students toward the debugging of human-AI collaboration. The warmth of education gradually dissipates in this process of mediation.

2.2. Teacher Authority Shifts from Professional Judgment to Algorithmic Reliance

Traditional teacher authority is built on professional knowledge and personal charisma. AI introduces the objective authority of algorithms, breaking the teacher's knowledge monopoly. As Yang Zongkai and colleagues point out in a dialogue, AI makes teachers and students increasingly equal in knowledge possession; in the post-authority era, teachers must rely on emotion to regain student trust [5]. However, the problem is that algorithmic tools are automating core teaching tasks such as lesson preparation, assessment, and learning diagnosis, forcing teachers to struggle to defend their professional judgment within technical systems [6]. When algorithmic recommendations conflict with teacher intuition, teachers often find themselves in a dilemma: sticking to their own judgment may be criticized as "unscientific," while obeying the algorithm may lead to loss of professional autonomy. Borchers et al. [4] analyzed 1,349 AI-generated feedback instances and corresponding editing records from 117 teachers, finding that in approximately 80% of cases, teachers accepted AI feedback without any modification. In terms of editing behavior, significant individual differences emerged: about 50% of teachers never edited AI feedback, while only about 10% edited more than two-thirds of the feedback instances. This phenomenon reflects two interconnected problems. First, teachers exhibit a cognitive bias toward algorithm outputs, tending to treat AI-generated content as objective conclusions requiring no scrutiny rather than as questionable information requiring professional judgment. Second, current teaching management systems prioritize efficiency and standardization, leaving teachers with insufficient time or institutional incentives to review AI feedback line by line, leading over time to passive acceptance of algorithmic outputs. When teachers generally abandon the revision of AI-generated content, algorithm outputs enter the teaching process directly, excluding professional judgment. Thus, the expansion of algorithmic authority, the institutional embedding of technical systems, and teachers' passive acceptance of algorithm outputs are mutually reinforcing, reshaping the actual boundaries of teacher professional autonomy.

2.3. Teacher-Student Trust Undermined by Information Asymmetry

Trust is the cornerstone of the teacher-student relationship. However, AI applications create asymmetrical transparency. Students are required to disclose their AI usage records or even submit chat logs for review, while the teacher's grading process and the logic of technology application lack the same level of transparency. This one-way surveillance power places students in an insecure environment of discipline [7]. Once trust is replaced by technical logic, sincere dialogue between teachers and students degenerates into mutual suspicion. At the same time, the integration of AI weakens teacher agencies, leading to excessive reliance on system-generated content, further weakening trust [8].

The trust crisis brought about by technological surveillance has been revealed in multiple empirical studies. Calderwood [9], through qualitative interviews with teachers at a UAE university, found that digital surveillance technologies—including plagiarism detection, classroom recording, and learning analytics tools—are eroding trust in teacher-student relationships. Under surveillance pressure, teachers tend to adopt performative behaviors to meet system requirements rather than focusing on authentic teaching interactions. The study further notes that surveillance mechanisms implicitly convey distrust of student integrity and teacher professional judgment; one teacher stated that the culture of surveillance transforms teacher-student interaction from trust-based to discipline-and-compliance-based. In fact, teachers generally possess a high degree of professional self-discipline, and unexcused absences or lateness are extremely rare. Yet when machines replace trust, and control replaces service, the goodwill of technology disappears entirely, leaving only cold opposition and alienation. Cubio [10], through focus group interviews with 60 teachers, similarly confirmed this trend: 16 teachers explicitly identified AI surveillance as an invasion of classroom trust, with

significant negative effects on student behavior and classroom atmosphere. The resulting vicious cycle is clear: administrator distrust of teachers and students drives the deployment of surveillance systems, the opacity of algorithms further undermines the sense of security for both teachers and students, teachers sacrifice pedagogical authenticity to meet system demands, students resist one-way surveillance, and two-way trust between teachers and students gradually disintegrates amid the cold flow of data.

2.4. Emotional Connection Replaced by Data Reading

Excellent teachers can perceive students' emotional states through long-term, face-to-face interaction—a holistic, embodied empathy. AI offers another approach: data metrics such as attention curves and emotion recognition scores. Teachers increasingly read data rather than directly perceive students. Research has found that algorithmic black boxes and algorithmic discrimination lead to emotional masking: students are forced to exhibit expressions and behaviors that conform to system regulations, suppressing their genuine emotions [11]. The lack of emotional interaction freezes teaching activities [12]. More troubling is that the disembodiment of emotional interaction weakens the warmth that education should have, utilitarian tendencies weaken education's formative function, and virtualization exacerbates the sense of alienation between teachers and students [13]. Ouyang and Zeng [14] note that multimodal learning emotion recognition systems can achieve over 70% accuracy in automatically detecting emotional states such as “engagement,” “boredom,” and “neutrality” in real classrooms. However, even if technology can recognize students' external emotions with a certain degree of accuracy, such recognition struggles to capture the true meaning of emotion—students may perform “appropriate” expressions to satisfy the system, while their genuine emotions are suppressed and concealed. Grove et al. [15], in a human-AI comparative study, found that negative emotions (anger, sadness, disgust) captured by AI were almost entirely absent in students' self-reports, whereas human recognition was much closer to students' own feelings. This suggests that AI lacks an understanding of specific contexts, dialogic backgrounds, and individual developmental histories; the emotions it recognizes are mere shadows detached from context. When these shadow data are used to evaluate students and optimize teaching, the teacher-student relationship degenerates from a mutually trusting human-human relationship into a machine-subject data-monitoring relationship, and the warmth of education gradually dissipates in the process. Emotion is not an object that can be fully datafied; once datafied, it is no longer emotion.

3. Practical Pathways for Collaborative Reshaping of Teacher-Student Relationships

3.1. Clarifying the Boundary of AI's Role

The teacher-student relationship should move from an “I-It” relationship of authority and obedience toward an “I-Thou” relationship of independence and equality and further deepen into an “Other-I” relationship of bidirectional symbiosis. The core lies in responsibility, care, and personal inspiration directed from teachers and students toward each other as “Others” [16]. This means AI should not intervene in teaching activities involving value judgments, emotional communication, or moral guidance; these areas must remain under the teacher's direct control. Clarifying the boundaries of technology application is a prerequisite for preventing ethical risks; it should be ensured that algorithmic outputs serve only as reference information for teachers' decisions, not as direct instructions [17]. In accordance with this principle, transactional and informational interactions, such as assignment submission and resource delivery, can be handled by AI to free up teachers' time; emotional and value-laden interactions, such as help-seeking, value discussion, and emotional support, must be completed by teachers themselves.

However, if the boundary division remains only at the level of principle, it will be difficult to achieve practical effects in specific teaching contexts. Schools also need to formulate clear

application checklists, itemising which teaching activities can be AI-assisted and which must maintain direct interpersonal interaction. The basis for formulating these checklists should come from a careful examination of the nature of different teaching tasks; the strength or weakness of technical capabilities does not constitute a criterion. A survey by Oh and Ahn [18] indicates that teachers' attitudes towards AI are highly context-dependent. They welcome AI assistance in administrative affairs and personalised learning recommendations but remain vigilant about AI's deficiencies in social-emotional capabilities, believing that tasks involving emotional judgement and interpersonal communication should not be delegated to AI. On this basis, teacher training should also add a module on "AI application ethics" to help teachers accurately identify in their daily work which aspects fall within the technical red line. The three steps, namely principal establishment, checklist formulation, and teacher capacity building, work in coordination to draw a clear and enforceable boundary between technological intervention and interpersonal interaction. In this way, AI truly serves education, and the irreplaceable human aspects of education are not dissolved by technology.

3.2. Reconstructing the Teacher's Role

The establishment of role boundaries inevitably requires that the connotations of the role be adjusted accordingly. Once AI takes over transactional and informational teaching interactions, teachers are freed from a considerable amount of repetitive work. Yet this liberation does not automatically point them in a new direction; on the contrary, it forces them to re-address a fundamental question. When machines can grade assignments, recommend resources, and diagnose learning progress, what exactly is the unique value of teachers? In facing this query, teachers need to return to their functions as emotional companions and value guides. These tasks, which involve touching students' hearts and transmitting values, constitute the core of education that technology can neither simulate nor replace. At present, the ethical relationship between teachers and students is exposed to the risks of "virtualisation" and "hollowing out" under the impact of technology. Cultivating themselves with the spirit of educators, strengthening their ideals and convictions, nurturing their moral sentiments, and diligently fostering a heart of benevolence are the internal foundations for teachers to uphold their educational essence [19].

Nurturing the educator spirit is a response at the conceptual level. The genuine transformation of the teacher role also calls for simultaneous support from the evaluation system. If schools continue to use academic achievement or AI-recommended teaching efficiency scores as the primary criteria for evaluating teachers, then even if teachers conceptually identify with the role of emotional companion, they will still be compelled in practice to invest their efforts in data management. The evaluation system should be appropriately oriented towards dimensions such as the quality of teacher-student interaction, personalised care, and developmental guidance, thereby steering teachers to shift their energy from coordinating with machines to engaging in heartfelt communication with students. Accordingly, schools should bring those unquantifiable educational acts, for example a timely word of encouragement or a patient listening, into the evaluation purview through peer review, student feedback, self-narratives, and other means. In so doing, the teacher's role can be restored from that of data manager to that of growth guide.

3.3. Establishing Institutional Safeguards

The core purpose of institutional construction is not control, but to preserve the necessary space for the genuine, unquantifiable interactions between teachers and students. At the access level, an ethical review and filing mechanism for AI applications should be established, requiring all classroom AI systems to undergo assessment before they can be put into use. Proactive development of ethical rules is a prerequisite for preventing technological risks. At the data level, the collection of sensitive data must obtain separate authorisation from teachers, students, and their guardians, with regular reviews to ensure that information sovereignty is not encroached upon by technology platforms. At the decision-making level, key decisions concerning student development, such as academic evaluation and recommendation for honours, should be ultimately the responsibility of teachers, with

AI output serving only as a reference and not substituting for teachers' professional judgement. The Reference Framework for AI Education Ethics, released at the 2026 World Digital Education Conference, also affirms the core principle of human-centred agency, emphasizing that in the application of AI in education, the dominant position of humans must be upheld [20]. At the remedy level, internal appeal channels should be established within schools to address disputes arising from AI misjudgments, ensuring that technological applications remain within a framework that is informed, controllable, and appealable for both teachers and students.

Beyond the norms of technology use, space interaction itself also requires institutional protection. When technological surveillance covers every corner of the classroom, and every conversation may be recorded, analyzed, and evaluated, the soil for sincere, heartfelt communication is lost. Schools should institutionally preserve periods and spaces free from technological monitoring, for example by explicitly stipulating that certain classroom discussions must not be audio- or video-recorded, and that certain one-on-one conversations must not be entered into any data system. The algorithmic logic of AI systems must also remain transparent to teachers; recommendations for academic evaluation should be accompanied by traceable explanations, and the acceptance rate of system recommendations should not be used as the sole criterion for judgement. These institutional arrangements collectively point to an overarching intention, which is to allow technology to enter education while simultaneously preserving, for the unquantifiable human connections between teachers and students, a territory that algorithms cannot penetrate.

4. Conclusion

Artificial intelligence is profoundly changing the forms of teacher-student interaction, but technology is, after all, a means, not an end. The core impact of AI on teacher-student relationships is not the distant risk of teacher replacement, but the ongoing processes of mediation, proceduralization, and datafication of interaction. These transformations have already shown preliminary effects observable in empirical research. From the decline in interaction frequency to the erosion of teacher autonomy, from the asymmetric breakdown of trust to the data-driven substitution of emotional interaction, each dimension of impact is not a purely theoretical deduction but a practical issue that must be taken seriously.

These findings have clear implications for educational practice and policy. First, for school administrators, the introduction of AI systems should not focus solely on efficiency gains but should also assess the potential impact on teacher-student relationships and proactively establish protective measures—for example, technology-free interaction periods should be institutionalized rather than treated as optional suggestions. Second, for teacher training, beyond technical operational skills, training should strengthen teachers' awareness and ability to maintain professional autonomy and emotional judgment in AI-rich environments. Teachers need to learn to coexist with technology without being alienated by it—this means making good use of AI to offload transactional labor while remaining alert to the subtle erosion of professional judgment by algorithmic suggestions. Third, for policymakers, ethical review mechanisms for AI in education should move beyond principled advocacy to include specific evaluation indicators, such as measurable dimensions like changes in teacher-student interaction quality, teacher dependence on systems, and student subjective perceptions of technological surveillance. Fourth, for technology developers, educational AI should shift from a logic of efficiency maximization to a logic of relationship-friendliness, building spaces at the algorithmic level for teacher intervention and revision rather than placing teachers in a position of passively accepting algorithm outputs.

To safeguard the humanistic essence of the teacher-student relationship, we need to maintain a clear awareness of boundaries while embracing technology. Only by letting tools remain tools and letting teachers be teachers can education retain its due warmth in the intelligent age.

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