



# Ethical Review of Teacher-Student Interaction in the Perspective of Smart Education and Exploration of Pathways

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**Abstract.** Humanity is moving from the information age to the data age, and the integration of modern information technology and education, such as 5G, big data and artificial intelligence, has given rise to a more profound core of smart education in addition to the knowledge-driven form of education - that is, the sharing of information and knowledge through education informatization. At present, in the face of the new challenges posed by smart education, traditional ethics have been transformed, and teacher-student interaction, as a form of social ethics, is also facing the challenges and changes of smart education. This paper takes teacher-student interaction as the object of analysis and attempts to clarify the ethical issues of teacher-student interaction in the context of smart education. At the same time, based on the characteristics of wisdom education, this research analyses the impact of this change on the ethics of teachers and students from four dimensions: interaction subject, interaction time and space, interaction language and interaction tools, discusses the new ethical issues of teacher-student interaction in China, and on this basis, proposes a scientific and effective development path for teacher-student interaction under wisdom education.

**Keywords:** Smart education · Teacher-student interaction · Ethical review · Path exploration

## 1 Introduction

In 2012, China's Ministry of Education released the Ten-Year Development Plan for Education Informatization (2011–2020), marking China's official entry into the "Education Modernization 2.0 Era" and laying the corresponding policy foundation for the development of smart education. Since then, the "Education Informatization 2.0 Plan" proposed in 2018 has further promoted the process of intersection and integration of smart education and classroom teaching. Smart education is an inevitable trend and advanced form of education informatization development [1], which is to create rich and dynamic teaching activities through visual information presentation, convenient teacher-student interaction, advanced intelligent applications, and instant teaching feedback, to promote interactive teaching and learning generation, and to promote the deep integration of modern education and modern information technology.

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Interaction is a product of the development of information technology, reflecting the interaction and interaction of information and knowledge. In this context, teacher-student interaction refers to the communication between teaching and learning and the mutual influence between teachers and students, with the specific teaching task as the goal and the corresponding teaching content as the medium. The core of teacher-student interaction in the context of intelligent education is deep interaction [2], which is a reasonable integration of modern information technology tools, in order to complete a comprehensive teaching task, using the specific teaching content as the medium, and thus seeking a suitable role relationship between teachers, students and information technology.

The teacher-student relationship is one of many interpersonal relationships, and therefore behind the teacher-student relationship is carried a large ethical and moral system, i.e. the basic human ethics underlying the process of teacher-student interaction. However, the special nature of the teacher-student relationship is reflected in the task of ‘preaching, teaching and solving problems’, and therefore the unique teacher-student ethics in the teaching and learning process are also to be observed. The most basic human ethics and the particular teacher-student ethics constitute the criteria that will define the existence of a genuine ‘teacher-student relationship’ between the two entities. In a time of rapid development of smart education, the traditional teacher-student interaction between teachers and students as subjects in smart education is confronted with abrupt changes in interpersonal interaction and teaching methods, and a number of existing and foreseeable problems have emerged in teacher-student interaction, which also need to be adjusted and resolved accordingly.

## **2 Ethical Connotations and Characteristics of Teacher-Student Interaction in the Context of Smart Education**

Smart education aims to improve students’ cognitive and affective abilities through the combination of education and information technology, and adequate and effective teacher-student interaction before, during and after class is one of the key elements to achieve this goal. Taking MOOC as the research background, Zhang Song et al. argue that teacher-student interaction in a virtual environment includes three parts: interaction subject, interaction language, and interaction space-time [3]. In addition, Wu Anyan et al. suggest that online teacher-student interaction will necessarily rely on the development of modern information technology and that different kinds of interaction tools must be used [4]. Therefore, this study takes the interaction subject, interaction space-time, interaction language and interaction tools as the four research dimensions, so as to analyse the characteristics of teacher-student interaction under the perspective of educational wisdom.

### **2.1 Virtualisation of the Interaction Subject**

Traditional teacher-student interaction is instantaneous, centralised and face-to-face, but with the development and advancement of virtual technology, interaction between teachers and students also exists in cyberspace, and the subject of interaction is no longer

presented in physical form, but replaced by virtual images such as social accounts, avatars and dynamics. The ‘de-roleisation’ of teacher-student interactions has led to teachers and students participating as equal users in intelligent teaching and learning, posing new challenges to the traditional ethical and moral system of ‘teacher dignity’ in China, and hence the need to establish new ethical principles for teacher-student interactions. In traditional education, teacher-student interactions begin to take place when the learning plan for the course is determined, but in the context of smart education, teacher-student interactions no longer simply exist in offline meetings. As Duan Zhaohui et al. point out, online teacher-student interaction is significantly correlated with online learning performance, both directly and indirectly [5]. Especially during special epidemics, has shifted to passively or actively constitute a completely implicit interaction that is not based on basic teacher-student interpersonal interactions, and the efficiency of intelligent learning will be greatly reduced.

In addition, in order to solve the problem of uneven distribution of educational resources in traditional education, especially the geographical differences in teacher quality, and thus to improve rural education, smart education uses the bridge built by the “Internet + education” to achieve the “multiple use of one teacher” of master teachers. As a result, students learn from quality teachers, but lack the intimacy of traditional teacher-student relationships.

## **2.2 Increased Spatial and Temporal Distance of Interaction**

Teacher-student interactions are not only purely about the teaching and learning interactions between teachers and students, but also include normal social interpersonal relationships. The majority of teachers and students in smart education are no longer interacting face-to-face, with related educational platforms and social networks becoming the preferred option. As the American scholar Moore’s theory of interaction distance states, interaction distance refers to the psychological distance between the learner and the teacher [6]. Teacher-student interaction in smart education becomes indirect, and if the teacher or student chooses to ignore or even disregard the other party’s request for communication, the interaction becomes more difficult. The interaction, communication and evaluation are no longer controlled by the subjective consciousness of the teacher and the student, and the platform that holds them together must be able to communicate the consciousness of both the teacher and the student in a timely and accurate manner. Although the development of modern information technology has reached unprecedented heights, there are still some technical shortcomings that hinder the efficiency and quality of teacher-student interaction.

## **2.3 Diversity of Interaction Languages**

Teachers and students in a smart education environment do not only rely on verbal communication, but can also use text, pictures and emoticons from social networking software, or unique interaction methods from online education platforms, such as audio, live streaming and recorded videos, to evaluate each other, share resources and discuss educational content at a deeper level. Ding Xiuzhu and other scholars point out that

the number of interactions, the content of interactions, and the effectiveness of interactions are the evaluation criteria for assessing the quality of individualised teacher-student interactions [7]. In traditional face-to-face teaching, teachers can effectively interact with teaching and knowledge through body language, facial expressions, and board books. Although the rich and varied language of online interaction appears to increase the emotional, academic, and attitudinal communication of teacher-student interactions, Yang Min et al.'s study shows that teachers dominate when communicating online, mainly by commenting on teaching content, and learners' free discussion is less frequent, with little discussion involving academic content and high-frequency words mostly expressing gratitude for the teacher's guidance [8]. Thus, although information technology has provided the possibility of diverse interactive languages and technical support for teacher-student interaction, yet teachers and students have not really integrated into the convenience and advantages brought by intelligent education.

#### **2.4 Objective Shortcomings of Interaction Tools**

According to Shi Yinghui and other scholars, the process of smart teaching can lead to pauses or confusion in teaching and learning when interacting due to problems such as unstable network operation and poorly connected intelligent systems [9]. Whether it is traditional offline teaching or teaching under today's smart education, the ability to guide students to reach the teaching task based on effective teacher-student interaction will be a fundamental task for teachers and teaching. Interaction tools in smart education are a necessity, as teacher-student interaction in smart education contexts is built on virtual 'wires', and teachers or students may not be able to interact with each other due to network and equipment, but their unavoidable uncertainty casts a haze over the smart classroom which may 'stop' at any time. "However, the unavoidable uncertainty of the classroom is a haze that can stop at any time, thus affecting the progress of teaching and learning.

### **3 New Ethical Issues in Teacher-Student Interaction**

#### **3.1 The Deflation of the Interaction Subject Leads to the "Dilution" of the Teacher-Student Relationship**

The time, place and form of teacher-student interaction under smart education have become elusive. The instability of such external factors also affects the teacher-student relationship, and the most direct effect is to lead to the dilution of the teacher-student relationship. What human interaction requires is longer, stable, intrinsically emotional and deep communication and contact in order to establish a relatively solid relationship for the further development of specific activities and affairs. The teacher-student relationship, as a type of interpersonal relationship, is necessarily subject to the same influences and disruptions. More crucially, teacher-student interaction is not based solely on life and work, but aims to teach human civilisation, truth and skills. When the relationship between teacher and student is not trustworthy, the alienation of the two in their ethical relationship inevitably leads to a decline in the effectiveness and quality of teaching and learning. With the integration of modern information technology into life and

education, human relationships are moving towards instrumentalisation, fragmentation and transience. The essence of these changes is the loss of ethical values in society and the dominance of rationality and contractualism, focusing on leading to the dilution of interpersonal relationships.

### **3.2 The Spatial and Temporal Distance of Interaction Exacerbates the Emotional Detachment of Teachers and Students**

Tina Kindeberg notes that teacher-student interactions need to be based on mutual trust [10]. However, teacher-student interaction in smart education is limited by the level of development of information technology and the willingness to interact unilaterally, making it difficult for teacher-student interaction to take place in such an environment and negatively affecting the effectiveness of the interaction. Some teachers are not acutely aware of the challenges posed by smart education and even leave themselves out of the picture, failing to improve their own information literacy and ability to participate in the online social environment, leading to a psychological detachment from their students. When the teacher's intelligent education is not recognised and supported by the students, the classroom will become a self-directed performance by the teacher alone, and the ethical relationship between teacher and student will cease to exist.

### **3.3 The Variety of Interactive Languages Leads to a Reduction in the Teacher's Authority**

The development of smart education makes the language of interaction between teachers and students transmitted through modern information technology means, lacking the richness of traditional teacher-student interaction in terms of voice intonation and facial expressions, making teacher-student interaction under smart education become "teacher-client" and "student-client" indirect interaction. "This makes teacher-student interactions under smart education become indirect interactions between the teacher and the client and between the student and the client. The emotional communication and personality feelings that used to be part of the interaction process are lost due to the intervention of indirect platforms, challenging the ethical emotions and ethical performance of teacher-student interactions. As a result, teacher-student interactions in the context of smart education need to be more emotionally charged, both in terms of the presentation and expression of the interaction. In the context of smart education, teacher-student relationships and power structures will be challenged as never before, and new ethical concepts and levers of authority for teachers and students will need to be reconstructed.

### **3.4 Deficiencies in Interaction Tools Lead to Lagging Information Transfer Efficiency**

From a pedagogical perspective, the realisation of smart education relies on the internal force of the learner and is not highly controllable by human beings, while from an educational technology perspective, the external factors of the learner play a key role and are highly controllable by human beings [11]. However, in either dimension, the

limitations of modern information technology development are a drawback that cannot be ignored, with interruptions, misinformation and untimely communication affecting the quality of teacher-student interaction. In a smart education environment, interaction tools can operate properly and accurately to guarantee the interaction between teachers and students; otherwise, it will lead to the miscommunication of information, which may seriously affect the relationship between teachers and students, or even break the social and interpersonal ethics of their interaction.

## **4 Exploring the Path of Teacher-Student Interaction Ethics in the Context of Wisdom Education**

### **4.1 The Demand for “Human Beings” in Wisdom Education and the Creation of a Democratic and Equal Teacher-Student Relationship**

The essential identity of teachers and students is that of “people in society”, and no form of modern education can ignore the existence of this basic ethical layer. In the process of educational development, teacher-student interactions that promote the social construction of knowledge can further enhance the quality and effectiveness of teacher-student interactions in smart education, thereby improving student learning performance. The essence of smart education does not require teachers and students to submit to modern technological developments, but rather to provide a richer, smarter and more efficient educational platform, resources and methods, the subject of which is still the ‘human being’. Human freedom should remain a distinctive feature in any era of technological reform, and it is only through the individuality and independence of people that teachers and students can have more freedom to take advantage of the convenience and advancement brought about by smart education and move towards the ‘fast track’ of human educational and intellectual development.

In recognition of the ‘human’ aspect of smart education, democratic and equal teachers and students can guide and encourage students to participate in the process of smart education, enlivening the teaching and learning environment, promoting deeper learning activities and facilitating students’ learning, mastery and application of knowledge and technology. Secondly, when students are able to participate effectively in the smart classroom, the interaction between teachers and students can truly take place and become the real growth point of smart education, while facilitating the enhancement of emotional exchanges between teachers and students, thereby strengthening the recognition of the ethical nature of teachers and students.

### **4.2 New Transformation of the Role of “Teacher and Student” and the Creation of an Ethical Community of Teacher-Student Interaction**

The development of the Internet has had a new impact on the traditional teacher-student relationship, and the rights of teachers and students have changed in a subtle way. Hu Qintai et al. point out the reconfiguration of the roles of teachers, students and enterprises in smart education [12]. As the ‘chief among equals’ in the teacher-student relationship, the teacher has priority over the students in terms of traditional teacher-student views,

social life experience and outlook on life, and is therefore expected to be an innovator, a guide, a corrector and a coordinator in the transformation of the teacher-student role. Therefore, teachers must accept and recognise this change in their mindset and teach their students in practice a view of teacher-student education that is consistent with intelligent education. The students, as participants in and feelers of the teacher-student relationship, will be able to feel the obvious change in the teacher and will therefore be inspired by the teacher and the educational environment and climate to integrate into the new teacher-student ethical relationship, thus establishing a democratic and harmonious teacher-student relationship. The type of teacher-student interaction, the mode of interaction, the relationship and the emotional attitudes that result are all based on a good teacher-student relationship [13].

### **4.3 Innovation in Openness and Generation, Reorganisation and Reengineering of the Education and Teaching Process**

Interactive teaching in smart education maintains a high degree of openness and freedom, mainly in terms of teaching content, sources of teaching information and teaching time. The interaction between teachers and students in a smart education platform enjoys the convenience of the rich data and knowledge that smart education brings, and is more able to promote the generative nature of knowledge. The predecessor of smart education was built on innovation, and in its operation, it is only right that it should reflect points of innovation from previous education. Traditional teaching concepts are overturned, teaching methods are further transformed, and teaching objectives reflect more student cooperation, communication, practice and critique in order to stimulate students' interest in learning, ultimately making students the main subjects of teacher-student interaction and constantly generating and creating new learning points.

## **5 Conclusion**

The teacher-student relationship is a fundamental relationship in the occurrence and development of education, and an important relationship that affects the direction of education. By analysing the ethical relationship between teachers and students from the perspective of wisdom education, this study finds that the roles and ethics of both teachers and students need to be reconstructed in accordance with the development of the times. The ethical relationship between teachers and students, as an essential relationship in the interaction between teachers and students, needs to be adjusted in accordance with the development of the times, such as the deconstruction and reconstruction of the ethical value system of teachers and students. However, the re-examination of teacher-student ethical relationships cannot solve the practical problems of teacher-student interaction, and new ideas and plans are needed for the development of teacher-student ethics in the new era.

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