

Towards Others: The Concealment and Unconcealment of Students' Subjectivity in Human-Machine Collaborative Teaching

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Abstract: The widespread application of artificial intelligence technology has not only promoted the development of human-machine collaborative teaching but also provided more possibilities for the development of students' subjectivity, profoundly influencing the way of understanding students' subjectivity. In the process of human-machine collaborative teaching, students, as ethical subjects of unknowability and irreducibility, are simplified to calculable and predictable behavioral indicators, facing the risk of being obscured. Based on this, this study systematically analyzes the specific manifestations and generation mechanisms of students' subjectivity alienation in human-machine collaborative teaching from Emmanuel Levinas's "Otherness" theory, and explores possible paths to achieve the disclosure of students' subjectivity in the process of human-machine collaborative teaching, enabling students to fully exert their subjective initiative and achieve comprehensive and free development.

Keywords: Human-machine collaborative teaching; Levinas; Otherness; Students' subjectivity

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1. Introduction

With the deep integration of artificial intelligence technology in the field of education, intelligent tutoring systems, learning analysis technologies, algorithm-based personalized recommendation and adaptive learning systems are gradually empowering classroom teaching and the learning process. Against this backdrop, human-machine collaborative teaching is regarded as an important path to break through traditional teaching models, improve learning efficiency and achieve precise teaching. Through continuous collection, analysis and feedback of learning behavior data, artificial intelligence plays an important role in individualized teaching, teaching decision support and learning path optimization. Current research on human-machine collaborative teaching mostly focuses on teaching model construction, teaching space transformation and student behavior analysis and so on^[1,2]. At the student level, students' subjectivity is often transformed into measurable and calculable indicators such as learning participation, learning motivation level, autonomous learning ability or behavioral commitment. Relevant research is of great value for analyzing the human-machine collaborative teaching model, but it may also inadvertently reduce students to objects that need to be identified, predicted and regulated.

2. Re-understanding of students' subjectivity in human-machine collaborative teaching from Levinas's perspective

2.1. The development logic and theoretical discussion of the concept of subjectivity

Since the Renaissance, subjectivity has been the cornerstone of modern philosophy. Descartes was the first to turn the focus of philosophy back to the "self". His "I think, therefore I am" first established the central position of the rational subject, thereby laying the ideological framework of the binary opposition of subject and object in modern philosophy. Subjective thinking obscures the subjectivity of others through the establishment of one's own subjectivity, manifested as others and external objects becoming the objects of self-understanding and possession, requiring the object to be "me" in identity. The relationship between people is simplified into the "human-object" subject-object relationship of cognition and being-cognized, and then proceeds to "solipsism".

2.2. Re-examination of students' subjectivity in human-machine collaborative teaching from the perspective of the other

"The other" refers to an existence that is completely independent of "me". The core characteristics of the other are "strangeness", "difference", "unknowability", and ultimately "unpossessability". The other cannot be fully understood, assimilated, or incorporated into my conceptual system by "me", but always exceeds "my" cognition and control as a heterogeneous entity. Levinas pointed out: "Questioning the same is brought about by the other, which cannot occur naturally within the same self-ism. The strangeness of the other, the irreducibility of him to 'me', my thoughts and what I possess are explicitly realized as a questioning of my spontaneity, as an ethics ^[3]". The other is different from me and always exists prior to me. Levinas believes that ethical relationships are not established based on mutual understanding between subjects, but precede all existentialist self-certification, that is, "ethics is the first philosophy". Therefore, he understands subjectivity as an "ethical subjectivity for the other", that is, to be responsible for the other, to be responsible for all others ^[4]. Levinas pointed out: "The relationship between me and the other is unequal. The way of approaching the other lies in my responsibility to him or her. This unreasonably responsible state is similar to the state of a hostage, always moving towards the other, without the need for reciprocity ^[5]". Thus, he criticized the logic of traditional intersubjectivity that pursues intersubjectivity identity and coexistence, emphasizing that there is always an irreducible difference and asymmetry in the ethical relationship between "me" and the other. The asymmetrical ethical relationship is manifested as "my morality and responsibility towards the other do not mean that I expect a return from the other" ^[6]. Ethical relationships are one-way and asymmetrical. Only by breaking through the symmetrical logic centered on the self can one truly move from the self to the other and realize the ethics of being for others.

3. The prescribed value of students' subjectivity in human-machine collaborative teaching from Levinas' perspective

3.1. The student subjectivity oriented towards others

In the context where artificial intelligence and big data technologies deeply integrate into the teaching process, human-machine collaborative teaching has gradually become a new paradigm for future education. Social development and human subjectivity are mutually causal. Social development calls for the awakening of subject consciousness and the enhancement of subjectivity, and the awakening of subject consciousness and the enhancement of subjectivity will also drive social development ^[7]. The cognitive aspect of human subjectivity has transformed into placing humans within a network of relationships with all other living forms, organic substances, and inorganic substances, focusing on the existence of the subjectivity that is truly manifested in the interaction between humans and various "others". This is also a post-humanist perspective of subjectivity ^[8].

3.2. The irreducibility of the student subject

Levinas uses “face” as a metaphor for the other, constructing an ethics of the other. The face of the other has both visibility and invisibility. Recognizing the visible aspect or constructing another aspect of the other in our minds is not sufficient to constitute the face. The face of the other does not have identity ^[9]. In other words, in the metaphor of “face”, people are understood as having irreducible differences between each other. This difference does not remain at the external level but points to the internal irreducibility of the subject. As a form of representation, the visibility of the face always points to the invisible internal dimension of the other. In human-machine collaborative teaching, based on the systematic collection, analysis, and mining of students’ learning behavior data, artificial intelligence technology can accurately identify and analyze students’ learning process, learning status, and learning characteristics, thereby providing data support for the teaching process. This teaching model based on data is conducive to educators understanding students’ learning situations more comprehensively and dynamically, and thereby providing more targeted personalized education for students. In this process, big data reinforces students’ autonomy in choice, and human-machine interaction enhances students’ cognitive initiative ^[10]. At the same time, what technology presents is always the behavior manifestation of students in a specific context, rather than their entire existence as a subject. As Levinas’ face reveals, visible things are never equivalent to existence itself, and any representation of the other cannot exhaust its internal dimension. Although data analysis can reveal students’ learning characteristics and development levels, students are not limited to these established representations, and their development always contains unpredictable possibilities and ingenerated meaning structures. This unpredictability makes students different from any object that can be completely described by a model, becoming a subject existence with generativity and initiative.

4. The concealment mechanism of students’ subjectivity in human-machine collaborative teaching from Levinas’ perspective

4.1. The objectification of students’ subjectivity under the dominance of instrumental rationality

Max Weber believed that human rationality can be divided into two types: instrumental rationality and value rationality. Value rationality is determined by rational thinking to achieve goals, while instrumental rationality is to find the optimal means to achieve the goal through rational calculation ^[11]. In the process where artificial intelligence technology deeply intervenes in education and teaching, data analysis, algorithm recommendations, and system optimization gradually become important bases for teaching operation, and teaching activities are more likely to be dominated by instrumental rationality. When efficiency improvement and score increase become the main or even the only goal, students may be simplified into calculable, predictable, and controllable learning objects, and their subjectivity thus faces concealment.

4.2. The homogenization of students’ subjectivity under intelligent algorithm recommendations

Levinas pointed out that the other has an ethical position that cannot be unified, and its existence always transcends the cognition and possession of the subject. However, the operation mechanism of artificial intelligence, which relies on data modeling and algorithmic reasoning, incorporates students into a framework that is identifiable, calculable, and predictable. The precise feeding of algorithms forces students to be transformed into homogeneous “storage objects”, thereby moving students from “others” to “objects”, and leading them towards uniformity under the dominance of technology. The consequence of the extensive involvement of intelligent technology in teaching is the disappearance of the true others and the arrival of a homogeneous era. Through the data capture and analysis mechanism, intelligent systems record the psychological and behavioral changes presented by students during the learning process, encode them as a series of calculable data symbols, and further enter the technical chain of content generation and model operation. During this process, the original complex and multi-layered individual experiences of students are processed and integrated by algorithms in a “denormalization” manner, gradually being reshaped into a procedural and simplified data structure. Thus, based on these structured data, algorithms filter and push information content, and the personalized customized

plans recommended according to students' learning preferences have the "information cocoon" effect. Individuals are restricted within a limited knowledge domain, with high homogeneity of resources, which easily leads students to develop a homogeneous development tendency. When students are exposed to homogeneous information for a long time, their interests and preferences are repeatedly emphasized, leading to the rejection and refusal of accepting heterogeneous information. In the long run, this will cause students to view the diverse and personalized real and virtual worlds through a single and fixed perspective, resulting in cognitive biases, and the "information barrier" will intensify.

5. The reconstruction path of students' subjectivity in human-machine collaborative teaching oriented towards others

5.1. The uncertainty of the other: The re-emergence of students' subjectivity

In the context of the deep integration of artificial intelligence into education and teaching, the cultivation of students' subjectivity cannot merely remain at the level of knowledge acquisition and ability enhancement; instead, it should be re-examined in the interaction relationship between humans and technology, between the subject and the other, between efficiency and value. In response to the profound influence of artificial intelligence on the teaching process, learning methods, and value judgments, the digital transformation of education should not only leverage the positive role of technology in teaching but also be vigilant against the concealment and regulation of students' subjectivity by technology. Therefore, it is necessary to start from three levels: students' own development, teacher's ethical guidance, and technical design responsibility, to explore the practical paths for the re-emergence of students' subjectivity in the era of artificial intelligence.

First, cultivate students to possess the "human core" that machines cannot replace in the era of artificial intelligence. Although the advancement and development of artificial intelligence technology have brought convenience to our lives and learning, from big data to the current intelligent entities, machines cannot replace or meet the core traits of students as human subjects. Therefore, in the digital transformation of education, there is a need for a kind of "humanistic" education that enables students to recognize themselves, inspire themselves, cultivate themselves, and perfect themselves, so that students can break free from the external "control" of technology.

Second, teachers should focus on cultivating students' ethical concepts and social responsibility. The development of artificial intelligence technology also hides potential ethical risks, such as data privacy leakage and algorithm discrimination. Teachers should guide students to become thinkers and responsible parties of technological ethics, and through in-depth discussions on ethical issues, enable students to form rational understanding and self-restraint of technology application. Post-humanism holds that in the continuous interaction between the subject and the other, the judgment of meaning and the response of value gradually become important ways for the development of subjectivity.

Third, technical designers need to embed the ethical framework into the entire process of technical design. Looking back on the development history, the ethical principles of artificial intelligence have evolved through stages of conceptualization, issue formation, framework construction, and implementation exploration, showing a trend of translating abstract ethical values into standardized and executable normative frameworks.

5.2. The irreducibility of the other: The recognition of students' subjective differences

The truly other-oriented human-computer collaborative teaching model should take the irreversibility of the student's subjectivity as its fundamental premise, and restructure the teaching process, evaluation methods, and technical feedback mechanisms, avoiding reducing the student's subjectivity to a calculable and controllable object.

Promote the systematic reconfiguration of learning methods, and shift the learning logic from result-oriented to process-oriented. In human-computer collaborative teaching, the teaching design should create open tasks, inquiry-based questions, and multi-path learning mechanisms, allowing students to explore independently during the learning process and continuously generate new understandings and meanings through interaction with others. Starting from a single

knowledge point, each student can generate an infinite number of development directions through the interaction between humans and computers. Different students can also find their own, unique development paths that suit them. This truly highlights the student's dominant position in the course. In the context of educational digital transformation, the value of the learning process itself has been unprecedentedly emphasized, and learning itself is more important than the outcome. This transformation reflects the profound reflection of artificial intelligence era on students' learning methods, and also emphasizes the important role of students' initiative and creativity in the learning process.

6. Conclusion

In summary, the deep involvement of artificial intelligence technology is reshaping the relationship structure of human-machine collaborative teaching, and also profoundly transforming the way student subjectivity is generated. Human-machine collaborative teaching is not merely a process of technical empowerment; rather, it is a process in which students, teachers, and intelligent technology jointly generate educational meaning through continuous interaction. Based on Levinas's theory of the otherness, it can be observed that student subjectivity is not merely manifested as autonomous choice and active participation in learning activities; it also reflects its unknowability, irreducibility, and responsiveness as an "other". The fact that the student is the subject lies in the fact that their differences, generativity, and incompleteness can be recognized, understood, and protected in the educational process.

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