Learning & Education
ISSN：2251-2802

Pisco Med Publishing

# Reshaping of the Paradigm of Higher Education by Artificial Intelligence Technology And the Value of Reflection from the Perspective of Educational Philosophy

**Shihao Liu**

**Nanjing University of Posts and Telecommunications, Jiangsu 210023, China**

***Abstracts:*** The wide application of AI technology in higher education is reshaping the paradigm of higher education, and its impact extends to teaching, student management, education system, academic ecology and other aspects and dimensions. From the perspective of educational philosophy, this paper deeply analyses the value theory, epistemology and methodology behind the empowerment of higher education by AI. It focuses on the effectiveness and dilemmas in practice, and then proposes development paths from the dimensions of human-centeredness, ethics, and diversified fusion, with the aim of assisting in the benign inter-construction of AI and higher education, and reshaping the system of educating people in line with the needs of the times.

***Keywords:*** Educational Philosophy; Higher Education; Artificial Intelligence; Holistic Development

## 1. Introduction

Higher education, as an important part of the whole education system, is mainly responsible for cultivating talents, developing science and promoting social services. In recent years, with rapid development of science and technology, artificial intelligence (AI) technology is on the rise, and the ensuing AI technology as a key force to reshape the pattern of higher education has also emerged strongly. AI technology involves a wide range of fields, mainly covering machine learning, natural language processing, computer vision, etc, with accurate data analysis, personalized delivery, intelligent teaching and learning assistance and other functions. AI technology not only expands the boundaries of higher education, but also prompts educators to reconsider the urgency and the technology-enabled education practices in the long run through the process of practicing the existing educational philosophy.

## 2. Philosophical Foundations of Education for Artificial Intelligence Enabled Higher Education

### 2.1 Value theory: the game of instrumental versus value rationality

Educational activity as a purposeful and conscious cultivation of human practice, the educational activity itself is the existence of value, the value from the practice. At the same time, the reaction to the practice, and the higher education under the empowerment of artificial intelligence present a game between instrumental rationality and value rationality, whereas making it possible to unify instrumental rationality and value rationality. Artificial intelligence, as a technology, naturally carries instrumental rationality, and its role is increasingly highlighted in higher education. Nowadays, process and scale talent training system have become the mainstream. In this form, in order to improve teaching efficiency and streamline costs, higher education institutions have introduced a large number of intelligent learning platforms and automatic correction systems, using intelligent technology to dismantle the complex teaching process, accurately controlling the teaching progress and optimizing the allocation of resources. However, we should see the value of education rationality, aiming at emphasizing the overall development of students. And personality manifestation, is by no means the “assembly line” of knowledge transfer, and students are by no means simple“knowledge containers”. Now, under the assistance of AI, there is an urgent need to search for a new balance between the depth of nurturing education and the efficient empowerment of technology. In this case, AI tools can serve the growth of students, and the concept of educating students in higher education can be reflected.

### 2.2 Epistemology: renewal of knowledge and transformation of the learning paradigm

Generally speaking, education is set to help students master the knowledge, and gradually achieve the comprehensive development of human beings through the transmission of knowledge. How to perceive the concept of education, practice, standards and other aspects of the

problem is what the educational philosophy is relevant about. The basic problem of educational development depends on how we understand the education. AI capabilities are based on emulating human intelligence functions, particularly cognitive and logical processes.[1]The impact of AI breaks the traditional way of higher education in which the theory of knowledge is rooted in the classics of the discipline, and the authority of knowledge is concentrated in teachers and textbooks, and the mode of knowledge generation gradually becomes ubiquitous and dynamic. With the help of intelligent search engines and academic big data platforms, students use AI technology to mine and integrate massive academic data, and finally explore a new mode of interdisciplinary knowledge linkage, which not only breaks the professional barriers, but also completes the learning paradigm shift. At the same time, students also rely on AI technology to customize personalized learning paths, constantly conducting active exploration, having collaboration and co-creation, thus reshaping the process of knowledge acquisition and internalization through immersive learning.

### 2.3 Methodology: integration of empirical quantification and humanistic interpretation

In todays era, there are many different methods of education, but there are mainly two aspects from the perspective of the subject and the object. On the one hand, the teachers method of teaching, AI, by virtue of its algorithmic advantage, analyzing empirical quantitative researches on student learning behavior, performance trends, in-depth analysis of the learning difficulties to empower teacher for "individualized teaching". However, the data generated by AI can easily ignore students' individual emotions and cultural background differences, and cannot reflect the unique humanistic complexity to the education field. Therefore, teachers are supposed to pay attention to humanistic care, combining with interpretive methodology, through the data insight into the underlying learning motivation and psychological distress, hence improving teaching strategies, and showing the warmth of teachers. On the other hand, it is the learning method of students. Students who are in the traditional education methods and approaches serve probably as passive recipients. Teachers can have emotional observation of students, focusing on the cultivation of students critical thinking, practice and self-reflection. With the assistance of AI, the students transform their roles from passive "recipients" to "knowledge seekers". Students' learning concepts, learning goals and learning methods have undergone significant changes, but due to the instrumental nature of the technology itself, which is not conducive to the cultivation of students' interpersonal communication skills, teamwork skills, and critical thinking, it is necessary to focus on the use of diversified educational methods to achieve the goal of comprehensive development.

## 3. A Practical Review of Artificial Intelligence Enabling Higher Education

### 3.1 Demonstrating results: personalized learning progression and increased teaching accuracy

One of the key applications of AI-enabled higher education is that it can be used for personalized learning for students at different levels. Currently, a number of colleges and universities have carried out pilot work on intelligent teaching to help with students' academic performance and inspire students' enthusiasm for independent learning, thus having achieved relatively impressive results as well. AI can also facilitate student/tutor matching, putting students in control of their own learning.[2]From the student's end, the intelligent learning system analyses the learning situation based on the student's historical learning trajectory, and provides students with adapted materials and special exercises, such as accurate vocabulary targeting according to the language learning software. It can help students develop independent learning habits, and at the same time, accurately grasp their previous, current, and future learning tasks and goals, so as to achieve a dynamic grasp of the learning situation. From the teaching side, the teacher, based on the data provided by the AI, conducts feedback on the learning situation, focuses on the key and difficult content, and improves the relevance and practicability of the teaching content, while allowing students to acquire knowledge in interactive and interesting teaching, which allows teachers to get rid of the heavy daily work and focus on the cultivation of students' learning awareness. Eventually, we can guide students to lifelong learning and realize the comprehensive development of human beings.

### 3.2 Practical dilemmas: technology dependency and the worry of educational alienation

Using AI in education can have a dramatic impact on the way academic and administrative staff use their time and the manner in which

students are served individually.[3]Although AI can improve students' learning efficiency, teachers' teaching level and school management ability, the original intention of AI applied in teaching can be alienated by the technology during the use, which may lead to the alienation of human beings and deviation from the purpose of education. Nowadays, there are a series of problems derived from the over-reliance on AI. In the teaching and cultivating during higher education level, some teachers rely excessively on intelligent tools, and their research is superficial, losing the ability of independent thinking and in-depth research. Moreover, some students use plagiarism detection system to put several papers together a through such software, distorting the original academic intent, and the results are dissatisfactory. Intelligent assessment tools only focus on the data indicators, ignoring the hidden value of teaching and learning. To be clear, AI is not an "omnipotent key" for teachers and students. It will only narrow the connotation of education and deviate from the original intention of educating people if we are overly dependent on.

### 3.3 Ethical challenges: data privacy breaches and potential risks of algorithmic bias

Researchers fear an assault on individual privacy and rights as AI enabled surveillance grows at an alarming pace.[4]Ethical issues have always been accompanied by the development of science and technology. AI technology is based on big data. The application of big models inherently exists a large amount of data, and at the same time these data counteract the development of technology. Hence, the risk of privacy leakage and algorithmic bias may lead to the violation of students' privacy, educational injustice, and even cause the serious consequences of impacting the cornerstone of educational ethics. AI systems store a large amount of students' information, ranging from daily learning preferences to personal identity information, which, if leaked, can lead to a serious crisis. As algorithms do not have complete objectivity, it may produce algorithmic bias due to data bias, lack of consideration by the designer, and other subjective factors. For example, the data captured by the AI for admissions and employment may be biased due to gender, geography, and other factors, which may misjudge the potential of the students, and ultimately fail to enroll them in a fair manner. Currently, how to effectively avoid the ethical challenges posed by the technology has become an urgent issue to be pondered.

## 4. The educational philosophy roadmap for AI-Enabled higher education

### 4.1 Nurturing people: building a new paradigm for teacher-student interaction

The core of the educational philosophy is "people", laying focus on "human growth", while the development of education is not only unidirectional, it is the synthesis of different dimensions in order to build an ecosystem that meets the educational objectives. AI needs to be integrated into higher education with teachers and students as the main body, accompanied by multiple efforts and long-term efforts. Understanding the impacts of diverse cultures on human behavior is of vital importance due to the growing emphasis on the social dimensions of human interactions in the context of virtual reality. human interactions in the context of virtual agents.[5]To build a new paradigm of teacher-student interaction, teachers should figure out the cognitive features, and help the career plan as well as give mental health care to the students, designing the intelligent curriculum that suits the personalized development of the students. Besides, teachers are expected to build an intelligent learning environment, encouraging students to be bold and try out mistakes when using AI, and flexibly adjusting the teaching program, finally tapping the potential of students in the light of the situation. Moreover, teachers need to expand the depth of education and teaching, add more practical activities and ask for more classroom discussions, thus nourishing students' innovative and creative thinking, and ensuring that technology empowers and strengthens the main position of students.

### 4.2 Ethics as a framework: building an algorithmic safety line for data

AI will certainly bring changes to higher education, so the issue of science and technology ethics should be paid extra attention especially for the development and application of technology. Firstly, data management should be strengthened, intelligent data management regulations should be improved, and the boundaries of data use should be clarified. The storage of faculty and student data should be encrypted with regular audits to ensure the data security and the technological bottom line. Secondly, for objectivity and transparency of the algorithm, the construction of algorithmic talents in higher education institutions should be enhanced, and diversified management should be carried out

for the team, which needs to cover education experts, ethicists, digital experts, etc., so that the algorithms can be provided with fair and stable external conditions, in this case the potential discriminatory factors can be eliminated. Finally, it is also necessary to make regular public announcements about the ethical compliance of AI technology, and constantly improve the awareness of technology developers and users of data privacy and algorithmic fairness, so as to jointly create an environment of justice and honesty in education.

### 4.3 Multiple integration: synergistic education in technology and humanities

With the application of AI technology in higher education, technology is often perceived as an important means of enhancing productivity, and, and it has become possible to endow technology with humanistic emotions. University classroom teaching is constantly evolving in modern times, and it is not only integrating AI technology innovatively, but also fully demonstrating humanistic spirit in this process. The above three work together and continue to thrive. For example: after using AI models to analyze principles, science and engineering disciplines can integrate philosophical thinking to help understand principles; and students of liberal arts can analyze and sort out classical literature with the help of AI, fully showing humanistic qualities. At the same time, interdisciplinary project teams can also receive students from liberal arts and science disciplines, relying on the intelligent collaborative platform to overcome complex problems, thus cultivating composite excellent talents who possess both professional competence and humanistic feelings through the collision of diverse knowledge and the application of technology.

## 5. Conclusion

The employment of AI in higher education has become a major trend in the development of global education, and it is particularly crucial to address the role of technological change in education from the perspective of educational philosophy. Facing up to the “double-edged sword” of science and technology, we need to aim at realizing the goal of upholding the original intention of educating people in higher education in the wave of intelligence, orienting to cultivating innovative talents that meet the needs of the digital era. Properly using AI as a tool, we are supposed to uphold the correct values, strengthen the cognition of educational philosophy, apply to the socialist methodology, and resolve the problems of practice. By delving into the diverse paths of humanism, ethics, and integration, we shall activate the positive energy of technology and achieve an organic combination of humanistic education, technological education, and intelligent education.

## References:

[1] “A Call for Proactive Policies for Informatics and Artificial Intelligence Technologies.” Social Science Electronic Publishing.

[2]Holmes, Wayne . “Artificial Intelligence in Education.” (2020).

[3] Li, Haiying , J. Gobert , and R. Dickler . “Evaluating the Transfer of Scaffolded Inquiry: what Sticks and Does It Last?”. Springer, Cham (2019).

[4]Bartneck, Christoph , et al. “An Introduction to Ethics in Robotics and AI.” (2021).

[5]Mascarenhas, Samuel , et al. “Modelling culture in intelligent virtual agents.” Autonomous Agents and Multi-Agent Systems 30.5 (2016): 931-962.