

Technological Disenchantment and Value Anchoring: Ethical Scrutiny and Teacher Role Reshaping in AI-Embedded University Physical Education

Zhengshen Huang¹, Jiajun Zhou², Dongjin He^{3,*}

¹ School of Law, Guangdong University of Finance, Guangzhou, China

² General Education Department, Southern Medical University, Guangzhou, China

³ Department of Physical Education, Guangdong University of Finance, Guangzhou, China

Abstract: As Artificial Intelligence (AI) technology embeds itself into the field of university physical education (PE) with an irreversible trend, PE is undergoing a profound transformation from "corporeal presence" to "data twinning." While this transformation significantly improves teaching precision and efficiency, it also triggers a crisis of technological rationality overstepping humanistic values. Based on the dual perspectives of philosophy of technology and educational ethics, this paper conducts a deep "disenchantment" scrutiny of the process of AI embedding into university PE. The research points out that the excessive application of AI technology in PE faces ethical dilemmas such as bodily alienation, privacy surrender, algorithmic bias, and the dissolution of subjectivity, exposing PE to the risk of "dehumanization." In the face of the assertion of technological rationality, the article proposes that PE must return to its value origin of "becoming human," reaffirming the unique educational functions of sports in moral discipline, will tempering, and emotional interaction. On this basis, this paper reconstructs the role map of university PE teachers in the intelligent era: teachers should transform from simple "skill transmitters" to "interpreters of data wisdom," "gatekeepers of technological ethics," and "builders of a human-machine symbiotic ecosystem," finding a new educational balance in the tension between technology and value, and realizing the dialectical unity of technological empowerment and value anchoring.

Keywords: Artificial Intelligence, University Physical Education, Technological Ethics, Bodily Alienation, Teacher Role, Value Anchoring.

1. Introduction

Under the wave of the Fourth Industrial Revolution, Artificial Intelligence (AI) is no longer just a technical tool but a "Gestell" (Enframing) that redefines human existence and cognitive landscapes. The issuance of policy documents such as the "Action Plan for Education Informatization 2.0" and "China's Education Modernization 2035" marks that China's digital transformation of education has entered a deep water zone. As a unique discipline in the higher education system that combines physical discipline and spiritual shaping, university physical education is also being swept into this digital torrent. The implementation of a series of intelligent scenarios—smart wearable devices monitoring heart rates, computer vision capturing movement trajectories, big data algorithms generating exercise prescriptions—seems to herald the arrival of a precise, efficient, and personalized era of "Smart Sports."

However, behind this prosperous scene of "technological chanting," we must maintain a sober rational scrutiny. Heidegger once warned: "The essence of technology is by no means anything technological." When we digitize students' bodies, algorithmize teaching processes, and quantify evaluation indicators, are we unknowingly dissolving the most precious humanistic attributes of physical education? When algorithms replace teachers' experiential judgments and screen interactions replace eye contact between teachers and students, will PE degenerate into a cold "data production line"?

"Technological Disenchantment" does not mean denying the value of technology, but rather stripping away the

mythological colors attached to technology, restoring its essence as a tool, and examining the risks of alienation it may bring. "Value Anchoring" means re-finding the fundamental direction of "cultivating virtue and people" in physical education within the jungle of technological rationality. This paper aims to base itself on the realistic landscape of AI embedding into university PE, use the methodologies of ethics and philosophy to analyze the ethical dilemmas involved, and explore the reshaping path of university PE teacher roles on this basis, with a view to providing calm thinking and humanistic care for PE reform in the intelligent era.

2. Digital Panopticism: A Phenomenological Description of AI Embedding in University Sports

To conduct an ethical scrutiny of AI, we must first clarify its state of existence in university PE teaching. Currently, AI is reconstructing the spatiotemporal structure and power relations of PE teaching in the form of a "Panopticon."

2.1. Datafication of the Body: From "Flesh and Blood" to "Quantified Self"

In traditional PE teaching, the student's body is perceptual, fuzzy, and holistic. Teachers judge exercise load by observing students' complexion, sweat, and movement posture with the naked eye. However, with the popularity of wearable devices (smart bands, smart insoles, EMG suits), the student's body is "dismembered" by various sensors into a series of precise physiological parameters: heart rate 160 bpm, cadence 180

steps/min, blood oxygen saturation 98%, calorie consumption 300 kcal.

This process of "body datafication" is actually a transformation at the ontological level. In the vision of AI, the "physical body" with flesh, blood, and emotional fluctuations gradually recedes, replaced by a "Data Double" composed of bit streams. The object of teaching is no longer John or Doe, but sets of data indicators to be optimized. Students also begin to get used to recognizing their physical state through data on the screen rather than listening to the real feelings inside their bodies. This trend of "Quantified Self," while improving the scientific nature of monitoring, also cuts off the primitive connection between humans and their own bodies [1].

2.2. Transparency of Space: The Ubiquitous "Digital Gaze"

The traditional PE classroom is a relatively closed spatiotemporal field with certain privacy. But in the smart sports scenario, this privacy is completely broken. High-definition cameras deployed around the venue, combined with Computer Vision technology, constitute the "Panopticon Prison" described by Foucault.

Every movement, every act of slacking off, and even minute facial expression changes of students are captured, recorded, and uploaded to the cloud by the system in real-time. This "Digital Gaze" comes not only from teachers but also from invisible algorithms. Under such high-intensity surveillance, students are forced to undergo deep self-discipline because they know "Big Brother is watching you." The sports stadium has changed from a place to release nature and enjoy the fun of sports into a transparent glass room full of data assessment pressure.

2.3. Mediatization of Relationships: The Squeeze of Human-Machine Interaction on Interpersonal Interaction

Pedagogy holds that the teaching process is essentially a heart-to-heart communication between teachers and students. However, after the intervention of AI, a powerful "third party"—the intelligent terminal—is inserted into the teacher-student relationship. Teachers are busy viewing data reports on iPads, and students are busy paying attention to the compliance progress on their wristbands.

Direct dialogue between teachers and students is replaced by indirect "Human-Machine-Human" interaction. The warm classroom that should have been full of encouraging looks, physical contact (such as hand-by-hand teaching when correcting movements), and verbal motivation gradually evolves into cold interaction between humans and machines. As a medium, technology improves the efficiency of information transmission but dilutes the concentration of emotional transmission, leading to the "desertification of interpersonal relationships" in PE teaching.

3. Shadows of Technology: Scrutiny of Ethical Dilemmas in AI-Embedded PE Teaching

Technological prescriptions are often accompanied by side effects. When we indiscriminately implant the AI logic of pursuing efficiency and precision into physical education that emphasizes humanities and emotions, a series of profound ethical crises emerge.

3.1. Bodily Alienation: The Domination of Instrumental Rationality over Life Experience

The essence of sports is the unfolding of various possibilities of the body and the free flourishing of vitality. However, under the logic of strong AI, the body is alienated into a "biological machine" that needs to be precisely regulated.

To achieve the "optimal exercise prescription" set by the algorithm, students are forced to perform mechanical movements according to established frequency, intensity, and trajectory. Exercise is no longer for the joy of dopamine secretion but to complete data KPIs. This data-only teaching orientation alienates the means of "strengthening the body" into an end, ignoring students' subjective experience and psychological pleasure during exercise. Marx's discussion on alienation appears particularly profound at this moment: the laborer (student) does not affirm himself in his labor (exercise) but denies himself, does not feel happy but feels unhappy [2]. When PE class becomes a slave to data, the freedom and transcendence in the sports spirit are out of the question.

3.2. Privacy Surrender and Data Exploitation: Calculated Dignity

Precision teaching presupposes massive data collection. To obtain personalized guidance, students have to surrender a large amount of personal privacy, including height and weight, past medical history, movement trajectories, and even genetic information.

The ethical dilemmas here lie in: First, the falsity of informed consent. Under the university management system, students are often forced to agree to data collection and lack the power to refuse. Second, the blurring of data boundaries. Will collected physiological data be used for commercial purposes? Will it become the basis for awards evaluation or even employment discrimination (e.g., companies refusing to hire graduates with poor physical data)? Third, the immortality of data. How is sensitive data remaining in the cloud handled after students graduate? The anxiety of "being calculated" accompanies students at all times, and human dignity appears precarious in front of cold data.

3.3. Algorithmic Bias and Implicit Discrimination: The Illusion of Technological Neutrality

People often blindly believe in the objective neutrality of technology, thinking that algorithms are unbiased. However, philosophy of technology tells us that technology is the solidification of social values. The training data and model design of AI algorithms inevitably harbor the developers' subjective biases or existing structural injustices in society.

In PE teaching, algorithmic bias may manifest as: movement assessment models trained based on male athlete data may misjudge the movement characteristics of female students; physical fitness evaluation algorithms designed based on competitive sports standards may produce systematic low-score evaluations for obese students or students with poor limb coordination, thereby striking their self-esteem. This implicit discrimination cloaked in "science" is more concealed and harmful than open discrimination, potentially permanently excluding some students from the door of sports.

3.4. Dissolution of Subjectivity: Who is Teaching? Who is Learning?

The core of education is to cultivate subjects with independent thinking abilities and autonomous will. However, in highly intelligent teaching systems, the subjectivity of both teachers and students faces the risk of being dissolved by algorithms.

For teachers, when AI can automatically generate lesson plans, automatically correct errors, and automatically score, teachers gradually degenerate into "operators" or "guards" of the system. Their teaching autonomy is deprived by algorithms, becoming appendages of technology. For students, when all exercise decisions are made by AI (how many meters to run today, what pace, what heart rate control), students lose the ability to self-perceive their bodies and self-regulate loads. This "nanny-style" intelligent teaching may cultivate a group of "giant infants" who cannot exercise independently without smart devices, which runs counter to the original intention of PE to cultivate lifelong sports abilities.

4. Value Anchoring: Reaffirming the Humanistic Core of Physical Education

Faced with technological disenchantment and ethical interrogation, we cannot refuse AI for fear of choking, nor can we blindly worship technology. We must return to the origin of physical education and reaffirm those humanistic values that cannot be calculated by algorithms or quantified by data as the ethical anchor for technological application.

4.1. Moral Discipline: Sports as a Training Ground for Character Cultivation

Sports for education is by no means just about strengthening muscles and bones, but lies in the "civilized spirit" behind the barbaric physique. Rule awareness, fair competition, teamwork, and respect for opponents—these moral qualities are internalized in sweat and confrontation.

AI can judge whether a ball is out of bounds (Hawk-Eye technology) but cannot teach students how to control their emotions when the referee misjudges; AI can calculate the optimal passing line but cannot teach students the selfless spirit of sacrificing personal data for team victory. Education in these moral domains involves value judgments and emotional resonance, which are forbidden zones for algorithms but the soul of physical education. In the intelligent era, we should emphasize the moral disciplinary function of sports to prevent technological rationality from squeezing the space of moral education [3].

4.2. Will Tempering: Sports as a Touchstone for Adversity Education

Sports is essentially a process of overcoming resistance and challenging limits. Dyspnea when the "dead point" appears, despair when falling behind in scores, and rehabilitation training after injury are excellent opportunities to temper willpower.

However, AI's "precision service" tends to provide optimal solutions within the "comfort zone" to avoid user frustration. If PE teaching overly relies on AI's comfortable guidance, students will lose the experience of gritting their teeth and persisting in adversity. Education needs appropriate "pain." We must adhere to the value of sports as frustration education,

allowing students to acquire tenacious willpower in real fatigue and failure, which is a life experience that no algorithm can simulate.

4.3. Embodied Interaction: Sports as a Resonance Chamber for Life Emotions

Phenomenology of the body believes that the body is not only the object of cognition but also the origin of cognition. "Embodiment" in PE teaching is reflected in the emotional communication between teachers and students, and among students through body language.

An approving high-five, a helping hand extended when he is exhausted, a warm hug after failure—these interactions based on physical contact convey the simplest human emotions and care. This temperature of "corporeal presence" cannot be replaced by cold screens. Value anchoring requires that when introducing AI, we must deliberately preserve and create spaces for face-to-face communication between people, making PE class a field for emotional flow rather than a lonely data production workshop.

5. Reshaping Teacher Roles: From "Technological Adaptation" to "Human-Machine Symbiosis"

After clarifying ethical risks and value cores, university PE teachers, as the subjects of technological application, must complete a profound role transformation. This transformation is not simply learning new technologies, but a self-revolution involving professional beliefs, knowledge structures, and action logic.

5.1. Moving from "Skill Transmitter" to "Interpreter of Data Wisdom"

In the traditional era, the authority of PE teachers came from possessing superior athletic skills compared to students. But in the AI era, standardized movement demonstrations can be completed by holographic projection, and tactical explanations can be generated by large models. The role dividend of teachers as "knowledge porters" and "skill exhibitors" has been exhausted.

The new role of teachers should be "interpreters of data wisdom." Faced with cold data reports generated by AI, teachers need to use their profound professional theories and humanistic literacy to interpret the data by "discarding the dross and selecting the essential, eliminating the false and retaining the true." For example, when AI shows a decline in a student's exercise enthusiasm, the teacher cannot just look at the data but must combine psychological knowledge and understanding of the student to analyze the reasons behind the data—is it a breakup? Academic pressure? Or physical discomfort? Teachers need to endow data with context and meaning, transforming boring numbers into warm educational suggestions. Teachers no longer teach students "how to do movements" but teach students "how to understand their own body data," cultivating students' Data Literacy.

5.2. Moving from "Classroom Manager" to "Gatekeeper of Technological Ethics"

Faced with pervasive technological surveillance and potential algorithmic hegemony, PE teachers must step forward to become defenders of student rights and gatekeepers of technological ethics.

First, teachers must possess critical thinking and not blindly follow algorithms. When AI evaluation conflicts with the teacher's intuitive judgment, the teacher must dare to correct or even negate the algorithm's conclusion based on educational laws, adhering to the principle that "man is the end." Second, teachers must be protectors of data privacy. In the teaching process, strictly control the scope of data collection, supervise the data usage process, and educate students to establish self-protection awareness. Finally, teachers should actively conduct technological ethics education in the classroom, guiding students to correctly view the relationship between humans and technology, and preventing students from falling into the misunderstanding of "data-only theory." In an era of technological sprinting, teachers must become the ones who "hold the reins" [4].

5.3. Moving from "Authoritative Guide" to "Shepherd of Empathetic Companionship"

With the flattening of knowledge acquisition channels, teachers are no longer the sole possessors of truth. In the precision teaching system constructed by AI, teachers should assume the role of "shepherds"—that is, emotional companions and spiritual guides.

While AI is responsible for solving "efficiency" problems (such as skill acquisition, physical fitness improvement), teachers should focus on solving "meaning" problems. Teachers need to walk more among students, establishing deep emotional links through heart-to-heart talks, games, and team activities. Provide psychological counseling when students encounter sports bottlenecks, and spiritual encouragement when students achieve breakthroughs. This companionship based on Empathy is advanced human intelligence that AI is difficult to imitate. Teachers should infect students with their personality charm, ignite students with their sports spirit, and be guardians of students' soul development.

5.4. Moving from "Passive User" to "Builder of Human-Machine Symbiotic Ecosystem"

Teachers should not be objects passively accepting technological transformation, but designers actively participating in technological evolution and building a human-machine symbiotic ecosystem.

PE teachers should actively intervene in the R&D and iteration process of AI teaching systems because only frontline teachers understand educational laws and student needs best. Teachers need to make the Tacit Knowledge accumulated in teaching practice explicit and feed it back to algorithm engineers to help optimize models and reduce algorithmic bias. At the same time, teachers should explore the best entry point for human-machine collaboration, designing new teaching models that can leverage AI's efficiency advantages while retaining humanistic warmth. For example, designing "AI + Human" dual-teacher classrooms,

where AI acts as a teaching assistant responsible for error correction, and the human acts as a mentor responsible for education. Teachers must become masters of technology, not appendages of technology, promoting the establishment of a harmonious and sustainable smart sports ecosystem.

6. Conclusion

Heidegger quoted Hölderlin in "The Question Concerning Technology": "But where the danger is, also grows the saving power." The embedding of AI into university physical education brings huge risks of technological alienation but also forces physical education to undergo profound self-reflection and value reconstruction.

This is a game between "technology" and "humans," and a dialectic between "fast" and "slow," "efficiency" and "meaning." We must clearly recognize that no matter how AI technology iterates, the essence of education as "one soul awakening another" will not change, and the original intention of sports as "strengthening the body and casting the soul" cannot be altered.

Future university physical education teaching should be a rational return after "technological disenchantment" and a humanistic sublimation after "value anchoring." In this process, the reshaped PE teachers will become the bridge connecting the algorithmic world and the human spiritual world. They hold the compass of data in their hands but harbor the starry sky of humanities in their hearts; they use AI to improve physical functions but use sports to nourish the soul of life. Only in this way can Artificial Intelligence truly become the Promethean fire lighting up the reform of university physical education, rather than a Pandora's box imprisoning the bodies and minds of teachers and students.

Acknowledgment

Research Outcome of the 2025 Higher-Education Study Project under the 14th Five-Year Plan of the Guangdong Higher-Education Association (Project No. 25GQN010): "Collaborative Mechanisms and Implementation Pathways for AI-Enabled Personalized College Physical-Education Teaching"

References

- [1] Zhang, W., & Liu, B. (2023). Scrutiny and Dissolution of Ethical Risks in Educational Artificial Intelligence. *e-Education Research*, 44(02), 18-25.
- [2] Sun, G., & Yin, Z. (2021). Crisis, Reshaping and Realization Path of Physical Education Teacher's Role in the Era of Artificial Intelligence. *Sports & Science*, 42(03), 105-112.
- [3] Neil, S., & Selwyn, N. (2022). Data-driven physical education: A critical review of the claims made for digital technologies. *Quest*, 74(3), 289-306.
- [4] Yang, Z. (2022). Artificial Intelligence Empowering School Sports Reform: Value Implication, Realistic Dilemma and Practical Path. *Journal of Physical Education*, 36(02), 10-18.