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The Internal Mechanisms, Risks, Challenges, and Strategies of AI-Driven Reform in Ideological and Political Education within University Sports Curriculum

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ABSTRACT

The AI-driven reform of ideological and political education in university sports curriculum requires clarifying the logical framework for integrating intelligent technologies into physical training and mental cultivation. It is essential to acknowledge the risks and challenges brought by technological integration, including the weakening of sports spirit and data bias, athletic privacy and security risks, human-computer interaction limitations, subject role alienation, and the trap of motor ability degradation. This paper advocates evaluating intelligent technologies based on the essential laws of physical education, guiding technological applications with the "Healthy China" value orientation, innovating empowerment paths through educational wisdom that returns to the "integration of physical education and education," and enhancing the digital literacy of teachers and students with a strong "education through sports" subject consciousness. These approaches aim to achieve the educational goal of shaping both physical strength and spiritual integrity in university sports curriculum

1. Introduction

With the rapid iteration of artificial intelligence (AI) technologies and their deep penetration into the field of higher education (Deng et al., 2025), university physical education (PE) is moving toward new paradigms of “smart sports” and “digital sports,” giving rise to new teaching forms such as “intelligent PE classrooms,” “virtual sports training,” and “physical fitness big-data platforms” (Huang et al., 2025b). However, in the current practice of integrating AI and ideological-political education within university PE curricula, there remain several weaknesses

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that constrain the full realization of the "educating people through sports" goal. These include a blurred understanding of the logical framework, implementation paths, and educational evaluation systems for technology-driven PE teaching reform, as well as insufficient assessment of potential issues such as the dilemmas of digitally transmitting the spirit of sports and the ethical challenges of human–machine interaction (Hu, Zhang, Huang, et al., 2025).

Starting from the fundamental requirements of PE curriculum-based ideological and political education—"fostering virtue through education and putting health first"—and the contemporary principle of "integrated sports and education," PE teaching reform in intelligent environments must coordinate technological empowerment and value guidance. In the process of "balancing the tension between AI empowerment and the cultivation of the spirit of sports," it should explore effective pathways for the deep integration of AI and ideological-political functions in PE courses. This means not only harnessing technology to drive the improvement of motor skills and the precision of physical training, but also firmly upholding the essential attribute of PE as "cultivating the body and forging the soul," thereby achieving the coordinated development of "physical robustness" and "spiritual shaping."

2. The Internal Mechanism of AI-Enabled Ideological-Political Reform in University PE Teaching

From the perspective of the essential connection between technology and sports education, AI-driven ideological-political reform in university PE is a practical process that, on the basis of upholding the essential attribute of PE as "cultivating the body and forging the soul" and carefully defining the applicable boundaries of intelligent technologies, reconstructs the integration logic between technological tools and PE teaching, so as to achieve synergistic enhancement of both "improvement of motor abilities" and "cultivation of the spirit of sports." Analyzing its internal mechanism from two major stages teaching design and implementation, and teaching evaluation and improvement is not only an inevitable requirement for "technology empowerment" in PE in the era of intelligence, but also the logical starting point for building a new "smart sports" education paradigm.

2.1 Innovative Leadership in Teaching Design and Implementation

AI technologies can break through the temporal and spatial constraints of traditional PE teaching and the barriers of individual differences, thereby constructing a triadic teaching model of "technology support–emotional experience–value infiltration" (Huang et al., 2025a). For example, with devices such as Myo motion sensors and 3D motion reconstruction systems, AI-based motion capture and pose analysis technologies can be used to diagnose students' movement trajectories in real time; while correcting technical movements, the teaching process can integrate the "craftsman spirit" of striving for perfection. Natural language processing technologies can be used to develop "intelligent sports story generation systems" that transform inspirational cases from campus sporting events (such as students completing competitions while injured or teams achieving comeback victories) and the growth experiences of sports celebrities (such as Su Bingtian's scientific training log) into immersive teaching scripts. Through intelligent voice interaction, the system can realize dual guidance of "technical explanation + spiritual interpretation."

In addition, personalized training programs based on sports big data (for example,

dynamically adjusting endurance training intensity according to students' physical fitness test data) can embed value guidance on "scientific exercise and healthy living" into "precise physical development," turning technical instruction into an implicit carrier for cultivating the spirit of sports.

By integrating VR/AR technologies, digital twin systems, and Internet of Things (IoT) devices, AI can construct a three-dimensional teaching space that seamlessly connects "offline physical classrooms–online virtual training–extracurricular intelligent exercise" [7]. In the physical classroom, intelligent wearables (such as heart-rate bands and motion-track recorders) can be used to collect real-time exercise data, simultaneously generating individual "movement capability profiles." Classic sports event scenes (such as the 2008 Beijing Olympics gymnastics finals) can be reconstructed through holographic projection, enabling students to experience the spirit of "pursuing excellence" while imitating techniques.

Online, virtual sports communities (such as AI-based cycling platforms and metaverse sports games) can create scenarios of "cross-time-and-space competitions." Students can interact with historical sports icons (such as a "virtual Liu Xiang") through cross-temporal dialogues and thereby understand the value connotation of "breaking limits." Outside of class, intelligent sports apps (such as a "Campus Health Challenge" mini-program) can build ubiquitous exercise scenarios by combining "daily exercise check-ins" with "red sports routes" (e.g., virtually retracing the Long March). This turns fragmented exercise time into a practical arena for cultivating "tenacious character," forming an immersive educational environment in which "exercise is possible everywhere, and education is received at all times" (Zhang et al., 2025).

2.2 Theoretical Support in Teaching Evaluation and Improvement

AI can record students' exercise behavior data across the entire cycle (such as progress in mastering classroom skills, frequency of extracurricular exercise, and performance in competitions), and, through affective computing technologies (facial expression recognition, voice-tone analysis), capture emotional fluctuations during exercise (such as frustration after team losses or excitement after personal breakthroughs) (Hu, 2025d).

In basketball teaching, intelligent systems can not only record students' shooting accuracy and defensive positioning data, but also analyze their frequency of verbal encouragement and degree of bodily coordination in team play to generate a "sports spirit practice" micro-report. In long-distance running training, by combining heart rate variability analysis with students' real-time feedback, the system can identify psychological tendencies such as "perseverance" or "giving up," helping teachers carry out targeted guidance on "frustration tolerance." This dual monitoring of "technical indicators + emotional indicators" shifts PE teaching evaluation from a single focus on "physical fitness standards" to a full-cycle diagnosis of "body–mind–values" development (Wan et al., 2025).

Relying on sports big-data platforms, it becomes possible to integrate teachers' subjective evaluations, intelligent systems' objective assessments, and students' self- and peer evaluations to construct a three-dimensional evaluation system of "physical fitness development–skill mastery–moral cultivation" (Hu et al., 2025). For example, the system can automatically generate an "exercise capacity growth curve" (tracking improvements in speed, strength, flexibility), a "teamwork contribution model" (such as frequency of tactical cooperation and supportive behaviors toward teammates in competitions), and a "sports spirit cognition map" (showing

changes in recognition of concepts such as fair play and never giving up).

Such a system pays attention not only to explicit indicators like standing long jump scores and 1000m run times but also to implicit qualities such as students' sense of responsibility in team events (e.g., voluntarily taking on weaker positions) and their attitude toward failure (e.g., whether they actively summarize lessons learned). By mining correlations among data (for instance, the positive relationship between physical fitness improvement and sense of teamwork), teachers can precisely identify students' developmental needs and formulate personalized improvement plans that combine "skill enhancement + value guidance." This achieves a transformation from "data collection" to "educational effectiveness," ensuring that the ideological-political goals of PE courses are quantifiable, traceable, and improvable.

3. Risks and Challenges in AI-Driven Ideological-Political Reform of University PE Teaching

Although the application of AI in PE teaching continues to gain momentum, its essential nature as a technical tool means it cannot completely replace the embodied educational process in PE—one that involves "physical practice, emotional experience, and value formation." University PE courses are characterized by both the physical practice of "developing the body" and the value guidance of "forging the soul," and their target audience is young college students whose physical and mental development is not yet mature and whose values regarding sport are highly susceptible to external influences. These characteristics make it inevitable that integrating AI into PE teaching will encounter internal conflicts between technological rationality and the humanities of sports, spawning a series of risks and challenges.

3.1 Risks of Weakening the Spirit of Sports and the Impact of Data Bias

The algorithmic logic of AI naturally favors quantification and efficiency, which may cause PE teaching to overemphasize "meeting exercise data standards" while neglecting the implicit goal of "cultivating the spirit of sports." For example, if an intelligent training system relies too heavily on linear models of "exercise intensity–performance improvement," basketball teaching may be reduced to a mechanical training of technical indicators such as shooting accuracy and dribbling speed, thereby weakening the immersive transmission of core values like "teamwork" and "fair play."

Furthermore, sports apps developed under commercial logic may, in order to attract users, give preference to highly entertaining virtual sports (such as VR e-sports), crowding out space for the cultural inheritance of traditional sports (such as martial arts or dragon boat racing) and causing students' understanding of values like "perseverance" and "cultural confidence" in sports to remain superficial. In addition, if algorithm-generated training programs lack the embedded design of "sporting ethics," they may implicitly convey wrong orientations such as "gold-medal supremacy" or "gaming the system" (for example, recommending content about using banned performance-enhancing substances), thereby undermining the formation of students' sound views on winning and losing.

Through deep mining of users' exercise preference data, AI may form "exercise-interest filter bubbles," hindering students' exposure to and understanding of diverse sports values. Students who consistently receive basketball-related content, for instance, may be locked by

algorithms into a unidimensional focus on “individual breakthroughs” and “scoring techniques,” while overlooking the value of “perseverance until the end” in track and field or the “aesthetic pursuit” in gymnastics.

Meanwhile, if intelligent physical fitness test systems overemphasize “fitness pass rates,” students may resort to “utilitarian exercise” solely to optimize data—for example, training only for tested items while avoiding team sports that require collaboration—thus weakening their sense of “responsibility” and “cooperation and mutual success.” More worrying is that erroneous exercise concepts (such as “the more intense, the better” or “winning is above everything”) may be disguised as “scientific guidance” through algorithms and be covertly disseminated via sports communities or the push functions of wearables, misleading students regarding scientific exercise principles such as “health first” and “gradual progression,” and creating value deviations under the guise of technological empowerment.

3.2 Risks of Exercise Privacy and Limitations of Human–Machine Interaction

If smart sports devices that collect biometric data such as heart rate, exercise trajectories, and body posture lack rigorous data management norms, they may lead to leakage of personal health information (for example, students’ physical test data being accessed by third-party commercial platforms) (Hu & Huang, 2025a). Some universities link exercise data coercively with academic evaluation (such as counting extracurricular running mileage toward PE course grades), which may trigger student resistance to “data surveillance,” prompting them to deliberately conceal their true physical condition (e.g., fabricating exercise trajectories). This undermines the foundation for cultivating values such as “honesty” and “self-discipline” in PE.

Furthermore, the “precise analysis” of exercise data by intelligent systems may exacerbate the “instrumentalization” of teacher–student relationships: students may come to view teachers merely as “data interpreters” rather than “spiritual role models,” while teachers may rely excessively on system feedback and neglect face-to-face demonstrations and verbal encouragement. As a result, “technological mediation” replaces “emotional connection,” weakening the effectiveness of “master–apprentice bonds” and “exemplar influence” in PE.

Overreliance on AI coaches (such as virtual personal trainers or motion-correction robots) may cause a rift between “physical experience” and “emotional identification” [13]. For instance, students who use VR skiing training to complete technically difficult maneuvers through simulation may lack the bodily memory of falling and getting back up inherent in real skiing, making it difficult to cultivate “resilience in the face of setbacks.” Intelligent jump ropes that automatically count and deliver voice encouragement may replace teachers’ high-fives at critical breakthrough moments, leaving students’ emotional experience of “athletic achievement” at the level of technical feedback rather than interpersonal resonance.

At a deeper level, “virtual athletic scenarios” may erode the “sense of ritual” in sports; traditional sports rituals such as pre-game team chants and post-game handshakes may be reduced to data-interface operations under technological intervention. This could leave students’ understanding of values like “respect for opponents” and “team honor” without the support of bodily practice, resulting in emotional numbing within a “technological flow” state.

In current PE teaching, data from physical test systems, sports apps, and classroom intelligent devices are often siloed on different platforms, forming “data chimneys.” For example,

a student may have excellent strength-training data in a smart gym but display apparent shortcomings in teamwork during class volleyball games; if the data are not shared, such issues may go unnoticed by the teacher, causing evaluations to focus on "physical fitness" while ignoring "moral character." Similarly, extracurricular running-duration data recorded by apps may be disconnected from classroom performance data, making it difficult for teachers to thoroughly assess the development of qualities such as "persistence" and "self-discipline."

In addition, intelligent evaluation systems that rely solely on historical exercise data (such as predicting future performance based on past physical test scores) may overlook students' value choices in specific contexts (for instance, voluntarily giving up rankings to help an injured opponent during a competition), thereby trapping ideological-political evaluation in PE within a "data-ism" framework and depriving "education through sports" of its human warmth and developmental perspective.

3.3 Risks of Role Alienation and the Trap of Declining Motor Competence

Intelligent technologies may reshape teacher–student relationships in PE and lead to the risk of role alienation. On the part of teachers, overreliance on AI-generated training programs (such as directly adopting system-recommended basketball tactics videos) may weaken their role as "living athletic models." If teachers no longer personally demonstrate difficult movements or closely observe individual differences among students, "technical transmission" will replace "spiritual guidance."

On the part of students, habitual dependence on real-time feedback from intelligent devices (for instance, constantly checking heart-rate bands to adjust running speed) may erode their ability to self-perceive exercise intensity and foster a tendency toward "cognitive outsourcing." Consequently, when separated from technological assistance, students may experience "decision paralysis" in exercise (such as being unable to judge independently whether to persist with training). At a deeper level, "data presence" replaces "bodily presence" of teachers; students can no longer form value identifications by observing teachers' perseverance and composure in exercise, and the tradition of "teaching by example" in PE faces technological dissolution.

The "nanny-style" assistance of AI may weaken the development of students' bodily functions and athletic literacy. For example, the automatic force-correction function of smart badminton rackets may cause students to rely on mechanical feedback instead of forming muscle memory through repeated practice, thus creating a tension between "standardizing technique" and "fostering creativity in movement." In virtual sports scenarios, systems may automatically filter out risky movements (such as reducing the risk of falling in skiing), thereby allowing students to avoid experiencing the physical pain and failure inherent in real sports and making it difficult to cultivate psychological qualities such as "willingness to take risks" and "facing setbacks head-on."

Long-term learning in a technologically protected environment may instill in students a risk-averse mindset that runs counter to PE's fundamental goal of tempering willpower through bodily practice. In addition, AI's extreme pursuit of "exercise efficiency" (such as achieving maximum physical improvement in minimum time) may cause students to ignore the practical value of sports concepts like "gradual progress" and "building strength over time," trapping them in a "fast-food" understanding of exercise.

4. Strategies for Addressing AI-Driven Ideological-Political Reform in University PE Teaching

Marxist philosophy of praxis emphasizes that human subjectivity is generated and developed through bodily practice, and that technology is an objectified product of human essential powers (Yuan, Huang, et al., 2025). As an educational practice that "takes bodily exercise as its basic means," sports education must uphold the essential law of "integrated sports and education" (Hu, 2025) and dialectically handle the relationship between AI technologies and sports education. It should not only leverage the advantages of technology as a tool in areas such as exercise data collection and training-plan optimization, but also strengthen the human subjective role in transmitting the spirit of sports and cultivating emotional and moral values, thereby building a development pattern in which "technological empowerment" and "humanistic soul-forging" advance in synergy.

4.1 Guiding the Application of Intelligent Technologies with the Value Orientation of "Building a Strong Sports Nation"

Starting from the fundamental goals of PE curricula—"fostering virtue through education and putting health first"—core sports values such as "patriotism and dedication, fair competition, striving and enterprising, solidarity and cooperation" should be embedded into the underlying architecture of intelligent technology development (Hu, 2025a). For example, in designing AI-based sports training systems, a "Chinese Sports Spirit Database" can be integrated so that the technological output simultaneously delivers movement analysis and spiritual interpretation (such as integrating the cultural connotation of "harmony between man and nature" into Taijiquan teaching, or emphasizing the value norm of "teamwork" in basketball tactics training).

At the national level, "key technologies for intelligent sports education" should be coordinated and prioritized, focusing on overcoming technical bottlenecks such as secure encryption of exercise data and algorithmic recognition of sports spirit. In functions such as motion trajectory analysis and physical fitness assessment, AI systems should give priority to recommending teaching content rich in ideological-political elements (such as virtual training on "red sports routes" and intelligent courses on traditional sports) (Yang et al., 2025). A value-review mechanism for intelligent sports products should be established, where sports education experts, ideological-political scholars, and engineers jointly assess the "body-and-soul cultivation adaptability" of technical solutions, thereby preventing commercial logic from diluting the spirit of sports.

Based on the bodily practice and value-guidance characteristics of sports education, universities should formulate an "Ethical Code for Intelligent University PE Teaching," clarifying the "minimum-necessary principle" for exercise data collection (for example, prohibiting the collection of biometric features not essential for teaching) and humanistic-care clauses for the use of intelligent devices (such as specifying an appropriate ratio between "encouraging effort" and "health and safety reminders" in AI coaches' language).

A set of "Technical Standards for Intelligent Ideological-Political PE Courses" should be established to regulate the cultural appropriateness of virtual sports scenarios (for example, VR dragon boat racing should be accompanied by explanations of the spirit of "being in the same boat and helping each other") and to ensure a balanced diversity of value orientations in

algorithmic recommendations (avoiding the over-promotion of a single sport leading to narrowed interests) (Hu, 2025c). A tripartite "government–school–enterprise" responsibility-sharing mechanism should be constructed: governments issue regulations on exercise-data security management, schools formulate operational guidelines for teachers' use of intelligent teaching tools (such as prohibiting complete reliance on AI plans and requiring teachers to personally demonstrate difficult movements), and enterprises set up mechanisms for tracking the educational impact of technologies (Hu, Huang, & Zhang, 2025b). This forms a closed-loop governance model of "development–use–feedback," preventing technological misuse from deviating sports education from its essence.

Technology enterprises should be guided to adopt a development concept of "technology as the vehicle, education as the priority." In the design of wearables and sports apps, modules for "cultivating the spirit of sports" can be added (for instance, embedding inspirational quotes from sports figures into exercise check-in pages, or integrating "collective honor" achievement systems into team challenges).

An "Intelligent Sports Education Industry Alliance" can be established to regularly publish "White Papers on Technological Applications in Ideological-Political PE," promoting exemplary cases that achieve "dual excellence in technological empowerment and value guidance" (such as a university–enterprise collaboration to develop an "AI Red Sports Study System" that cultivates students' resilience through a virtual retracing of the Long March) (Hu, 2025b). Training mechanisms in sports values should also be set up for developers, enabling them to understand that "sports are not only physical training but also spiritual shaping," thus preventing tendencies toward "pure datafication" or "over-entertainment" in technology design at the source (Hu & Huang, 2025b).

4.2 Innovating Technology-Empowerment Pathways by Returning to the Educational Wisdom of "Integrated Sports and Education"

Grounded in the inheritance of Chinese sports culture and the cultivation of the spirit of sports in the new era, intelligent technologies can be used to activate the ideological-political "goldmine" within PE curricula. Digital twin technology can restore historical scenes such as "ancient archery rituals" and "modern red sports meets," allowing value connotations like "propriety, righteousness, integrity, and shame" and "hard struggle" to be interpreted through technique teaching. AI can generate a "Map of the Chinese Spirit of Sports" that connects Liu Xiang's technical evolution in hurdling with the story of national pride embodied in the "Asian Flying Man," and links tactical analysis of the Chinese women's volleyball team with their "never-say-die" spirit, thus unifying "technical analysis" and "value narrative."

"Virtual–real integrated" sports ideological-political practice courses can be designed: VR technology can be used online to conduct a "virtual Olympic torch relay," while offline campus torch runs allow students to personally experience the Olympic spirit of "faster, higher, stronger, and more united." (Hu, 2025) Intelligent wearables can track data for "21-day exercise habit formation," and generate parallel "self-discipline character growth reports," thereby turning technical monitoring into a visualized path for "moral cultivation."

Adhering to the principle that "intelligent technologies are a means, and human development is the end," a dual-drive model of "AI-based precision physical training + teacher-based spiritual guidance" should be established. Teachers can use sports big data to precisely identify students'

physical weaknesses (such as detecting fatigue states via heart rate variability analysis), while also guiding them through face-to-face tactical discussions and post-game reviews to internalize the competitive ethos of "being modest in victory and composed in defeat."

AI systems can provide personalized training plans (for example, agility training tailored to basketball point guards), while teachers organize "adversity challenge games" (such as simulating scenarios where the team is behind in score) to cultivate students' resilience and sense of responsibility. A closed loop of "technological feedback–bodily experience–value sublimation" can be created: when an intelligent system detects that a student has repeatedly surpassed previous limits, it can trigger a mechanism for teachers to offer "in-person encouragement," transforming "performance improvement" at the data level into a spiritual understanding of "self-transcendence," thus avoiding an educational disconnect resulting from "cold data."

Campus intelligent sports platforms, community sports facilities, and home fitness devices can be integrated to build an educational network that smoothly connects "on-campus classes–off-campus practice–family exercise." Universities can link intelligent fitness test systems with community "15-minute fitness circles" to encourage students to participate in volunteer services such as "senior fitness instruction" or "community parent–child sports games," cultivating a sense of "serving society" and "caring for others" through practice (Hu et al., 2025).

A "family sports community" mini-program can be developed with AI-customized family sports tasks (such as virtual "family fun games" or "red sports knowledge competitions"), merging "consistent exercise" with "family bonding" and "red culture transmission," thus making families micro-units for cultivating the spirit of sports. Smart-city sports big data can be used to mine local sports cultural resources (such as traditional ethnic sports or stories of local athletes), and generate localized intelligent PE teaching resource packs that strengthen students' cultural identity with the "local spirit of sports (Chen, Huang, & Hu, 2025)," ultimately forming a collaborative educational pattern in which "technology connects thousands of households, and the spirit of sports nurtures silently."

4.3 Enhancing Subjective Consciousness of "Educating People Through Sports" to Improve Teacher–Student Competencies

PE teachers' dual identity as both "transmitters of sports skills" and "practitioners of the spirit of sports" should be clearly recognized, and their active subject role in intelligent teaching should be strengthened. Through "intelligent PE teaching workshops" and "ideological-political PE teaching competitions," teachers' abilities to transform exercise data into ideological-political materials (such as extracting "cooperation and win–win" cases from fluctuations in team-sport data) and to provide humanistic interventions in technology use (for example, adding "frustration simulation" modules to AI training plans to cultivate stress resistance) should be improved (Chen, et al., 2025).

Teachers should be encouraged to preserve "technology-free" segments of "pure exercise time" in class (such as traditional sports games or free-form movement exploration) (Yue, Wang, et al., 2025). By demonstrating qualities such as tenacity and inclusiveness through their own participation in exercise, they can serve as "embodied role models" for students and prevent "technological mediation" from eroding the tradition of "teaching by example" in PE (Yue, Cao, et al., 2025). A "PE Teacher Intelligent Literacy Evaluation System" should be established to include "critical application of technology" and "emotional teaching competence" as assessment

indicators, guiding teachers to become educational subjects who "understand technology without depending on it, use technology while transcending it."

Special training on "AI and Ideological-Political Education in PE" should be offered to teachers, covering topics such as exercise-data privacy protection, ethical use of smart devices, and digital expression of the spirit of sports, so as to cultivate teaching abilities that combine "data rationality" with "humanistic concern." For example, through case-based instruction, teachers can learn how to use intelligent systems to identify issues of integrity behind students' "fabricated exercise data" and subsequently carry out "honesty in sports" themed education (Hu, 2025c).

For students, general education courses such as "Intelligent Exercise and Healthy Living" can be offered to teach them to view exercise data rationally (such as avoiding blind comparison of rankings) and to actively use technological tools for self-improvement (e.g., adopting AI recommendations to develop personalized training plans while retaining autonomy in adjustments), thus fostering an exercise outlook characterized by "technological autonomy" rather than "technological dependence." Activities such as "intelligent sports debates" and "anti-data-fraud warning exhibitions" can enhance students' ability to identify technological risks, so that while enjoying the convenience of technology, they continue to uphold the authentic connotation of the spirit of sports (Yuan, Yang, et al., 2025).

A teaching interaction mechanism that balances "technological monitoring" with "humanistic care" should be established. In class, teachers should refer to AI-based exercise analysis reports while also paying close attention to students' bodily cues (such as facial expressions of fatigue during perseverance or bodily celebrations after success), providing timely embodied feedback such as high-fives and tactical guidance. After class (Chen, 2025), "exercise growth sharing sessions" and "teacher–student paired training" can be organized to discuss real-life stories of setbacks and breakthroughs in sports, thereby reinforcing interpersonal emotional connections that "technology cannot replace."

In competitions, traditional sports rituals—such as pre-game team chants and post-game appreciation of opponents—should be preserved. Teachers can guide students to understand the deeper values of "respect" and "unity" through bodily contact and emotional communication, avoiding emotional alienation arising from "human–machine interaction" replacing "interpersonal interaction." A "teacher–student sports community" can be formed in which teachers participate alongside students in extracurricular exercise (such as forming teams for intelligent cycling challenges). In jointly overcoming physical challenges, teachers naturally transmit the spirit of sports—such as "perseverance" and "cooperation"—thereby realizing the development of "intersubjectivity" within technological contexts (Xiang et al., 2025).

5. Conclusion

AI provides a new lever of technological empowerment for ideological-political reform in university PE courses, but the essence of sports education remains "cultivating sound personalities through bodily exercise." Only by maintaining the original aspiration of "integrated sports and education," and ensuring that intelligent technologies serve the fundamental goal of "cultivating the body and forging the soul," can we retain the warmth of bodily practice in exercise data monitoring, preserve the authenticity of the spirit of sports in virtual scenario

creation, and strengthen the central status of teachers and students in technological innovation.

In doing so, we can build a new-era university PE ideological-political system characterized by “high-intensity physical training, in-depth spiritual cultivation, and warm emotional connections,” thus cultivating a new generation with both strong physiques and resilient spirits. The endpoint of technology is human development, and the charm of sports lies in the joint growth of body and spirit—this is the essential law of sports education that must not be deviated from in the intelligent era.

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