

Research Article

An OBE-Based Approach to Integrating Ideological and Political Education into Sports Anatomy Teaching

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Abstract

This study explores the integration of ideological and political education into Sports Anatomy teaching using an Outcome-Based Education (OBE) approach. The increasing professional demands in sports medicine necessitate a comprehensive educational framework that not only emphasizes anatomical knowledge but also nurtures the ethical and humanistic aspects of healthcare. Furthermore, the evolving landscape of higher education underscores the importance of fostering well-rounded professionals who are not only skilled in their technical abilities but also possess strong values and ethical standards. The research addresses current challenges in higher education, where traditional anatomy teaching methods often emphasize technical knowledge while neglecting value-based education and professional ethics. Through systematic analysis and practical implementation, the study identifies key issues including insufficient integration between professional knowledge and ideological education, lack of innovative teaching methods, incomplete educational systems, and the need to enhance teachers' capabilities in delivering integrated content. The paper presents a comprehensive reform framework that incorporates digital technologies, interactive learning platforms, and innovative assessment methods to create a student-centered learning environment. The reformed curriculum successfully combines anatomical knowledge with ethical considerations, professional values, and humanitarian perspectives through case-based learning, virtual anatomy systems, and practical laboratory sessions. The implementation emphasizes professional development, educational philosophy integration, and continuous outcome assessment. Results demonstrate improved student engagement and enhanced learning outcomes in both professional competencies and ethical awareness. The study establishes a model for effectively uniting professional expertise with ideological education while maintaining high academic standards. These findings contribute to the dialogue on educational reform, highlighting the critical role of integrating value-based education within professional training programs. This reformed approach provides valuable insights for future educational reforms in anatomy teaching and related fields, highlighting the importance of balancing technical knowledge with value-based education in preparing students for their professional roles in sports medicine and rehabilitation.

Keywords

Outcome-Based Education, College Students, Sports Anatomy, Ideological Education, Political Education

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Received: 18 November 2024; **Accepted:** 28 November 2024; **Published:** 16 December 2024



1. Introduction

In the new era, institutions of higher education shoulder the important mission of moral education and cultivation. As a fundamental course for sports-related majors, Sports Anatomy not only imparts professional knowledge but also focuses on developing students' comprehensive qualities and value systems. The integration of ideological and political education based on Outcome-Based Education (OBE) provides new perspectives and methodologies for achieving this goal [1]. The OBE model emphasizes outcome-oriented learning, developing curriculum systems and teaching standards based on professional training programs, and stresses the combination of theoretical knowledge with practical applications [2]. Compared to traditional teaching methods, Sports Anatomy courses under the OBE concept focus more on enhancing students' learning interest, promoting autonomy, and connecting professional knowledge with practical problems. Additionally, through the organic integration of ideological and political elements, the course incorporates national sentiment, scientific spirit, and professional ethics into the process of knowledge transfer and capacity building [3].

In practical implementation, teachers need to redesign teaching content and methods, naturally incorporating socialist core values, professional ethics, and humanistic care into course instruction. Through establishing a student-centered teaching model and strengthening practical teaching components, the course aims to cultivate students' professional skills and occupational qualities. This teaching reform not only helps improve students' professional knowledge but also assists them in forming correct values and professional attitudes [4]. The exploration and practice of ideological and political education in Sports Anatomy courses provide valuable experience for advancing curriculum reform in the new era of higher education and have significant implications for improving talent cultivation quality.

2. Current Issues in Ideological and Political Education Integration in Sports Anatomy Course

Based on the OBE concept, Sports Anatomy, as a fundamental course in sports-related majors, primarily aims to develop students' understanding of human musculoskeletal system structure and function, mastery of anatomical skills, and formation of scientific thinking methods. However, several issues exist in current teaching practices. [5]

2.1. Lack of Organic Integration Between Professional Knowledge and Ideological Education

While sports education teachers possess solid professional knowledge, they often lack sufficient understanding and grasp

of ideological and political education concepts. Many teachers struggle to naturally integrate professional knowledge with ideological elements. Particularly in basic science courses like Sports Anatomy, identifying and integrating ideological elements and establishing discipline-specific ideological resource databases remain urgent challenges. The traditional teaching approach tends to focus solely on anatomical structures and functions, overlooking the opportunities to incorporate broader educational values and professional ethics into the curriculum. This disconnection often results in a mechanical delivery of content that fails to engage students in meaningful discussions about the societal implications of their future professional roles. [6]

Moreover, there exists a significant gap between theoretical knowledge and practical application in terms of ideological education integration. Many instructors find it challenging to identify appropriate moments during anatomy lectures to incorporate discussions about professional ethics, humanitarian values, and social responsibility. [7] This challenge is further complicated by the lack of systematic training and resources for teachers to effectively blend ideological elements with technical content. The absence of well-developed teaching materials and case studies that demonstrate successful integration of professional knowledge with ideological education makes it difficult for educators to model effective teaching practices. As a result, many valuable opportunities for character development and value education are missed during the teaching of fundamental anatomical concepts.

2.2. Insufficient Innovation in Teaching Methods and Approaches

Traditional anatomy teaching models often overemphasize knowledge transfer while neglecting value guidance. Some teachers fail to effectively utilize modern educational technology and innovative teaching methods, resulting in a disconnect between professional teaching and ideological education. Particularly in laboratory courses, there is a lack of effective approaches to incorporate professional ethics, humanistic care, and other ideological elements into practical teaching. [8] The conventional lecture-based format, while efficient for content delivery, often creates a passive learning environment that limits students' engagement in critical thinking and ethical discussions. This traditional approach fails to leverage the potential of digital technologies and interactive learning platforms that could enhance both professional knowledge acquisition and value education. [10]

The challenge extends beyond mere technological integration to the fundamental pedagogy of Sports Anatomy education. Current teaching methods often struggle to create meaningful connections between anatomical structures and their implications for professional practice and ethical decision-making. Laboratory sessions, which should serve as

ideal opportunities for integrating hands-on experience with professional ethics discussions, frequently default to mechanical demonstration and practice. This limitation is particularly evident in the absence of case-based learning scenarios that could bridge the gap between technical knowledge and real-world ethical considerations. [10]

Furthermore, there is a significant deficiency in the development and implementation of assessment methods that effectively evaluate both professional competency and ideological understanding. [11] Traditional evaluation systems primarily focus on testing anatomical knowledge, overlooking the assessment of critical thinking, ethical reasoning, and professional values. The lack of comprehensive evaluation tools makes it difficult to measure the effectiveness of ideological education integration and impacts the ability to make data-driven improvements to teaching methods. Additionally, there is insufficient emphasis on peer learning and collaborative activities that could foster professional identity formation and ethical awareness through student interaction and dialogue.

2.3. Incomplete Ideological and Political Education System

Although universities are promoting ideological and political education integration, further research is needed on balancing professional knowledge transfer with value guidance in Sports Anatomy courses. Some courses have shown imbalances in their pursuit of ideological element integration, affecting teaching effectiveness. Establishing a scientific and reasonable evaluation system for ideological and political education integration and achieving organic unity between professional and ideological education remain significant challenges [12]. The current system often lacks a coherent framework for systematically incorporating value education into anatomy teaching, resulting in fragmented and sometimes superficial integration attempts. This is particularly evident in the absence of clear guidelines for identifying appropriate integration points within the curriculum and measuring the effectiveness of such integration. [13]

The challenge of establishing a comprehensive education system is further complicated by the diverse nature of student backgrounds and learning needs in Sports Anatomy courses. Current educational frameworks often struggle to accommodate this diversity while maintaining consistent ideological education standards. The absence of differentiated teaching strategies and adaptive learning approaches makes it difficult to ensure that all students receive appropriate exposure to both professional knowledge and value education. Additionally, there is insufficient attention to developing students' critical thinking abilities in ways that naturally combine anatomical understanding with ethical considerations. [14]

A significant systemic challenge lies in the development of comprehensive assessment mechanisms that can effectively evaluate both professional competency and ideological un-

derstanding. [15] Current evaluation systems often lack the sophistication to measure the subtle aspects of value integration and ethical development alongside technical knowledge acquisition. This limitation extends to the absence of reliable metrics for measuring long-term educational outcomes, particularly in terms of professional ethics and social responsibility. Furthermore, there is insufficient infrastructure for collecting and analyzing feedback from various stakeholders - students, teachers, and industry professionals to inform continuous system improvement. [16]

2.4. Need for Enhancement of Teachers' Ideological and Political Education Capabilities

Sports Anatomy teachers generally possess solid professional foundations but lack adequate training and preparation in ideological education. Some teachers lack experience and confidence in incorporating humanistic spirit, professional ethics, and other ideological elements into professional teaching. Additionally, faculty members' understanding of the importance of ideological and political education integration is insufficient, leading to inadequate exploration and utilization of ideological elements in teaching design and implementation. [17] This challenge is particularly evident in laboratory sessions and practical demonstrations, where teachers often struggle to seamlessly integrate discussions of professional ethics and humanitarian values while maintaining focus on technical content. The absence of systematic professional development programs specifically designed to enhance teachers' capabilities in combining anatomical instruction with value education has resulted in inconsistent teaching approaches and missed opportunities for meaningful integration.

Furthermore, there exists a significant gap in teachers' ability to effectively utilize modern educational technologies and innovative pedagogical approaches for ideological education integration. Many faculty members lack exposure to best practices and successful case studies that demonstrate effective integration of professional and ideological education. This deficiency is compounded by limited opportunities for peer learning and professional exchange among educators, resulting in isolated teaching practices rather than collaborative development of effective integration strategies. The challenge extends to teachers' ability to design and implement assessment methods that effectively evaluate both technical competency and students' growth in professional ethics and humanitarian understanding.

3. Construction and Practice of Ideological and Political Education in Sports Anatomy Course

Based on the OBE concept and student-centered approach, we have developed a comprehensive reform of the Sports

Anatomy course that aligns with national guidelines for ideological and political education in higher education curriculum. This reform emphasizes continuous improvement and outcome-based teaching methods while integrating professional knowledge with value education.

3.1. Optimization of Sports Anatomy Curriculum Design

The course content has been streamlined to focus on the systematic study of human musculoskeletal anatomy, with careful integration of ideological and political elements. The curriculum has been redesigned to incorporate not only anatomical knowledge but also the historical development of anatomical science, contemporary applications, and ethical considerations.

Key aspects of the reformed curriculum include:

1. Integration of Digital Resources and Learning Platforms

The course utilizes modern educational technology and online learning platforms to provide students with comprehensive learning materials, including virtual anatomy systems, video resources, and interactive quizzes. This digital transformation enhances student engagement while incorporating elements of professional ethics and scientific spirit.

2. Development of Case Studies and Teaching Resources

We have established a database of teaching cases that combine anatomical knowledge with ethical considerations and professional values. For example: When teaching musculoskeletal system anatomy, we incorporate cases of athletic injury prevention and rehabilitation, emphasizing the importance of professional responsibility and ethical practice. During laboratory sessions, we introduce historical anatomical drawings by masters like Leonardo da Vinci, fostering students' appreciation for scientific precision and artistic observation while developing their professional craftsmanship.

3. Integration of Professional Ethics and Values

Special attention is paid to ethical considerations in anatomical education, including:

- a. Respect for human dignity in anatomical studies
- b. Professional ethics in sports medicine and rehabilitation
- c. The importance of evidence-based practice and scientific thinking

Through these integrated approaches, we aim to cultivate students who not only master anatomical knowledge but also develop strong professional ethics and values. The course emphasizes the connection between theoretical knowledge and practical application while fostering critical thinking and professional responsibility.

3.2. Information Technology Integration and Evaluation System in Sports Anatomy

Following OBE principles, we have established a com-

prehensive student-centered evaluation system that incorporates both traditional and digital assessment methods, creating a multi-dimensional learning and assessment environment that effectively supports both professional knowledge acquisition and ideological education. The system's foundation rests on advanced learning analytics platforms that enable real-time student engagement tracking, personalized learning pathways development, and automated feedback mechanisms. To enhance the learning experience, we have integrated cutting-edge technologies including 3D anatomical visualization tools with embedded ethical case studies, virtual laboratory simulations, and mobile learning applications, supplemented by virtual reality (VR) and augmented reality (AR) technologies for immersive learning experiences.

The assessment framework combines traditional evaluation methods with innovative digital approaches, incorporating written assessments, digital portfolios, peer evaluations, and self-reflection tools. Case-based assessments and project-based evaluations focus on real-world applications while integrating ethical considerations, ensuring a holistic evaluation of both professional competencies and ideological understanding. Continuous performance monitoring through digital assessment tools and adaptive testing systems provides ongoing insights into student progress, while competency-based assessment modules ensure comprehensive evaluation of both technical skills and professional ethics.

The system's effectiveness is maintained through a robust feedback collection and quality improvement mechanism, utilizing regular online surveys, interactive discussion forums, and real-time feedback collection during digital learning sessions. Advanced analytics help identify learning patterns and challenges, enabling continuous curriculum refinement and assessment method improvement. To support faculty development, the system includes comprehensive teacher training programs, online resources, and technical support for digital teaching tools, ensuring effective implementation of both technological and pedagogical innovations.

Looking toward future development, the system continues to evolve with the integration of emerging technologies such as artificial intelligence applications in assessment, more sophisticated learning analytics tools, and advanced adaptive learning systems. Regular system audits, performance benchmarking against international standards, and continuous monitoring of teaching effectiveness ensure the maintenance of high educational standards. This comprehensive approach has significantly enhanced the effectiveness of both professional knowledge transfer and ideological education integration in Sports Anatomy education, creating an engaging learning environment while providing robust assessment and improvement tools.

3.3. Systematic Integration of Ideological and Political Education

The teaching team has developed a comprehensive and

innovative approach to seamlessly integrate professional knowledge with value education in Sports Anatomy courses. This systematic integration represents a significant advancement in addressing the traditional disconnect between technical content and ideological education. Through careful curriculum design and implementation, we have created a learning environment that naturally combines anatomical knowledge with broader societal perspectives and ethical considerations.

At the core of our content integration strategy lies the deliberate incorporation of contemporary healthcare policies and ethical frameworks into anatomical education. By connecting basic anatomical structures and functions to real-world healthcare challenges, students develop a deeper understanding of their future professional responsibilities. Current issues in sports medicine and rehabilitation are regularly woven into lectures and laboratory sessions, helping students recognize the practical applications of their anatomical knowledge while considering the ethical implications of medical decisions. The integration of research frontiers with foundational anatomical concepts not only keeps the content current but also stimulates critical thinking about the ethical dimensions of scientific advancement.

Our innovative teaching methods emphasize active learning strategies that promote deep engagement with both professional content and ethical considerations. Case-based learning scenarios are carefully designed to present complex situations where anatomical knowledge intersects with ethical decision-making. These cases often draw from real-world examples in sports medicine and rehabilitation, challenging students to apply their technical knowledge while considering broader societal impacts. The research-informed teaching approach ensures that students are exposed to the latest developments in the field while developing critical awareness of the ethical implications of scientific research.

To enhance the effectiveness of this integration, we have implemented a multi-faceted approach to student engagement. Interactive discussions and group projects encourage students to explore the connections between anatomical knowledge and professional ethics. Regular seminars featuring practicing professionals help students understand the real-world application of ethical principles in sports medicine and rehabilitation. These sessions often include discussions about patient rights, healthcare accessibility, and the social responsibilities of medical professionals.

The integration extends to practical laboratory sessions, where traditional dissection and observation activities are enhanced with discussions about medical ethics, respect for human dignity, and professional responsibility. Students are encouraged to reflect on the humanitarian aspects of their future careers while developing technical skills. This approach helps bridge the gap between theoretical knowledge and practical application while reinforcing professional values and ethical principles.

To ensure continuous improvement, we have established a robust feedback system that regularly assesses the effectiveness of our integrated approach. Student surveys, focus group discussions, and performance assessments help identify areas for enhancement and refinement. The teaching team regularly reviews and updates course materials to maintain relevance and effectiveness in both professional knowledge transfer and value education.

Furthermore, we have developed specialized assessment methods that evaluate both technical competency and ethical understanding. These assessments include traditional examinations supplemented with case analyses, reflective essays, and group projects that require students to demonstrate their grasp of both anatomical concepts and ethical principles. This comprehensive evaluation approach ensures that students develop both the professional knowledge and ethical awareness necessary for their future careers.

The success of this integrated approach is evidenced by improved student engagement, enhanced learning outcomes, and positive feedback from both students and external stakeholders. Students demonstrate a deeper understanding of the connection between anatomical knowledge and professional ethics, preparing them more effectively for their future roles in healthcare and sports medicine.

3.4. Practical Implementation and Outcomes

The Sports Anatomy course implementation focuses on:

1. Professional Development
 - a. Enhancement of teaching team's capabilities in combining professional and ideological education
 - b. Regular training in educational technology and pedagogical innovations
2. Educational Philosophy Integration
 - a. Application of dialectical materialism in understanding human body structure and function
 - b. Integration of professional ethics and humanitarian values
 - c. Development of critical thinking and scientific reasoning skills
3. Outcome Assessment
 - a. Regular evaluation of learning outcomes
 - b. Collection and analysis of student feedback
 - c. Continuous improvement based on assessment results

The course emphasizes the connection between anatomical knowledge and professional practice while fostering critical thinking and ethical awareness. Through practical sessions, students develop not only technical skills but also professional values and humanitarian perspectives. The integration of digital technologies and innovative teaching methods has significantly enhanced student engagement and learning outcomes.

4. Conclusion and Future Perspectives

Based on the OBE concept, the ideological and political education reform in Sports Anatomy has transformed traditional teaching approaches into a student-centered learning model that enhances educational effectiveness through comprehensive digital integration and innovative teaching methods. The reformed curriculum has successfully implemented digital learning platforms and interactive resources while integrating professional knowledge with ethical considerations, effectively developing students' critical thinking and problem-solving abilities. Through emphasizing professional ethics, humanitarian values, and global awareness in sports medicine and rehabilitation, the course cultivates students' professional responsibility and social commitment. The curriculum bridges theoretical knowledge with clinical practice, fostering evidence-based practice approaches and developing analytical skills that prepare students for real-world challenges. The comprehensive assessment framework incorporates multi-dimensional evaluation methods and continuous assessment of learning outcomes, ensuring the effective integration of professional competencies and ethical awareness. This reformed Sports Anatomy course has established itself as a model for integrating professional education with ideological and political elements, successfully combining anatomical knowledge with humanitarian perspectives while maintaining high academic standards. Looking forward, this curriculum demonstrates how outcome-based education can effectively unite professional expertise, practical skills, and value education, serving as an exemplary case for future educational reforms in anatomy and related fields.

Abbreviations

OBE	Outcome-Based Education
VR	Virtual Reality
AR	Augmented Reality

Author Contributions

Jianchang Ren: Conceptualization, Data curation, Funding acquisition, Methodology

Haili Xiao: Conceptualization, Data curation, Funding acquisition, Methodology, Writing – original draft

Funding

This research was funded by the Demonstration Project of Curriculum Ideological and Political Education Integration - "Sports Anatomy" Course at Lingnan Normal University.

Conflicts of Interest

The authors declare no conflicts of interest.

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Research Fields

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