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STUDENT-CENTERED APPROACHES IN ANATOMY EDUCATION

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Abstract: Anatomy is a core discipline in medical education, requiring students to acquire complex spatial knowledge and clinical understanding. Traditional teacher-centered approaches, while effective in knowledge transmission, often limit active student engagement and critical thinking. In recent years, student-centered approaches have gained increasing attention in anatomy education as a means to enhance learning outcomes, motivation, and long-term knowledge retention. This article explores the principles, methods, and effectiveness of student-centered approaches in anatomy education. The findings suggest that active learning strategies, including problem-based learning, team-based learning, and technology-enhanced instruction, significantly improve students' understanding, autonomy, and professional skills. Integrating student-centered approaches into anatomy curricula supports deeper learning and better preparation for clinical practice.

Key Words: Anatomy education; student-centered learning; active learning; problem-based learning; medical education; teaching methodology

Introduction

Human anatomy forms the foundation of medical education and is essential for clinical competence and patient safety. Mastery of anatomical knowledge enables medical students to understand disease mechanisms, perform physical examinations, and carry out diagnostic and therapeutic procedures. Traditionally, anatomy has been taught through lectures and instructor-led dissection, emphasizing passive knowledge acquisition.

However, contemporary medical education emphasizes the development of critical thinking, problem-solving, and lifelong learning skills. Student-centered approaches shift the focus from the instructor to the learner, encouraging active participation and responsibility for learning. These approaches are particularly valuable in anatomy education, where visualization, spatial reasoning, and clinical integration are essential. This article examines student-centered teaching strategies in anatomy education and evaluates their impact on learning effectiveness.

Methods

This study was conducted as a narrative review of the literature on student-centered approaches in anatomy education. Relevant studies were identified through searches of PubMed, Scopus, and Google Scholar databases using keywords such as “student-centered learning,” “anatomy education,” “active learning,” “problem-based learning,” and “medical education.” Peer-reviewed articles published in English between 2000 and 2024 were included.

Studies focusing on medical and health science students were analyzed. Data related to teaching strategies, learning outcomes, student engagement, and assessment results were extracted and qualitatively synthesized to evaluate the effectiveness of student-centered approaches.

Results

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The reviewed studies demonstrated that student-centered approaches significantly enhance student engagement and motivation in anatomy courses. Problem-based learning encouraged students to apply anatomical knowledge to clinical scenarios, improving conceptual understanding and clinical relevance. Team-based learning promoted collaboration, communication skills, and peer-assisted learning.

Technology-enhanced methods, such as virtual anatomy platforms, 3D models, and interactive digital resources, allowed students to learn at their own pace and revisit complex structures multiple times. These tools were associated with improved short-term academic performance and higher student satisfaction. Overall, students exposed to student-centered approaches showed better knowledge retention and greater confidence in applying anatomical concepts.

Discussion

The findings highlight the advantages of student-centered approaches in addressing the challenges of anatomy education. Active learning strategies transform students from passive recipients of information into active participants in the learning process. This shift fosters deeper understanding, critical thinking, and self-directed learning skills essential for medical practice.

Despite their benefits, student-centered approaches require careful planning, faculty training, and adequate resources. Combining student-centered methods with traditional teaching ensures that foundational anatomical knowledge is maintained while enhancing learner engagement. A blended educational model appears to be the most effective strategy for anatomy education.

Conclusion

Student-centered approaches play a crucial role in modern anatomy education by promoting active learning, autonomy, and clinical integration. Methods such as problem-based learning, collaborative learning, and technology-enhanced instruction improve learning outcomes and better prepare students for clinical practice. Integrating student-centered strategies with traditional teaching methods offers a balanced and effective approach to anatomy education. Future research should focus on optimizing curriculum design and assessing long-term impacts on clinical competence.

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