

PRACTICE BEFORE THEORY? RETHINKING INSTRUCTIONAL ORDER IN UNDERGRADUATE ANATOMY

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SUBTHEME: Assessment

BACKGROUND

Instructional sequencing in anatomy education—specifically the order in which theoretical and practical content is delivered—can significantly influence how students engage with and absorb material. Traditionally, anatomy curricula favour a lecture-first model, assuming foundational knowledge is necessary before hands-on learning. However, recent educational literature has increasingly challenged this assumption, proposing that beginning with practical experiences may better support active learning, retention, and concept application through context-rich environments (Estai & Bunt, 2016; Trelease, 2016).

AIMS

This study aimed to evaluate whether delivering practical sessions prior to lectures improves student performance in a first-year undergraduate anatomy course. Specifically, it explored the influence of instructional sequencing on both short-term, topic-specific assessments and broader integrative evaluation.

DESCRIPTION OF INTERVENTION

In 2023, an opportunity arose through timetabling to reverse the conventional structure. Students first engaged in weekly practicals that introduced anatomical content through hands-on dissection, specimen analysis, and small-group problem-solving. Lectures followed these sessions, reinforcing core concepts and integrating theoretical detail.

DESIGN AND METHODS

This comparative study examined performance data from two cohorts: 2022 (lecture-before-practical, n=201) and 2023 (practical-before-lecture, n=177). Assessments included six topic-specific practicals (P1–P6), a mid-semester exam, and a final integrative "Woolly Mammoth" task. Independent samples t-tests were used to analyse differences between groups. Data was collected throughout the semester across both years.

RESULTS

The 2023 cohort significantly outperformed the 2022 cohort in five of six practical assessments, particularly in P2 (Cells and Integumentary System) and P6 (Reproductive Structures, Brain & Topography), with moderate to large effect sizes. However, the 2022 cohort performed better on the final integrative task.

CONCLUSIONS

Delivering practicals before lectures may enhance topic-specific performance, potentially by promoting engagement and immediate application. However, this effect may also reflect differences in cohort characteristics, prior knowledge, or other contextual variables. The lecture-first approach appeared to support integrative assessment performance. These findings highlight the need for nuanced, context-sensitive sequencing strategies in curriculum design (Wilson et al., 2019).

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