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PROBLEM-BASED LEARNING AS A STRATEGY FOR ENHANCING COGNITIVE ENGAGEMENT AND ACADEMIC ACHIEVEMENT IN HISTOLOGY WITHIN UNDERGRADUATE MEDICAL EDUCATION

ПРОБЛЕМНО-ОРІЄНТОВАНЕ НАВЧАННЯ ЯК СТРАТЕГІЯ ПІДВИЩЕННЯ КОГНІТИВНОЇ ЗАЛУЧЕНОСТІ ТА АКАДЕМІЧНОЇ УСПІШНОСТІ З ГІСТОЛОГІЇ У ДОДИПЛОМНІЙ МЕДИЧНІЙ ОСВІТІ

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Contemporary medical education is confronted with the dual imperative of ensuring robust theoretical preparation while cultivating clinical reasoning, critical thinking, and the capacity to apply knowledge in complex and uncertain professional contexts. The evolving demands placed upon healthcare professionals necessitate graduates who not only reproduce factual information but also integrate, interpret, and transfer knowledge into clinical decision-making processes [2, 455]. In response, medical curricula worldwide have progressively transitioned from predominantly lecture-

based, teacher-centered models toward active, student-centered pedagogical paradigms.

Active learning encompasses a spectrum of instructional strategies, including problem-based learning (PBL), case-based learning, team-based learning, simulation-based education, and flipped classroom models [1, 573]. These approaches conceptualize learners as active constructors of knowledge and are designed to foster higher-order cognitive processes such as analysis, synthesis, evaluation, and knowledge transfer. Among these strategies, PBL has achieved particular prominence due to its grounding in constructivist learning theory and its close alignment with the competencies required for contemporary medical practice. Empirical evidence indicates that PBL contributes to the development of critical thinking, clinical reasoning, and self-directed learning skills, while simultaneously enhancing student motivation and engagement [2].

Cognitive engagement has emerged as a central construct for understanding students' intellectual involvement in learning activities. It reflects the extent to which learners invest sustained effort, employ deep learning strategies, and engage in meaningful cognitive processing. In medical education, student's cognitive engagement is essential for integrating foundational biomedical knowledge with clinical application [4]. Nevertheless, its operationalization and measurement remain methodologically challenging, and its relationship with objective academic performance continues to require further clarification.

These issues are particularly salient in foundational morphological disciplines such as Histology, Cytology, and Embryology. These subjects are characterized by substantial cognitive load, abstract theoretical constructs, complex terminology, and dense visual-spatial information. Traditional instructional approaches in Histology frequently prioritize memorization and structural identification, which may result in fragmented knowledge and limited clinical transferability. Accordingly, there is a pressing need to implement pedagogical strategies that promote deeper cognitive processing and meaningful learning within these disciplines.

Problem-based learning represents one of the most extensively investigated and systematically implemented active learning models in undergraduate medical education. Syntheses of contemporary research, including systematic reviews and meta-analyses, indicate that PBL supports deeper conceptual understanding, enhances clinical reasoning, and fosters autonomous learning behaviors compared with conventional lecture-based instruction. However, effect sizes vary across contexts, and outcomes are influenced by curricular design, assessment formats, and implementation fidelity [3–5].

Hybrid instructional models that integrate PBL with complementary active strategies such as flipped classroom designs, multidisciplinary teamwork, structured small-group discussion, heuristic dialogue, case analysis, and digital interactive tools-appear particularly promising. Evidence suggests that such integrative approaches may amplify learning outcomes by combining structured pre-class preparation with collaborative in-class problem solving. Digital and technology-enhanced variants of PBL further expand opportunities for interactive engagement and flexible learning environments.

Despite the growing body of supportive evidence, findings regarding the impact of active learning approaches on standardized academic performance remain heterogeneous [6, 1342]. While improvements in critical thinking, clinical reasoning, and communication skills are consistently reported, gains in examination scores are often moderate. Moreover, a substantial proportion of studies rely on subjective measures such as self-reported satisfaction, underscoring the need for objective assessments of cognitive engagement and long-term educational impact.

Conclusions. The implementation of a PBL-oriented instructional model in Histology creates pedagogically favorable conditions for deep cognitive processing of complex morphological content. From an instructional perspective, the integration of problem-based learning with complementary active strategies is particularly valuable in disciplines characterized by high cognitive load and conceptual abstraction. Such integration enhances intrinsic motivation, analytical-synthetic thinking, and the capacity to apply foundational biomedical knowledge in clinically oriented contexts.

Overall, problem-based learning constitutes a promising, evidence-informed approach to strengthening cognitive engagement and academic achievement in histology, thereby reinforcing the continuity between basic biomedical sciences and clinical training in undergraduate medical education.

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PSYCHOLOGICAL FEATURES OF STUDENTS' SEPARATION FROM THE PARENTAL FAMILY

ПСИХОЛОГІЧНІ ОСОБЛИВОСТІ ВІДОКРЕМЛЕННЯ СТУДЕНТСЬКОЇ МОЛОДІ ВІД БАТЬКІВСЬКОЇ СІМ'Ї

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Сучасний етап розвитку українського суспільства характеризується модернізацією освіти та трансформацією соціальних ролей молоді, зокрема студентської. Одним із ключових аспектів розвитку особистості у цей період є процес психологічної сепарації від батьків, що передбачає формування автономності, незалежності та відповідальності при збереженні емоційного зв'язку з родиною [5]. Психологічна відокремленість розглядається як здатність молодої людини самостійно приймати рішення, регулювати емоції та діяти без надмірної залежності від батьків [1].

Актуальність дослідження зумовлена тим, що недостатньо сформована сепарація може супроводжуватись підвищеною тривожністю, конфліктами у взаєминах із батьками та зниженням психологічного