

Chapter 5

The Evolution of Core Curriculum in Medical Schools: From Passive to Active Learning

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ABSTRACT

Medical education has undergone an evolution from passive, lecture-based learning environments to curricula that accentuate an active and dynamic system. Stemming from technological innovation, a greater amount of responsibility has been placed on students during clerkships and residency. In addition, a shift in USMLE assessment focuses on interpretation and application as compared to the former memorization-heavy approach. Therefore, learning has been modified to prepare students for the future medical landscape. Through the use of Team-Based, Problem-Based, and/or Case-Based Learning, medical students are taught to understand content rather than memorize it. The authors elucidate the rationale behind active learning and present a guide for medical educators to adopt this style of learning in every part of the undergraduate medical school training process.

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BACKGROUND

Why Change the Core Curriculum?

Undergraduate medical schools serve as the source for transformation of students into physicians. The purpose of a core curriculum is to integrate comprehension of physiological and pathological processes with the mindset of thinking like a physician. In recent years, medical school core curricula have been undergoing a fundamental shift, evolving from the traditional, teacher-based curriculum to a student-centered and active learning approach. The teacher-centric approach began as early as the 1760s with the apprenticeship-based curriculum model and has persisted despite various forms of curricular changes (Papa & Harasym, 1999). As of 2018, a total of 124 medical schools indicated that a curriculum change is being planned or has been implemented within the past three years (Association of American Medical Colleges [AAMC], 2018). Specifically, newly formed medical schools, as well as current schools, have or are transitioning to some semblance of a student-centered curriculum in the form of case-based learning (CBL), problem-based learning (PBL), and/or team-based learning (TBL) (AAMC, 2018; Haidet, Kubitz, & McCormack, 2014).

Modernization of the core curriculum shifts focus from reiteration of factual information to application of knowledge to novel, problem-solving settings. Advancements in medical research and technology have produced a greater volume of material that students need to use in patient care, much of which can be accessed quickly if not immediately known. The pedagogy of the progressive curriculum trains physicians for a role where they need to use readily available information to apply in a unique situation. With educators being accustomed to the traditional method of education, it is vital to ensure this transition is thorough and efficient.

Curricular changes have occurred due to several fundamental reasons. The essential driving force is due to the greater onus placed on students in patient care as well as the transformation of medical examinations for physician certification. There has been a growing responsibility placed on medical students during their clerkships and residents. Expectations for competency in a wide range of activities, including communication and procedures, have been rising; it is the responsibility of medical schools to prepare students for these roles (Raymond, Mee, King, Haist, & Winward, 2011). Student transition into medical clerkship has been studied extensively, with many reporting difficulties in time management due to the longer hours, faster pace and greater intensity (Surmon, Bialocerkowski, & Hu, 2016). A common concern expressed by students was their inability to contextualize and integrate their preclinical knowledge into a patient-centered, clinical experience. A significant barrier in the adaptation to clerkship was the nature by which preclinical assessments were carried out, emphasizing recall of facts rather than the understanding of concepts (Surmon et al., 2016). This is exemplified with the struggle to apply knowledge and skills to practice, as the learning in the preclinical years did not foster an approach for doing so (Surmon et al., 2016). Whereas traditional testing fosters rapid acquisition of information in order to be prepared for the next assessment, students benefit in the long term with a contextual approach that integrates learning within clinical frameworks (Surmon et al., 2016). Clerkship requires learning through patient encounters and occurs at a faster pace compared to the preclinical curriculum where learning is completed via lectures and textbooks. The nature of learning is autonomous and longitudinal, requiring reflection to identify knowledge gaps and an impetus to fill in those gaps through research. It is therefore imperative that assessment in the preclinical years models the behaviors and aligns with the methodology of learning in graduate medical education.

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