Problem-based learning in medical school: A student's perspective

The Harvard community has made this article openly available. Please share how this access benefits you. Your story matters

Citation

Published Version
doi:10.1016/j.amsu.2016.11.011

Citable link
http://nrs.harvard.edu/urn-3:HUL.InstRepos:29738968

Terms of Use
This article was downloaded from Harvard University’s DASH repository, and is made available under the terms and conditions applicable to Other Posted Material, as set forth at http://nrs.harvard.edu/urn-3:HUL.InstRepos:dash.current.terms-of-use#LAA
Problem-based learning (PBL) has been a concept in existence for decades yet its implementation in medical student education is limited. Considering the nature of a physician's work, PBL is a logical step towards developing students' abilities to synthesize and integrate foundational concepts into clinical medicine. Harvard’s recently redesigned Pathways curriculum has shifted almost exclusively towards PBL in its one-year preclinical curriculum. This piece provides my thoughts, both derived from my own reflections as well as conversations and observations of my peers, on the effectiveness, advantages, and disadvantages of a PBL curriculum. All in all, the feelings of my peers and I regarding PBL has been overwhelmingly positive despite potential areas of improvement and continued fine-tuning.

© 2016 Published by Elsevier Ltd on behalf of IJS Publishing Group Ltd. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).
individual's thoughts. This dynamic processing of ideas and feedback provides quick, robust insight into a problem. However, the more important benefit of the discussion lies in the encouragement and nutriment of critical analysis of a variety of ideas and stances. Students are allowed the freedom to not only discuss "correct" answers but also an opportunity to knowingly challenge "correct" answers to foster deeper understanding of the question and topic at hand. Team members build comradery and develop an appreciation for the breadth of views on the simplest of topics. Notably, student participation dictates that students are more engaged.

Application of basic science concepts to clinically relevant scenarios plays a powerful role in not only understanding and synergizing concepts but also in developing comfort with integrating basic science principles with clinical medicine. For example, examining cystic fibrosis on various levels from transcription to translation to post-translational modifications and transport provides opportunities for problem solving, deeper understanding of foundational concepts, and clinical knowledge/presentation of a common disease. Importantly, I believe that students can learn lifelong learning skills through PBL as students learn content independently before sessions through various, often public-access, resources and work through sessions replete with data from primary literature sources. In essence, students are taught to use information that can be easily obtained by scholarly searches to understand and propose solutions for complex problems for which there may be no current solution. I have been very satisfied with the decreased emphasis on memorizing minutiae that can be easily searched and the increased emphasis on thinking in various dimensions.

Though PBL has many advantages, I have observed several potential issues with the PBL curriculum. In practice, PBL alone is not a one-size-fits-all curriculum concept. This has become rather apparent in the lack of a lecture for anatomy. Certain concepts are difficult to grasp from a dense anatomy excerpt; thus, having some form of lecture for subjects such as anatomy can be very helpful in understanding certain concepts. Another issue possibly arises when a group member is a topic expert due to previous advanced degrees or other experience(s) such as research. My peers have commented on the presence of an expert often diminishing the learning experience as those experts reportedly speak very little due to already knowing the answer and do not participate in the group dynamics, effectively leaving the other 3 members with one less member. As an expert in certain topics myself from past research experiences, I have tried my best to facilitate group dynamics by either slowly leading members towards the correct answer when stuck or by providing deeper insight to a topic when group members quickly understand topics. Furthermore, I have attempted to only answer large group discussion questions when no other students have responses to a posed question. The presence of a short guide on how to be an effective group member can be quite useful.

With regards to discussion dynamics, a variety of personalities co-exist in a PBL setting. Some students enjoy answering questions they know the answer to whereas other students are more shy about responding, perhaps in fear of voicing an incorrect answer. Though a limit on the number of students in large discussion groups helps relieve some pressure, I do sense that some students are still shy about voicing answers that they are not completely confident is correct. I believe that whether personalities clash in disruptive ways depends heavily on the student body. Based on my interactions with my classmates and friends at various medical schools throughout the country, I feel that medical students are respectful and possess above average communication and interpersonal skills, particularly since they have been vetted through a rigorous though not flawless selection process. Thus it is important to focus on encouraging discussion of both correct and incorrect ideas.

While group and discussion dynamics are important, they are intrinsic to any model of learning and curricula can likely never be molded to fit all students perfectly. A more pressing issue identified was the pacing of sessions. While the session pacing seems comfortable for the majority of my peers, I have observed that students are sometimes left behind figuring out previous problems or ideas either due to not voicing their lack of understanding or by vocalization of a need to press on to cover all relevant parts for a session. However, timing is a delicate issue that likely cannot accommodate every student. Since the PBL model depends on students to go back after each session and review the session topics for integration, reinforcement, and clarification, small conceptual weaknesses or confusion coming out of the PBL sessions are, in my opinion, to be expected.

All in all, PBL has been immensely enjoyable for my classmates and me. Learning how to apply knowledge to complex problems is the basis for future advancements in science as well as excellent care of patients.

Ethical approval

None required.

Sources of funding

None.

Author contribution

Bliss J. Chang conceived and wrote the manuscript (perspective piece).

Conflicts of interest

None.

Trial registry number

N/A.

Guarantor

Bliss J. Chang.

Acknowledgements

I declare no financial or competing interests.