Advances in Clinical Medical Research and Healthcare Delivery

Volume 3 | Issue 2 Article 6

2023

Pedagogy of Problems

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Recommended Citation

Babineau R. Pedagogy of Problems. *Advances in Clinical Medical Research and Healthcare Delivery*. 2023; 3(2). doi: 10.53785/2769-2779.1158.

ISSN: 2769-2779

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Keywords
Medical Education, Problem Based Learning, Team Based Learning

Conflict of Interest Statement
I have no conflicts of interest to declare.

PERSONAL NARRATIVE

Pedagogy of Problems

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Nowadays, medical students are learning in a myriad of ways − some more traditional than others. For example, some students elect to attend class in person, while others take lectures online at 2x speed. While I am one of the only students in my class who still uses the analog pencil and paper, my iPad-laden counterparts and I converge for sessions involving group problem solving. Most American medical schools employ some variation of this idea in their curriculum, and common to academia, institutions often have a proprietary name for their version of it.

During a problem-based learning (PBL) session, students are tasked with completing a case-based discussion with their team using pre-existing knowledge in their small group with the help of a preceptor. A recent systematic review of PBL pedagogy by Trullàs et al. even asserted that one of the main benefits, in addition to learning objectives, is that this design promotes the development of other professional competencies required of healthcare professionals.[1] In the four meta-analyses included in their review, objective metrics of knowledge acquisition from PBL sessions appear as good or better than traditional methods, but integrating self-learning with communication, social, and problem-solving skills could pay dividends later. Also of note, Trullàs found that student satisfaction tended to be higher for PBL sessions compared to lecture-based classes − and I agree.[1] Interestingly, PBL's superiority is unclear when compared to simulation-based activities, where learners apply clinical judgement and skills.[2,3] Simulations can be even more resource-intensive than PBL methods.[1]

My school often uses team-based learning (TBL) sessions, where we similarly engage in solving a problem, now using the information we were assigned to learn beforehand. Unlike a traditional lecture, the learning is done prior to class time, and during each session, teams are working on applying the new information to a tricky patient vignette (our recent session on SLE was a doozie). Typical to TBL, students complete individual and group evaluations before entering the case time, with peer evaluations at the end (Burgess). These may have an impact on the degree of preparation students arrive with, which is key for getting the most out of the session. Actively engaging with the material is the crux of why these designs are proposed to work. When evaluating hypothetical patient cases, we are encouraged to use outside resources, including recent literature and diagnostic guidelines attempting to fill in gaps in our knowledge.

Working with other students in a PBL or TBL session aids in preparing for times when learners will have to have similar discussions on the wards or when presenting a patient. These sessions on the calendar ensure that I take ownership of the material; if no other evaluation lies between myself and the test, it'd be much easier to learn it when I am comfortable, but this compels me to be ready and contribute to my team. For traditional lectures, I feel more in control of my learning when note taking at my own pace, and the TBL sessions allow me to put my learning methods to the test under the scrutiny of our professor's challenges. Little time to tackle this much material often means that students arrive with different piecemeal frameworks for a disease process, and we need to feed off one another to

Received 30 March 2023; accepted 31 March 2023.
Available online ■ ■ ■

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https://doi.org/10.53785/2769-2779.1158

generate a complete concept of what is being presented — even more so when we can use outside resources.

These paradigms in med ed are well established, and educators are constantly attempting to refine their practices. TBL and PBL (PBL especially), certainly require more attention and effort than a typical lecture, which likely plays into these sessions being at a reduced frequency than other methods of delivery. While it has become much more common since its inception 50 years ago, there are barriers to these sessions becoming the dominant form of classroom learning in medical schools. For PBLs, one educator aids each group of students, whereas during TBL preceptors circulate to attend to the many questions that will arise as students attempt to tackle a case. TBL may be considered less haphazard, demanding a similar starting point for learners as they enter the classroom to even out contributions amongst members and having a senior clinician present.[4]

Studying in the modern age can be incredibly isolating if one so chooses. Virtual classes, resources dominated by third-party materials, and the differing needs of adult learners can create a lot of separation between a student and their classmates and the traditional school and hospital environments. Flashcard banks/apps, mainstays amongst medical students, where a learner can click away at thousands of cards to aid in future factual recall, can comprise a large portion of students' days. PBL and TBL focus on the application of knowledge and skills with your peers in an unfamiliar clinical scenario. This is not to say repetition tools like flashcard apps don't have their place in memorizing the sea of facts students are exposed to, but considering the end goals of undergraduate medical education, one can understand why many schools have switched more of their curricula to these learning styles.

While I've grown accustomed to starting a long day of studying in the comfort of my apartment, I don't lament the days when we have to head to campus for a TBL session. I find that I retain more information on the subject and have more confidence when I am evaluated. I'll try to forget this bit before I prepare for STEP next winter, but some evidence indicates that differential gains in knowledge from TBL are short-lived.[5] PBL and TBL are not magical tools for learning new topics, but these student-centered approaches foster environments of collaborative problem-solving among peers. It creates a situation that mimics the real world, encourages teamwork in achieving new competencies, and ensures more time spent collaborating with peers to solve problems. Institutions can tinker with key elements of these workshops to improve learning and student satisfaction.

Conflict of interest

The author have no conflicts of interest to declare.

Author contribution

Conceptualization, Investigation, Writing — original draft, Writing — review & editing.

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