
Revisiting pre-clinical coursework after clerkships through "near-peer teaching"

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In this article, Jasmine, a fourth year medical student, reflects on her near-peer teaching experience in "Homeostasis 1", an integrated organ-based physiology and pathophysiology course for 170 first-year medical and dental students in the "Pathways" curriculum at HMS.

After I completed my core clerkship year, my head was filled with "clinical schema" about differential diagnoses and disease management principles. Although it was humbling to reflect on how much I had learned on the wards, it also became apparent how much "pre-clinical knowledge" I had forgotten. This was bittersweet. On one hand, I was glad the days of STEP 1 studying were over, but on the other hand, it was disheartening not to remember basic physiology principles that often took a backseat to clinical management principles on the wards.

And so I remember thinking: what better way to relearn basic physiology principles than to revisit Dr. Schwartzstein's first-year physiology course? Dr. Schwartzstein and the course faculty were kind enough to welcome me and four of my 4th-year-medical-student classmates back as "near-peer teachers" (NPT) to a brand new integrated, organ-based course called "Homeostasis 1" in the pioneer year of HMS' "Pathways" curriculum.

For a two-week period in the course, we helped facilitate unstructured morning review sessions and worked with course faculty to co-teach small-group sessions using the "case-based collaborative learning" method¹ developed at HMS. We also attended lectures and joined first-year students in doing some of the pre-reading assigned for the course. To my dismay, I had in fact forgotten quite a lot, but it came back faster and more intuitively than I had expected, especially when I answered learner questions about the content. In fact, this "stimulated retrieval" is hypothesized to be one mechanism that affords learning benefits to students who serve as NPT; other hypotheses put forth to explain the well-known "teaching to learn" phenomenon for NPT include: increased motivation to learn material and his/her ability to self-reflect on his/her learning process and knowledge gaps.² To the latter point, I definitely became more aware of my knowledge gaps as I prepared to teach material and I often learned the most in moments when I had to say, "I don't know, let's think about this together." Reasoning through a clinical case with first-year students, I found myself activating proximal knowledge from the wards to think through the presenting signs or symptoms of a patient. For me, this was the greatest learning benefit: being able to logically scaffold my "clinical schema" with pre-clinical basic science principles. To put it in a different way, "drinking from the firehose" the second time around was easier after I had built the metaphorical "pipes" to organize the flow of knowledge coming at me. I was able to scaffold concepts like afterload, PV loops, and compliance on existing frameworks of cardiovascular and pulmonary pathologies that my patients had on the wards - in this way, it was coming together faster and, perhaps, more meaningfully the second time around.

The longer I'm a student, the more I realize that learning and teaching are two sides of the same coin. Many of us instinctively know that learning a topic deeply allows us to teach it better and teaching a topic to others helps us learn it better. Teaching is an altruistic act, but for me, it is also slightly selfish: I learn more when I teach. It is my hope that medical students will continue to get more opportunities to serve as NPT in pre-clinical and clinical settings not only for the learning benefits, but also to prepare us for our roles as resident-teachers. The good news is that peer-learners benefit from near-peer teaching, too. Consistent with social and cognitive congruence benefits of near-peer teaching for peer-learners published in the literature³, 99% of first-year HMS students who responded to a survey about the Homeostasis 1 near-peer teaching pilot in the first two-weeks of the course (n = 73) "agreed" or "strongly agreed" with the statement "being taught by senior medical student(s) enhanced my overall learning experience". More encouragingly, 78% of first-year respondents "agreed" or "strongly agreed" with the statement "I would sign up for this or a similar peer-teaching opportunity as a senior medical student", highlighting, perhaps, the importance that role-modelling can have in future academic and professional career paths. All in all, near-peer teaching can benefit everyone, and I am optimistic that opportunities for near-peer teaching in Homeostasis and beyond will continue to grow for students in future years.

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References:

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