

Coproducing the Learning Environment: Lessons Learned from a Year of Near-Peer Teaching

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ABSTRACT

PURPOSE: Few medical schools offer electives with the goal of teaching medical students to be effective teachers prior to residency. We developed a novel year-long, longitudinal course, the Clinical Teaching Elective (CTE), that develops fourth-year medical students as student teachers within Clinical Skills (CS).

APPROACH/METHODS: The elective was designed by Clinical Skills (CS) Course Directors and two fourth-year medical students (M4) as a longitudinal elective. The elective involves teaching in the Simulation Center where M4 student instructors teach first and second-year medical students. Each session, in addition to simulated patient case topics, emphasizes application of a key topic within medical education (ie clinical reasoning, reflective practice, dual process reasoning).

DISCUSSION: Six “teaching takeaways” were crafted to summarize common themes experienced by near-peer medical student educators.

1. Teaching is not about the destination, but rather the diagnostic journey.
2. Students thrive when learning is co-produced.
3. A little bit of praise goes a long way.
4. You can't please every learner.
5. When students struggle, there is more to teach than just the answer.
6. Facilitating learner independent thinking promotes future autonomy.

SIGNIFICANCE: A novel CTE for fourth-year medical students that emphasizes medical education pedagogy prepares students to serve as educators in residency. The CTE provides an opportunity for medical students to develop into effective clinical educators prior to residency. The focus of our elective on medical education pedagogy furthers medical student understanding of adult learning theory and fosters professional development in teaching clinical reasoning.

KEYWORDS: medical education, near-peer teacher, simulation, medical students

TYPE: Perspective

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Introduction

The Clinical Teaching Elective is a longitudinal course developed by medical students and faculty to give fourth year medical students (M4) early exposure to teaching. Each year, all M4 students are given the opportunity to apply to participate in this elective, and 2–5 students are selected based on interest in medical education and past teaching experience. Unique to this elective, M4 teachers engage with first- and second-year medical students in a clinical skills course by observing simulated patient cases, leading group case debriefs, and providing feedback on history and physical exam skills. The curriculum emphasizes the review and application of relevant medical education pedagogy, with the goal of allowing M4 instructors to learn and engage with core tenets of medical

education prior to residency. Each session, M4 instructors engage in learning objectives that are directly linked to a topic in medical education theory and reinforce skills such as clinical reasoning, gauging learner's stages of skill acquisition, and self-directed learning.

Through the experience of teaching in this novel elective as medical students, two M4 instructors identified multiple teaching takeaways which now serve as our very own educational cornerstones. Our experience became richer as we repeatedly passed through the cycle of preparing, teaching, and reflecting. As near-peer teachers, we present a unique perspective on serving as instructors in a course in which we were once students while reflecting on teaching pedagogy in the midst of our own education. We have six teaching takeaways, centered around the theme of engaging learners in the clinical

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environment, which we plan to embody as we prepare to graduate from medical school and assume the role of resident educators.

Teaching is not About the Destination, but Rather the Diagnostic Journey

I was amazed at how quickly the learners clenched a diagnosis during a recent teaching session. Within minutes of hearing a story of subacute edema in a patient with diabetes, they began listing causes of nephrotic syndrome. It was tempting to believe they had mastered the content. However, as we dove deeper into the case, it became evident that there were significant knowledge gaps in their diagnostic approach to edema.

Effective clinical teaching centers around discussing the diagnostic journey rather than the diagnosis alone. Frequent multiple-choice tests can foster a mindset in early medical trainees that there is “one right answer”; when applied to clinical reasoning, this mindset can cause anchoring and premature closure.^{1,2} With Step exams in both the rear-view mirror and not too distant future, we are sympathetic to the fallacy that knowing the “right answer” is the deepest form of learning. As instructors, we must help students move beyond the “right” answer to reflect on the thought process that got them there, often described as clinical reasoning.³ One way we learned to do this was by changing the questions we asked; for example, asking “what is your *thought process* for approaching a patient presenting with edema?” instead of “what is your differential for edema?”. When the diagnostic process is the goal of our teaching, even routine cases offer an opportunity to manipulate details and challenge assumptions to help organize the learner’s knowledge to be better prepared for their next patient.

Students Thrive When Learning is co-Produced

After a recent discussion on asthma and smoking cessation, I recognized that my framework was instructor-centered. I intended to discuss asthma management based upon learning objectives I had created but failed to prepare for a broader discussion on the approach to addressing smoking cessation. Feedback from students revealed that it was hard to anticipate where I was leading the conversation, and to my dismay, that I had failed to sufficiently address their questions. I’d fallen victim to a common trap: I established a teaching framework that best met my needs rather than partnering with the learners to set collaborative goals.

Coproduction of education, a principle adapted from health-care delivery, is a model where teachers and learners partner to set goals, prioritize tasks, and share reflections, allowing the “expertise” and needs of both teacher and learner to be utilized.^{4,5} In a busy clinical schedule, it can be easy to overlook the value of co-producing a learner’s goals and objectives, thereby placing an educator’s needs first. We learned that by asking learners for questions and concepts they would like to cover at the beginning of our teaching, we were able to establish an agreed upon prioritization of the team’s learning objectives. By empowering learners to co-produce their education,

educators help to foster the development of lifelong learners through shared decision-making and reflection.^{6,7}

A Little bit of Praise Goes a Long way

When giving an oral presentation, a second-year medical student suggested a plan for their patient that included both a contingency to monitor for adverse reactions and a plan to establish outpatient follow-up. I provided them with specific and positive feedback about why their plan was effective. They later shared that my feedback imparted confidence in recommending therapeutic plans for other patients. Having concurrently experienced the student and teacher role, we have a unique perspective into what makes us feel supported as learners, and it turns out that a little bit of praise for our effort goes a long way.

Education is often focused on identifying opportunities for improvement and constructive criticism, but taking the time to acknowledge specific strengths, skills, and attitudes can be transformative for a learner. It is vital to positively reinforce what students are doing well, for a lack of feedback may cause them to decrease the use of that well-executed skill or helpful attitude.⁸ As educators, we hope that students are encouraged and challenged by the feedback we provide, but successfully creating a safe learning environment for this can be a daunting task. Praise coupled with affirmation of an attempt, even a feeble attempt, can help learners embrace the notion of lifelong learning. Our focus in education is helping engaged learners grow and progress, regardless of where they are starting. Medical educators have the ability to ascribe value to the journey of being a student; praise for the development of doctoring skills and mindsets remind learners that the work they are doing is relevant and important to patient care.⁸

You Can’t Please Every Learner

As educators, we aim to provide a safe learning environment, particularly important when asking questions to guide learning. Real time feedback from student learners revealed that in the same teaching session, the silence between a question and my rescue was “just right” for one student, but it was too long for another. This led me to recognize that I can’t please every learner, and this should not be my primary objective.

Some have suggested there are multiple developmental phases in a teacher’s maturation, with earlier phases driven by the teacher garnering praise before eventually being motivated solely by future student performance.⁵ As young educators, the allure of positive feedback is rewarding; in fact, it can be easy to mistake positive feedback as the hallmark of effective teaching. The instinctual disappointment from contradictory or constructive feedback can be tempered by the reminder that our primary goal in clinical education is coaching that challenges students to reach beyond their comfort zone to improve future clinical performance.⁹ As early educators, it is tempting to over-emphasize positive learner satisfaction in lieu of student growth. This year has taught us to appreciate the

teachers we have had that were more interested in our growth than our satisfaction.⁵

When Students Struggle, There is More to Teach Than Just the Answer

Some of my biggest challenges while teaching are the blank stares and lingering silence when I ask a difficult question. During a memorable teaching session, I asked a question about the relationship of thyroid disease and prolactin which was followed by silence. As I prepared to chime in with a rescue, a student reluctantly shared their understanding of pituitary and thyroid physiology. While a few misconceptions remained, a willingness to share and learn from their errors reinforced an important lesson: in a safe learning environment, struggle can be a venue for both new knowledge acquisition and the development of a growth mindset.

Psychological safety, or comfort expressing one's thoughts and taking risks without fear of embarrassment, is essential to maximizing learning.¹⁰ Clinical teachers who create a psychologically safe learning environment can ensure that students feel comfortable to give honest answers, and more importantly, to communicate their gaps in knowledge.⁸ Mistakes and challenges can then be used as opportunities to learn rather than opportunities for embarrassment and shame, thereby promoting the development of a growth mindset.¹¹ When a clinical educator praises a struggling learner's willingness to be vulnerable, it reinforces a crucial step in their learning as they grow in response to mistakes. It further presents an opportunity for educators to share their own failures and model communicating "I don't know" when faced with clinical uncertainty. By valuing psychological safety, educators help to promote development of trainees who are willing to explain their clinical reasoning, admit their uncertainties, and seek help when they need it.¹²

Facilitating Learner Independent Thinking Promotes Future Autonomy

"In a patient with diabetic ketoacidosis, how do you know what to start first- the fluids, insulin, or potassium?" Excited about this relevant question from a student, I had to stop myself from answering too quickly. In an attempt to empower the learners, I reflected the question back to the group before answering. The group began to link the effect insulin has on potassium while answering their own question. Autonomy is a buzzword in medical education, and as a medical student who learns best from the "do it yourself" mantra, I frequently ponder -- how can we promote development of student autonomy?"

As a learner in the workplace, it can be tempting to just blend in, do as you're told, and assume you'll learn simply through exposure. However, as students ourselves, we often learn the most when we are pushed to propose clinical decisions before receiving feedback on these decisions.¹³ Since students are not responsible for providing direct patient care, their autonomy is initially fostered through their thought processes rather than actions. Autonomy is important in the development of learners because it is a core component of building intrinsic

motivation according to the Self Determination Theory. This theory describes the development of intrinsic motivation as dependent upon three unique needs: autonomy, competency, and relatedness.¹⁴ Medical educators can begin to cultivate this sense of autonomy by encouraging independent thinking and engagement through agentic ownership of learning. Promoting the development of autonomy through independent thinking helps students to self-identify what they do and do not yet know.¹³ When a learner asks how we would manage a patient, we can ask the student to verbalize or document their thoughts on this question prior to discussing with them. As educators, our goal is to help students feel empowered to think and seek answers for themselves even if they are not making the final decisions. The more that clinical educators can ask learners to develop ownership in how they think about patient care, the more prepared medical students will be for future autonomy as residents.¹⁴

Conclusion

Medical educators aim to create a safe and positive learning environment through which they can facilitate student development of clinical reasoning, autonomy, and the growth mindset. These six lessons present an opportunity for medical educators to reflect on their teaching pedagogy through the lens of medical students who are near-peers to the students they teach. This unique lens, both from the student and teacher perspective, offers tips for engaging learners in the clinical environment based on our experiences learning as students and teaching our peers. We also offer suggestions for creating a safe learning environment by fostering student growth, developing independent thinking, and empowering learners to seek help when it's needed. We hope these teaching takeaways will further enrich the learning environment for both educators and learners.

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