Psychiatry
UNIVERSITY OF TORONTO

Temerty Medicine

Teacher tip sheet: Adaptive Expertise, Competence and Wellness: How to Support Productive Struggle in Residency

Productive struggle is a learning strategy that helps trainees learn from their mistakes. Productive struggle (or failure) can cultivate salience that leads to conceptual understanding, and supports development of adaptive expert capabilities.(1) Healthcare requires physicians to be adaptive experts – to have a routine and efficient solution for simple problems, and to recognize when that efficient solution will be inadequate (for patients with more complex or ambiguous problems).(2) Adaptive experts can problem-define and problem-solve simultaneously.

Adaptive expert abilities, including our own strategies for attaining competence, are closely related to physician wellbeing. Part of physician wellbeing is the ability to feel self-efficacious in our work, and to find meaning. Modeling our own approach as teachers during moments of ambiguity and struggle is important learning for residents.(3)

As teachers, we can support adaptive expertise development by:

1. **Providing psychologically safe spaces to fail** (including opportunities to invite uncertainty). In this context, psychological safety specifically refers to conditions that support learning from failure. In medicine, safety to fail may require permission to "not know", and it can also mean giving a trainee opportunity to fail to generate the correct solution themselves.
2. **Failures open a window for guided discovery – "a time for telling"(4)** After a failure, a learner is optimally motivated and primed for learning from subsequent instruction or feedback.(5)
3. **Encourage learners to explain "why" to solidify conceptual knowledge.** In your teaching, linking a "why" answer to "what", helps solidify expertise.(6)
4. **Help learners see contrasting cases and meaningful variation:** "Both new consults you've seen this week had depression, how was the pregnant patient's management different?" or "How would you think about the case differently if she had a history of post-partum psychosis?" In this way, volume matters, but only when the variation is meaningful.

Practically, how do we do this in Psychiatry?

1. **Set expectations for learning (and teaching) at the beginning of the rotation:** "I don't expect you to meet competencies of this rotation on day 1; you are here to

learn, and part of that includes making mistakes, even failing." "I am here to help you make the most of those moments of struggle."

2. **Discuss learning goals with the resident.** Are there competencies that have been challenging in the past? How can you help them to meet these expectations? (What has worked previously, what hasn't)
3. **Discuss the role of assessment in learning (formative and summative)**: "EPAs are low stakes formative assessments – you are not meant to be competent on all of them; there will also be plenty other low stakes opportunities for learning." "Part of learning includes anticipating failures, so that you can be ready to learn from them."
4. **Talk about how you see your role as a teacher:**
    a. "I see my role as providing enough scaffolding, so that the task is developmentally appropriate to your stage of learning, and to titrate degree of novelty so that you can make connections for your own learning."
    b. "If at any time it feels like drinking from a fire hose, I'd want us to have a discussion, because that won't support your learning."
    c. "I also want to ensure you have enough independence, and responsibility, such that you can meaningfully learn from mistakes."
5. **Tailor your approach to the stage of training**:
    a. Novices prefer encouraging feedback: "I believe in you—this is a challenging case."
    b. More advanced residents may prefer more detailed and even more critical feedback: i.e. "To fine tune your interview with this kind of patient presentation, next time try …"
6. **Weather the storm together** – help your learner realize that your teaching relationship can tolerate bumps in the road. That you do not expect them to excel 100% of the time; (And the flip side, there may be moments or days where you too are not able to excel in teaching.) This is normal and expected.

References:

1. Steenhof N, Woods NN, Mylopoulos M. Exploring why we learn from productive failure: insights from the cognitive and learning sciences. Adv Health Sci Educ. 2020 Dec 1;25(5):1099–106.
2. Mylopoulos M, Woods NN. When I say … adaptive expertise. Med Educ. 2017;51(7):685–6.
3. Chaukos D, Genus S, Mylopoulos M. Uncertainty in the Clinic: the Importance of Adaptive Expertise for Dealing with Complexity. Acad Psychiatry. 2023 Aug 31;s40596-023-01849–8.
4. Schwartz DL, Bransford JD. A Time For Telling. Cogn Instr. 1998 Dec;16(4):475–5223.
5. Kapur M, Bielaczyc K. Designing for Productive Failure. J Learn Sci. 2012 Jan;21(1):45–83.
6. Mylopoulos M, Steenhof N, Kaushal A, Woods NN. Twelve tips for designing curricula that support the development of adaptive expertise. Med Teach. 2018 Aug 3;40(8):850–4.