Getting Promoted: Examples from my Tenure Packet
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When I prepared my packet, the Educator's Promotion Packet (EPP) was in a slightly different format. For the Domains, the External Review Initiative group has recommended no more than two pages per Domain example. However, these examples demonstrate a narrative approach to describe my activities.

Rationale/Methods

Example #1 [From Domain 1a: Teaching Activities]

According to Bloom's Taxonomy – and many other learning taxonomies – the highest level of learning is Create. Students rarely have an opportunity in their pre-clinical years to create something original. My goal was to give them an opportunity to investigate something new and to create an entire learning experience out of their newfound knowledge. It's a tired adage, but "see one, do one, teach one" has merit. Though the CRP had been introduced and practiced over the preceding three years, I wanted their experience to move beyond just the 'see' and occasionally 'do.' They also tend to see the same diseases, albeit with increasing detail: hyperthyroidism, ruminal acidosis, hepatic lipidosis. To really try their hand at 'doing' it, they needed something fresh in order to truly put the Clinical Reasoning Process into action. The 'do' in this exercise involved both the creation and the workup. The other aspect of the exercise is 'teach,' an opportunity rarely afforded the students, despite the fact that they will spend their careers teaching staff, colleagues, and clients. Thus, active learning, by creating and doing and teaching, was the impetus for the development of this exercise.

Example #2 [From Domain 5: Curricular and Program Development]

Expert clinicians utilize various strategies, such as pattern recognition and hypothetical-deductive processes, to solve cases. For years instructors assumed these skills were attained only with years of experience and were, therefore, unteachable. More recent research suggests that clinical reasoning skills must be taught and practiced, just as one learns to play the piano or ski.[1] These skills can be difficult to teach, but not impossible; students *can* be taught problem-solving by using a deliberate process which they practice.[2,3] As a result, their progression from novice clinician to expert clinician can progress more quickly and prepare them to capitalize on the experience they receive in their clinical rotations. The goal of our program was to introduce a systematic problem-solving technique, called the Clinical Reasoning Process (CRP), early in the veterinary program to better prepare students for the application and integration of knowledge necessary for effective patient management. We also designed opportunities to revisit the concepts and to practice them each year of the curriculum.

Outcomes

### Example #1 [Domain 1a: Teaching Activities]

Students generally like this exercise with a few exceptions. During the competition itself, students appear engaged – laughing at the 'clients' they are interviewing, discussing results they've just received from the 'lab,' and working on their differential lists. I have elicited student feedback about several aspects of the assignment to guide me with future improvements.

Question: I learned the most from trying to figure out the opposing team's case.

| 2016 | 2015 | 2014 |

■ Strongly Agree ■ Agree ■ Neutral ■ Disagree ■ Strongly Disagree
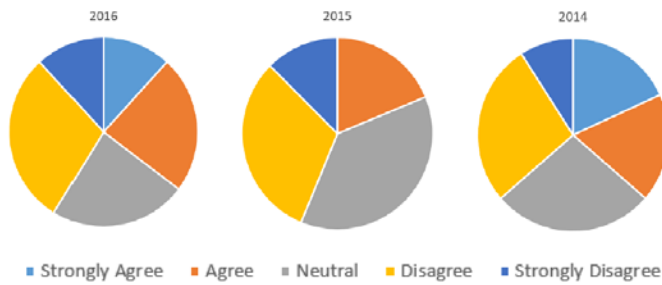
Question: I learned the most from researching my own case.*

| 2016 | 2015 | 2014 |

■ Strongly Agree ■ Agree ■ Neutral ■ Disagree ■ Strongly Disagree
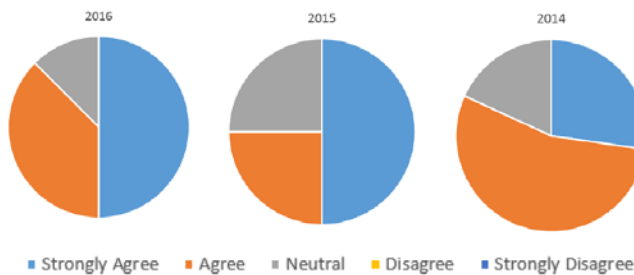
*None of the student responded with "Disagree" or "Strongly Disagree"

Based on these results, students most valued the research aspect of the project. The vast majority thought that both researching the case and working up the unknown case were fun. Interestingly, some students wanted to just receive this information in another lecture. Generally, though, they have offered good ideas to streamline the write-up and enhance the experience. Many asked to see write-ups for the other cases so they can learn about more than just two diseases.

Example #2: From Domain 5: Curriculum and Program Development

In 2014, faculty reported that 94% of entering seniors are adequately, well-prepared, or very well-prepared for clinics. By graduation, that percentage increased to 97% (there is, unfortunately, no data prior to that date). Faculty also rated students' clinical reasoning scores as 5.47 out of 7. However, the students themselves reported their clinical reasoning skills as 4.83 of 7. Though it's possible that the students are truly less prepared to problem-solve, it is more likely students are recognizing that preparedness requires not only a solid knowledge base, but good clinical reasoning skills. When I ask students during our Internal Medicine Service what they would like to focus on during their block on medicine, up to 45% of students reference clinical reasoning. Prior to the introduction of clinical reasoning program, no student recognized clinical reasoning as a skill to be practiced. I spearheaded an effort to introduce clinical reasoning, in the form of a prescriptive process,[4] into the curriculum. I was given two hours in a freshman year seminar course. I now have 13 hours in four different semesters, and additional faculty in my department reinforce the concepts in their own lectures and clinics. A faculty member from another department has introduced the process in his graduate neuroanatomy course.

Reflection

Example #1 [From Domain 5: Curricular and Program Development]

Transforming an idea into a concrete, substantial program within the curriculum was one of my most rewarding career experiences. My initial instincts about how deeper learning occurs were based on my personal experience as an undergraduate at MIT, where problem-solving trumped knowledge base. But instincts don't count when you're trying to justify an entire program of inquiry. When the Clinical Reasoning Committee first embarked on fact-finding for this project, I was embarrassed to discover a wealth of literature on clinical reasoning that I had not looked for. The embarrassment faded, however, when I realized that we didn't have to reinvent the wheel as I had expected. The evidence for developing clinical reasoning skills in our students was laid out for us. The challenge came in developing the material, and doing it right.

But the challenge of developing good content was rivaled by revising it and assessing it. Unlike a single teaching encounter, a revision in a multi-year program has long-term implications. When we moved material from the first year to the second year, we disconnected the flow of content. I learned to justify my changes by looking to the literature for better ways to foster clinical reasoning skills. That exercise of 'justifying' reminded me of what I was asking my students to do: "Justify your hypothesis." It was hard. Sometimes the teacher becomes the learner.

My other lesson was harder. Students don't always welcome change. Because I was passionate about small animal internal medicine, and because students saw value in that knowledge, they responded well to my passion and my teaching – at least, in my typical lectures and student interactions. But they did not see the need to learn Clinical Reasoning in the beginning. The general consensus in student evaluations was, "I know how to problem-solve already! Why are we wasting time doing this?" I felt deflated. I was passionate about this, too, so why didn't my typical teaching style work? This project forced me to reassess my role as a teacher, something I explored in a graduate education course I took on my own time. The 'sage on the stage' only appears sometimes these days, as I am now keenly aware that clinical reasoning skills are best developed when students try out the process and receive feedback. I continue to keep this in mind as we start another revision cycle in 2017.

Example #2 [From Domain 5: Curricular and Program Development]

Evolution of the Exercise

(2012) Year one was a kerfuffle. Based on student feedback, they were unsure of what was expected. Their lack of direction was also evident in the wide range of quality and depth in their products. The time I had allotted – one lecture hour – was not enough. They were frustrated that they had to rush through their workup and/or their case presentations. A few students complained that they had done the lion's share of the work, yet both partners received the same grade. Despite those hiccups, though, students felt challenged and excited about what they had accomplished, and they found the diseases interesting.

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(2013) I updated my template to include some additional directions about what I was expecting. I also realized that I wasn't having students document their workup process, which is what I most wanted to see. However, because the competition took place before finals, I had to limit the assignment. I created a short homework with questions about their problem lists and hypotheses. I required students to turn in their own write-up and asked that certain sections – history, problem list, and disease epidemiology and features – be their own work. I also increased the competition days to two – one cases presentation on each day – by replacing the course introduction and competition instructions day with a 15-minute, online PowerPoint recording.

(2014) The variability in the quality of the write-ups was still too high. In our communications course, Dr. Jane Shaw had introduced rubrics – not just empty Likert scales, but descriptive rubrics which define exactly what "Outstanding" means. I read more about how this can lead to better outcomes and deeper student learning.[1] Rubrics are also a way to provide more detailed feedback, an important factor because I was spending 45 minutes grading and providing feedback for each of 80 to 90 write-ups. It was not sustainable. I also now had students complaining that they shouldn't have to do individual write-ups when they created the project together.

(2015) I upgraded the rubric based on specific sections of variability in the write-ups. I realized that my templates needed to incorporate features that I laid out in the rubric itself. My templates for both the write-up and the homework assignment became more detailed to reflect how I would be grading them. To save myself from burnout, I reversed my requirement of one write-up per student and had each team submit only one.

(Future changes) I have several new ideas for how to increase student learning and better assess outcomes with respect to the CRP. Assessment is the biggest challenge because a pre- and post-test cannot include the content of the cases: students haven't learned anything about the diseases prior to the competition. Each student only sees two cases, but there are ten total. One possibility is to focus on some aspect of the CRP in a section exam in the course and then explicitly retest during the Capstone 3 exam. I would also like to create a sample write-up. I have not done it previously because there are only a few robust diseases I can use and I want students to come up with differential diagnoses for common problems on their own. I have considered writing up a human medicine case which may provide enough variety to prevent copying.