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Narrative Reflection, Winter 2020
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In the Winter 2020 term, I had courses which gave me chances both to improve on earlier courses and to invent new materials and methods for others. MTH 60 and MTH 241 are courses I have taught in the past, so this was a great opportunity to improve based upon feedback received for past sections. On the other hand, MTH 244 and MTH 252 were new experiences for me. Fortunately, for both of these courses, I had pre-requisite courses to build upon.

A defining event occurred at the end of this term: the beginning of a pandemic. We shall see what this holds for next term...

What Went Well

MTH 241: Half the written feedback was positive, which is an improvement over the previous term. Being able to fine tune my lectures from last year, that the flow of the course improved overall. In being more confident in the delivery of course content, I felt that I was able to better connect with students when it came to working together in groups.

MTH 244: I must first let the reader know that this course had only three students. This being said, my reviews for this term were very positive.

I have put quite a bit of work into redesigning this course in both rewriting the course outline and creating materials for students. This includes creating assignments and writing software that is easy to use.

What I am most proud of this term is the collaborative atmosphere and the sense community we were able to build as we learned more advanced ideas from statistics. Students were prepared to present problem solutions, and when students struggled, others in the class helped to fill the gap.

The group project they completed was a resounding success in my mind. These students took the knowledge they acquired from the course and answered a question of interest to them by using good data-collection and statistical practices. Their results were delivered in well-written report (available under "Examples of Student Work" in my teaching portfolio), and as a part of the culminating experience, they volunteered to present their results at the Winter 2020 STEM colloquium.

I could not have asked for a better group!

MTH 252: Acting upon student both formal and informal suggestions from MTH 251, I decided to include a lecture component to this course. Students still had plenty of opportunity to work at the board, but only after covering the material in class. This change seemed to be well received. In my overall experience, blending lecture and collaborative work has worked the best for me, so it is no surprise to me that students preferred this over the flipped model.

What Needs to Improve

MTH 60: Despite my efforts to be more present in the form of more frequent emails and communication, attendance steadily dwindled as the term progressed. If I teach this course again using the ALEKS-based format, I will need to yet again redouble my efforts to stay on top of communication with students.

Based my experience and the experience of my colleagues during both this term and the previous term I taught this course, I believe this course would be more successful if delivered in a different format.

MTH 241: Despite changing the lengths of assignments, I still get the sense, based upon both formal and informal feedback, that students are overwhelmed by the homework.

For the future I am strongly considering other possibilities for homework. One option I am considering is simply doing what I have been doing in my Calculus 251/252/253 series: grading written work. As time consuming as this may be, I have had some success with my MTH 251/252/253 courses. Students seem to appreciate very much the personalized feedback on their work. Another option is to use myOpenMath (a free and open online homework platform for mathematics: `https://myopenmath.com`) which addresses all the complaints students have been consistently making: 1) Students can save their progress on assignments, 2) there are resources embedded in the questions to help students with specific points, and 3) there are other more general resources like videos and demonstrations for students who need more help.

Both this term and in the past, students have mentioned that it would be nice to have the worked-out examples contained in the lecture notes themselves. As explained an earlier narrative evaluation, the reason I don't include solutions in the lecture notes is so that students will actually take notes in class. Furthermore, I don't want to simply read a solution off to the class; I would rather walk students through the reasoning of a solution by writing it out step by step. One way I am considering addressing this disconnect is to create a set of videos which students can watch later if their in-class notes are not sufficient for completing the homework. In doing this, it would be my hope that students could actually take minimal notes in class to better follow the reasoning of the lecture with the idea that if necessary they could review the video and take better notes the second time around when watching the video.

MTH 244: Due to the small number of students in this class, it is difficult to ascertain from feedback what improvements should be made. Of course, there is always room for improvement!

MTH 252: From the written feedback, it is clear that students disliked how much weight each individual exam question had on their overall course grade. One student suggested nice solution to the problem: so that each question isn't weighted so heavily, the number of questions could be increased with more time by having students take the exam in the testing center. If this were an option, I would likely act upon this suggestion.

For the future, I will likely find a way to incorporate three exams into the term rather than

simply a midterm and a final. I would also like to incorporate more questions into the exams which can quickly assess general knowledge. These will likely include short answer and true/false types of questions. Both of the above would be yet another to way to make sure individual questions don't carry too much weight.

What Lies Ahead

A big change I will likely make to my MTH 241 course is to handle homework differently. I am seriously considering using either written homework as I have been with my STEM calculus students, or using an online homework system different from the one I have been using.

Another consideration I need to make is the weight of questions on exams in my STEM calculus courses. I will likely add a general knowledge component of short-answer and true/false questions in order to separately and quickly assess general knowledge. This will take some of the weight off of the more substantial textbook problems which require more time to complete.

As the reader knows quite well, this term ended just as the pandemic began. How this will affect how we do things next term is anybody's guess. In some ways, thinking so concretely about the future feels strange given the uncertainty of the present situation and what will happen next term.