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Teaching Reflection, Spring 2020

I have taken some time to process the courses I taught and their evaluations from my second semester teaching at SUNY Cortland in the Spring of 2020. It was an unprecedented semester due to the COVID-19 pandemic forcing classes to go online after spring break. I implemented some changes and tried some methods of assessment that I hadn't tried before. I have also never taught an online class before this semester, so that was a brand new experience to me.

First, I will discuss my two sections of Linear Algebra. I first taught this class last semester, and I saw improvement in the evaluation scores. I also collected mid-semester evaluations from the students right before spring break that were positive. The first major change from the previous semester is that instead of largely lecturing at the board, I created fill-in-the-blank style notes for each lesson. These allowed me to cover material more quickly, since the students don't have to copy down as many notes as they would if I were only lecturing at the board. I would project the notes using the doc-cam and fill them in while giving further explanation for the students. This was especially useful for the examples, as writing down large matrices can be time consuming, so this allowed me to jump right in to explaining the math instead of spending precious minutes on set up. Peppered throughout the notes and at the end of each section are exercises that I have the students get in small groups and work through. This made for nice breaks in the class and kept everyone engaged, and the guided notes gave me more time in class for group work. I think it also provided much needed practice before the homework. The evaluations support that these notes were helpful for most students, as "effective presentation style" had a median score of 4 and 4.5. There are also several comments expressing positive feelings towards the notes. Overall, the notes seem to have been a success for a class at this level, and I will use them again the next time I teach this course.

This semester, I implemented two new assessment methods in Linear algebra. The first was something I called "Definition and Theorem Checks". These were meant to combat something I was dissatisfied with last semester, which was that students didn't display appropriate familiarity with the vocabulary terms and major theorems from the course. At the beginning of each week I would give the students a list of 5 terms or theorems, and a week later they would be asked to produce the definition of one of the terms from memory. It is unclear whether these assessments were useful. I received lukewarm comments about them in the mid-semester evaluations. No one addressed them in the CTEs. I was forced to stop doing these when we transitioned to online classes because I couldn't figure out a way to implement them as I had been. I think they are worth trying again. The other new assessment that I implement were Reading Reflections. Before class each day, I would require the students to read a section in the book and answer two questions about it, and then for one question or comment they had on the reading. From the feedback on the CTEs and mid-semester evaluations, the students did not like completing these. At least two people complained that the book was too confusing and was actually hindering their learning. Others claimed that the reading quizzes in addition to the homework resulted in too much weekly work to keep up with. I don't think I will use this form of assessment again, at least not in this course.

After spring break, the course transitioned to an online course. I recorded videos of the lecture I would have performed and uploaded them for students to see. I kept up with the guided notes and the reading quizzes, but homework and the final two exams took place only through MyMathLab. Students didn't really complain about this, I think they find the MyMathLab work easier than written work. I didn't get to assess their deep understanding and conceptual topics as much as I would have with written assignments or in-person exams. The evaluations support that the transition was successful given the circumstances. Overall, I am quite pleased with the execution of the course and the evaluations I received, with overall average medians of 4.4 and 4.65.

Now, I will reflect on my Algebraic Structures course. This was my first time teaching the course and the highest level math course that I have taught. I was clearly too ambitious with the topics I thought I could cover in this course. I had to remove several sections from my plan after the first week, as it became clear that I needed to slow down and focus more time on foundational material. I decided at the outset that I would mostly use class time to lecture.

There were infrequent days when I brought in worksheets or review sheets and had the students work in small groups. I thought that this was working as well as it could, and the mid-semester evaluations supported that the students were more or less satisfied with the course design. However, once the course went online and I started recording lectures, the course became much, much more difficult. I also can see that by the end of the course, less than half of the class were actively keeping up with the videos. The last video only had 3 views out of a class of 13, and the average number of views was about 9 out of 13 for the last 3 weeks. This course was never supposed to be given online, and the presentation style I landed on was not effective for students at this level. The median of 3.0 on "effective style of presentation" on the CTEs certainly reflects this. With the success of the guided notes in linear algebra, I will try making those for this course next semester.

Homework was worth the bulk of the grade in the course. As this is a writing intensive course, I expected the students to write formal proofs and turn in polished work. Each week, I would give approximately six problems to be completed. At least one of these problems was always a formal proof, and at least half were more computational in nature. These problems came either from the book or were similar to examples from class. Students struggled with the assignments, especially once the course went online. Before the transition, I found evidence of plagiarism by two of the students. After the transition, I found evidence of plagiarism from online sources by five additional students and was forced to submit an academic integrity report for one student that continued to plagiarize even after a warning. The students expressed frustration at the difficulty of the assignments and the strict grading in the CTEs, even though I from the outset announced I would drop the three lowest scores. The CTEs reflect that the students thought the assignments were too hard, with a median score of 3.0 on the "length of course assignments" question. I think the implementation of mastery grading, or providing opportunities to correct work and retry certain problems could help this in the future. I had students in my office hours each week talking through the material, and I think that was extremely helpful for them. The CTE average score of 4.15 (median 4) for the "availability" of the instructor is a result of so many people attending office hours.

I also implemented Reading Reflections and Definition and Theorem Checks in this course. While I think the reading reflections went over a bit better in this course, It's hard to gauge how useful they were to the students. The actual submitted reflections rarely contained questions that

were interesting or important enough to be addressed in class. The definition and theorem checks were received warmly in the mid-semester evaluations, but aren't mentioned on the CTEs. I suspect this is because I had to stop doing them once the class transitioned online. I will try these again next semester. Finally, I should address the exams. I decided to make the exams worth considerably less than I do in lower-level classes to emphasize the importance of the homework. The in-class exams went well, with median scores in the 70% range. Once I moved online, I still gave written exams with a time limit. The scores dropped marginally, however there was evidence of plagiarism on these exams. I was forced to give two students 0s on a particular exam for working together. I cancelled the final exam and instead allowed students to take a new exam to potentially replace a previous exam. Only three students accepted this offer and none scored well enough to replace a previous exam. If I give written exams for an online course in the future, I will need to find a better way to prevent plagiarism.

Overall, the CTE scores for Algebraic Structures, though not terrible given the circumstances of the pandemic, were below my personal standards with an overall average median of 3.7. The transition to online had an extremely negative affect on the course. An advanced, theoretical math course like this really shouldn't be given in an online environment unless there can be a lot of individual discussion, group discussion, and opportunities to ask questions. These are things I will have to be mindful of in the future if I ever attempt to teach a proof-based course online again.