Sara, Raisa
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Self-Evaluation, Classroom Teaching Experience, and TAR Reflection

1. **What did you learn by conducting the teaching session? From the students? From your peers? From your self-evaluation?**

   I have taught before and I found that with every class I teach I reevaluate my prior beliefs about teaching practices. Overtime, I found myself focusing more on the students needs and try to organize the lecture that best communicates the material to the students.
   Students feedbacks have been vital in my growth as a teacher. I find them to be more attentive and responsive if I structure the class keeping the students in mind and incorporate more active learning methods.
   My peers were also helpful in pointing out the positives of my approach and suggested potential avenues for improvement. For example, they made the keen observation that I repeated the same concepts multiple times allowing students ample opportunity to absorb the information. They also appreciated my use of multiple examples and the structure of my lecture.
   I learned a few things through self-refection and feedbacks from students. Students appreciate if they are clear at the beginning of the class what they should expect to learn from the class. They appreciate if you go through the material slowly and clearly and provide an environment for them to ask questions and respond to those questions. I have also learned to take a step back and focus on the most important things you want them to learn from class. You do not need to solve each and every problem in class. Our job is teaching them to learn. If they understand the basic and core concepts well, they should be able to work on any extension of those concepts by themselves.

2. **How did you prepare for the teaching session?**

   First, I read the material that I would cover in class and identified the most important concepts that I need to cover. I began by laying out those concepts in the form of slides and worked out the structure of the lecture. Then I looked for examples to aid in the comprehension of those concepts and I designed it in a way that would allow the students to solve the problem in class with me.
   I practiced the lecture out loud to see if the transition from one concept to the other is natural and anticipated potential questions from students. I also planned what questions I want to ask the students during class.
   I incorporated these changes and finally practiced to see if I will be able to cover all material within class time.

3. How did you deliver the teaching session? (How did it go?)

I was able to deliver the teaching session enthusiastically and was able to finish everything in time. I started by giving a brief summary of what would be covered in class that day and provided a brief review of the main concepts. I then moved on to solving an exercise using the concepts learned and asked the students to solve the problem with me. I picked students randomly in class and asked questions regarding the solution. They were generally very attentive and responsive to questions. At the end of the class I provided a brief review of everything we learned that day.

4. Considering how the teaching session went, what would you do differently and why?

For the session I taught, I wouldn't do anything differently. However, if there were more time, I would have liked to incorporate some more interactive teaching methods using some form of group activity. For example, I would have provided them with a case study and encouraged discussion and debate on the topic. This would have allowed them to think about the content taught in class more critically and introduce them to research related to the topic.

5. How has the teaching experience assisted in preparing you to become a future faculty member?

The teaching experience provided me with an opportunity to apply the different teaching techniques we learned in the STEM teaching class. For example, the idea of setting learning goals is taken as an inherent characteristic of the lecture. However, during the teaching session I found how useful it is to clearly lay out the main learning outcomes from the class at the beginning of the session. It sets the expectation of the students and helps them be more attentive in class. Further, from the sessions on active learning, I learned that encouraging students' involvement in class e.g through asking questions can help them understand the material better. I remember one of my instructors from the class shared one of his own techniques where he used to put students in group and them direct his questions during class to the group, since some students are uncomfortable if they are singled out in class. I found that to be a very useful way to make the students more comfortable and responsive to questions asked during class. I was also able to run my TAR experiment where I found that encouraging students to review the material before class helps them do slightly better in their assessment on the material as well as they also feel that they were able to understand the material better.
All in all, through the teaching experience, I was able to understand the usefulness of the techniques learned in class as well as it inspired me to delve more into the research on pedagogy and apply them in class.

6. **List College Classroom Teaching (ENGR, GEOS, SCEN 677) resources (e.g., lecture topics, in class activities, handouts) that you found particularly useful in the planning, development and/or delivery of your classroom teaching session. Briefly describe the benefit of each resource and how it was used. If no resources were found useful, please respond, "I found no class resources useful", and then list what resources would have been useful.**

   I found all the resources provided during this course very useful. The lectures and class activities gave me practical examples of how good instructors conduct themselves. I was able to observe the way the instructors taught and have adopted their styles and techniques that could enhance my current teaching methods.
   I found the sessions on course design and teaching strategies particularly useful. From the course design session, I learned to think more carefully about the learnings goals of a course with the aid of the Bloom's Taxonomy. It helped me take into account the level of the course as well as have the students in mind while choosing the content. I was also able to learn how important feedback is in improving your teaching style and the different ways in which continuous feedback can be incorporated into the course.
   From the teaching strategies sessions, I found the chapter by Brookfield (2006) very useful in understanding the basic structure of an effective class. I found how a variety of teaching methods can be incorporated to communicate the material well and keep the students interested in the topic throughout the class. Particularly, I found the videos on active learning useful and it encouraged me to look into more resources that discusses different ways of fostering an active learning environment.
   Finally, I realize the effort that a teacher puts into making their class effective and interesting. It is not enough for an instructor to just be knowledgeable in the topic they are teaching. They have to put in a lot of time and hard work to make their class more student centric.

7. **In what ways did writing a philosophy of teaching statement help you to prepare for your classroom teaching session?**

   The teaching statement compelled me to look back at all of my teaching experiences so far and critically think about the way I have conducted those sessions. It allowed me to learn from my own experience as to what worked and what did not work. I found myself considering all the pros and cons from my previous experience as well as adopting the new techniques I learned from the STEM teaching class when I was preparing for my teaching session. I was more confident and enthusiastic about the material I was teaching as well as spent a lot of time on designing the lesson plan. I also incorporated active learning through involving the students in class to solve problem exercises with me and encouraging them to ask questions. The teaching statement helped me realize how important student involvement in class is in helping them learn the material.

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Teaching-as-Research Plan

State your research question:

Does providing students with a summary about the material that will be reviewed in class help them follow the material better and improve their subsequent performance?

State your hypothesis:

A quick review of the main concepts before coming to class will familiarize the students with the topic and that will help them better follow the class and improve their performance in exam.

8. Was your hypothesis correct? How do you know? What evidence do you have for or against your hypothesis? (Analysis)

Overall, I find some suggestive evidence that the students who received an email with a summarized note of the lecture and were encouraged to read it, are more likely to review some material before coming to class, are more likely to score slightly higher and are also more likely to feel that they were able to follow and understand the material in class well.

To test my hypothesis, I randomly provided the summary notes to half of the class through email that day before the actual class. Using this random assignment as my treatment I was able to test a following questions:

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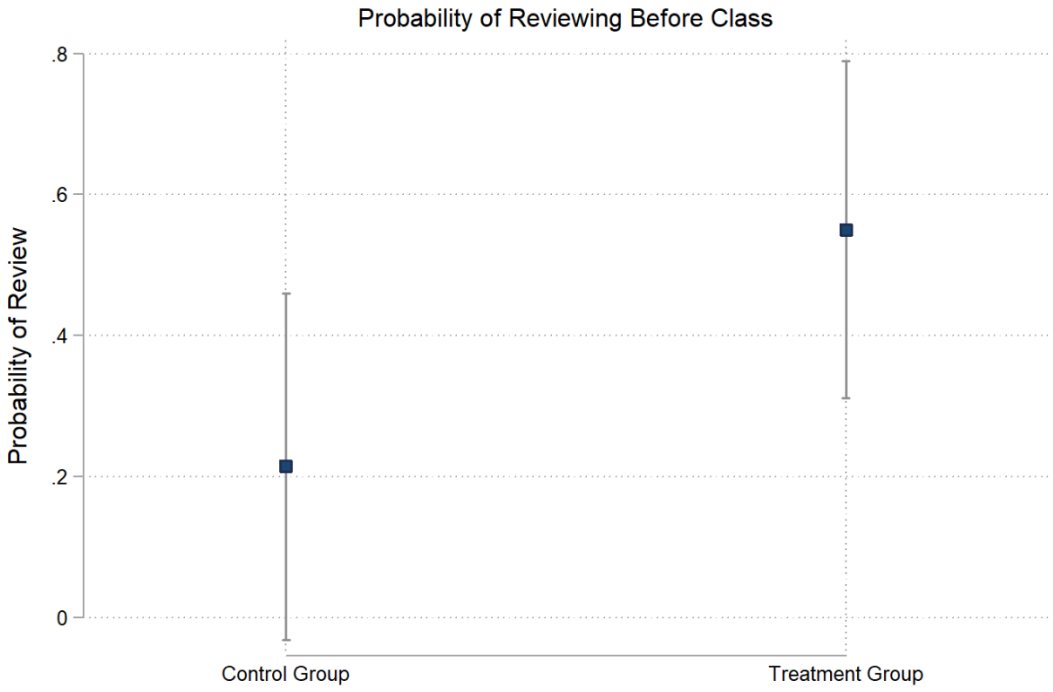
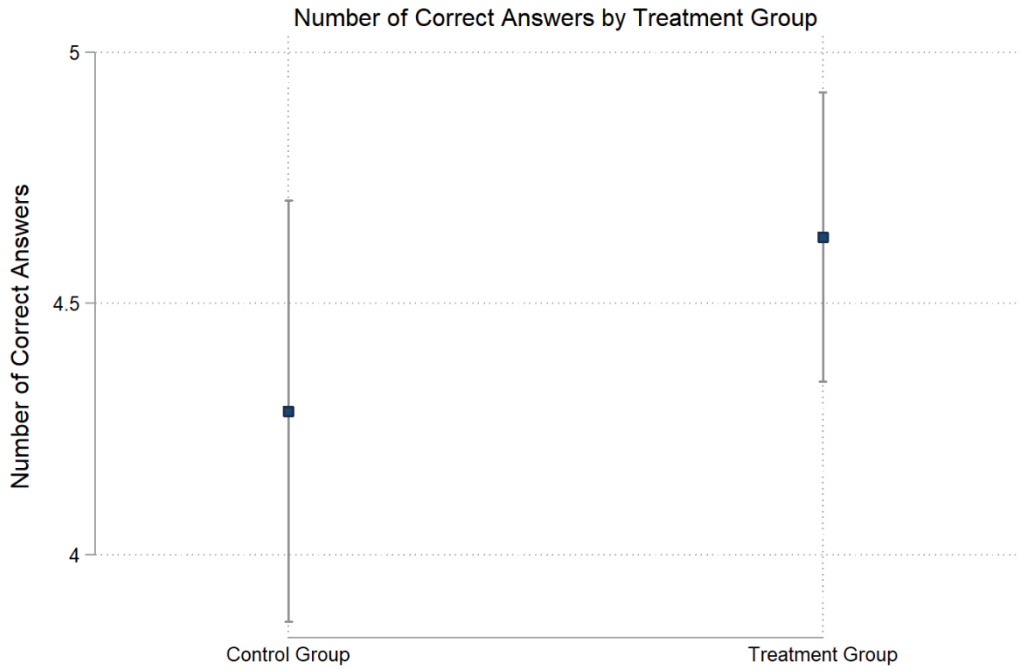
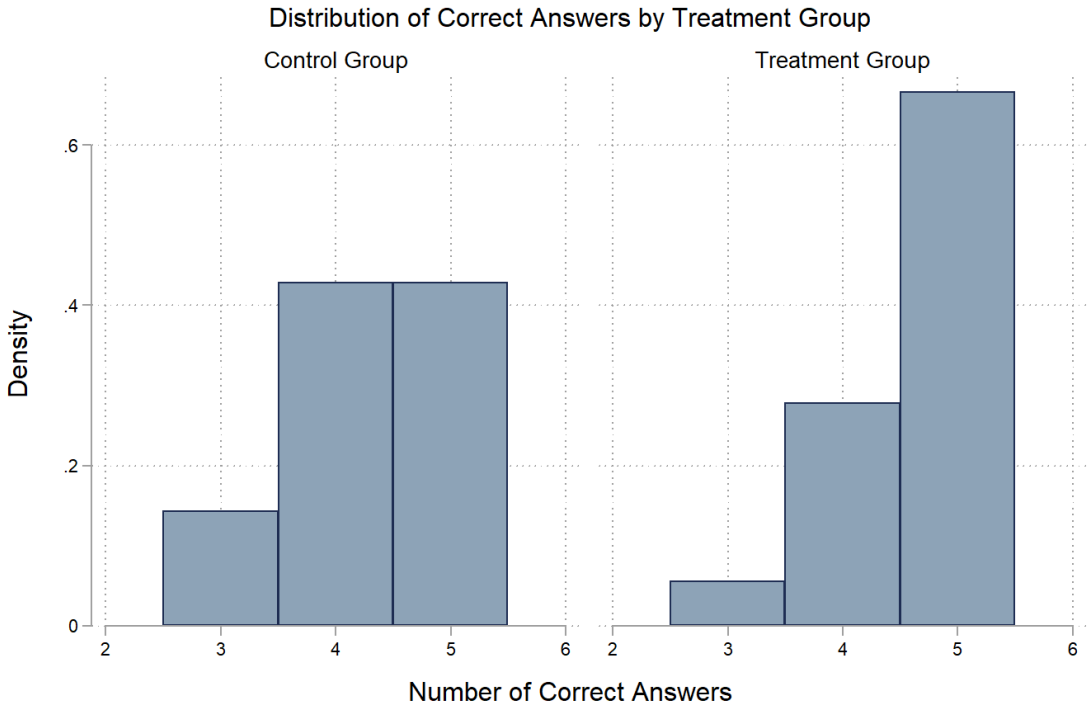
1. *Does providing treatment induces students to review some form of material before class?*



From the graph above, we see that, providing students with a brief summary makes them more likely to review the material before coming to class.

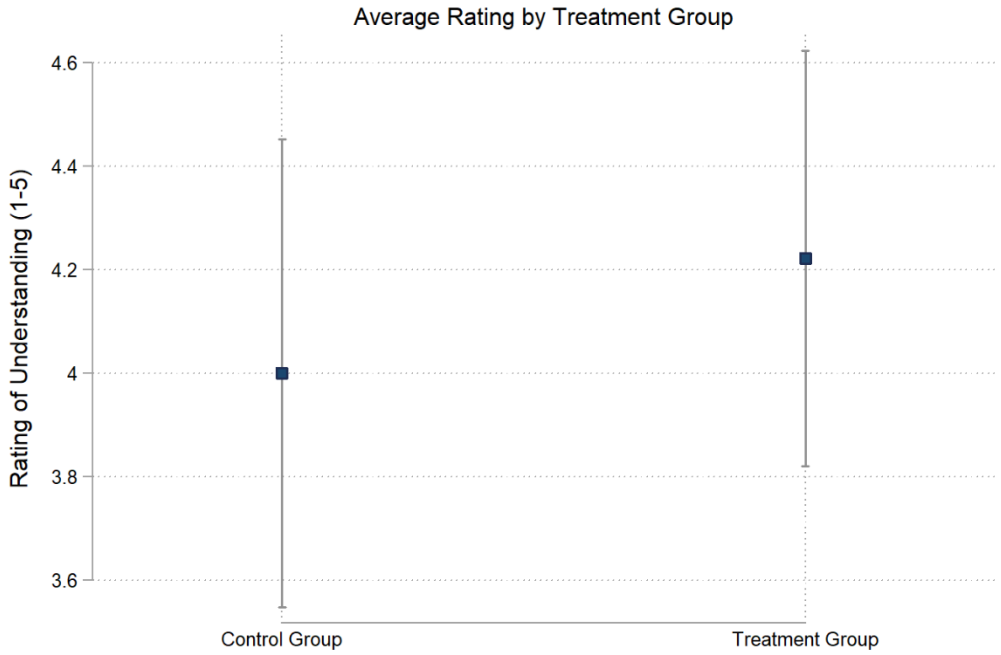
2. Does the treatment help them do better in quiz?

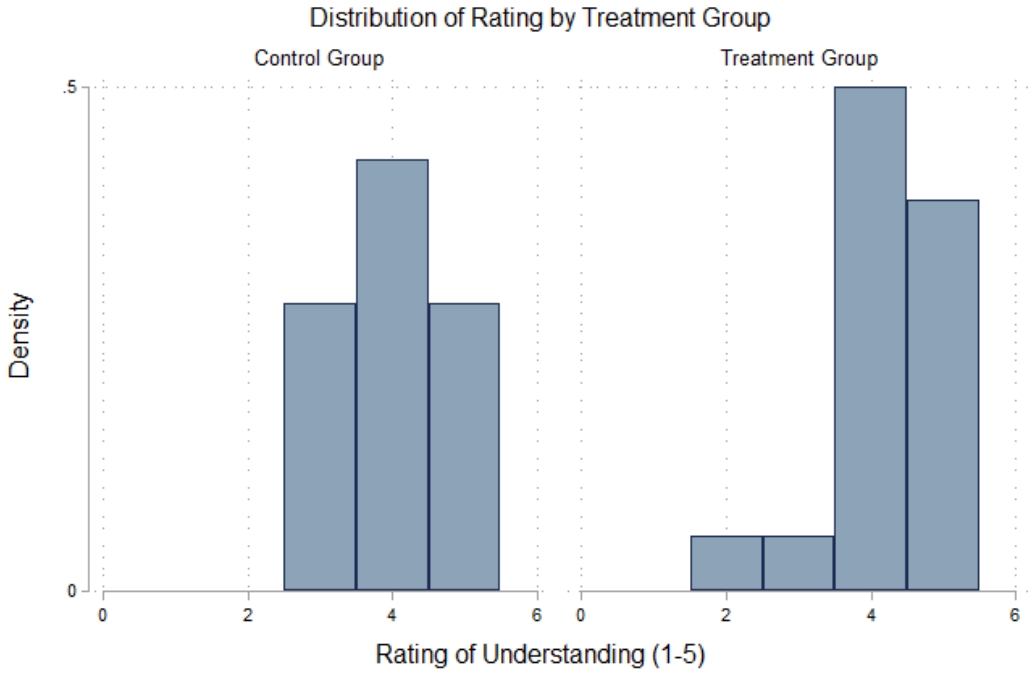




From the graph above, we see that the groups that received the summarized notes with encouragement to read, scores slightly more on average and also is more likely to get all answers correct.

3. *Does the treatment improve their self-reported understanding of the material?*





The students are asked how much they were able to follow and understand the material and were asked to rate their level of understanding on a rate of 1 to 5. 1 mean "Not at all" and 5 means "Completely". The students in the treatment group scores slightly higher on average and are also more likely to rate 4 "Quite a bit" and 5 "Completely" compared to the control group.

9. Based on your evidence, what was effective about your teaching-as-research plan? What needs to be improved?

The evidence from this experiment shows the positive effects of encouraging students to review the material before coming to class. Also, providing a summarized note may make students more likely to review compared to asking them to read the whole chapter or the lecture slides since that would take more of their time. Familiarity with the concepts and terms before coming to class helps them follow the material better and improves their performance during assessments.

The size of the sample used for this study is about 34 students which is very small to obtain any precise estimates from the experiment. Therefore, any evidence we draw from the study is only suggestive. Increasing the sample size may have provided me with more conclusive results from the experiment.