

## Lessons from First Online Teaching Experience after COVID-19 Regulations

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The COVID-19 pandemic pushed almost all US universities to make critical decisions, including transitioning to a distant learning system for at least the next several weeks. Many college instructors, including myself, experienced online teaching for the first time in their career. Here are four lessons I derived from my first online education experience for my “Research Design: Data Analysis” course at Columbia University.

**To begin with**, contrary to in-class education, it is extremely hard to catch the attention of the students through web-based instruction, hence instructors must find ways to increase their attention. Students will more easily get bored, and if they are bored, they will more easily get distracted by external factors in the environment they are in during lectures. One way to deal with this issue is bringing more real-world examples into the class discussions.

What did I do in this regard?

My first day of online instruction happened to be the same day as the planned midterm. Due to the uncertainties from COVID-19, I needed to postpone it. Since I disagree with the idea of starting a new topic prior to a midterm exam, I decided to come up with a new idea for content for the first online lecture. Given the fact that online lecture will be a new setting for students, I thought I should find a topic that would maximize students’ interest and teach them new concepts/methods that build on what they have learned so far. Considering all these factors, I decided to cover some data analysis on the latest corona virus dataset.

I showed them where they can find and download the latest COVID-19 datasets, how to clean data and transform it (from a country region format to a country format, for example), how to merge pandemic data with a global time series political science dataset (e.g., Quality of Government), how to analyze the combined dataset to compare countries in terms of the density of corona virus cases, how to examine the mortality rates across the world, and visualizing the results. I greatly enjoyed discussing such a timely topic and trying to help students attain data analysis skills on a real-world dataset. Students also liked learning how to examine COVID-19 data.

**Second**, students found the online lecture material slightly more difficult than the regular in-class lecture material. This was a surprise for me, as prior to the online lecture, I thought that the content I prepared was much shorter and easier than our regular class material. It seems that some students faced technical issues, including difficulty installing an R-package, while others had internet connection problems. Some students had hard time to simultaneously follow the online teaching screen and work on the statistical software screen. In the upcoming online lectures, I will consider these factors and try to make the material relatively less sophisticated.

**Third**, my teaching assistants were always attending my lectures in the classroom, but this time they played a vital role in the teaching. Online teaching of course prevents us from keeping eye contact with students. It is something I highly value in method related classes in which students may need to ask lots of questions but may shy away. Without eye contact, it is hard to get a feel for if they are able to follow the content. The good thing was that my two teaching assistants were in constant contact with the students via a chat window while I was going over the material. In fact, at the beginning of the lecture I coordinated with them and encouraged students to direct their questions to the teaching assistants via the chatroom. Then, the assistants would alert me if they thought a clarification should be made to the entire

class. This made it a more interactive platform. Next time, I will ask my teaching assistants to go over my lecture content in advance so that they can answer even more student questions.

**Finally**, my interaction with the students suggested that we, as instructors, need to carefully think about the structure of midterm exams that we originally designed to administer in-class but that now need to take place online. One possible strategy is replacing midterm exams with a homework assignment that students can complete over an extended period of time, versus on one given date and time. But this is not ideal for many classes, including mine, considering the existence of such similar assignments in the syllabus. In such a case, a timed online midterm exam may become a necessity. The issue then becomes academic integrity, namely preventing cheating. This is a critical issue, however, the precaution we develop should not hurt students who tend not to cheat even the setting is online. Given the level of anxiety and stress students potentially have, we should be even more clear, yet flexible, in our expectations about the new tests we employ during this transition period. Instructors should also note that students may be asked to sign academic integrity pledges prior to tests.

Additionally, instructors may think we should ask more difficult questions when the test is online, and hence, open book, rather than in-class closed book test. At this time, I believe students do not deserve any more difficulty, as they are already overwhelmed with many outside factors. In this regard, I am glad to see that Columbia University decided to transition from letter grade system into pass/fail grade system for Spring 2020.

To sum up, as we abruptly transition into online education, we should more frequently put ourselves into our students' shoes. In this respect, we should try to find better ways to attract their attention, consider the technical difficulties they may face during an online session, develop ways to make the teaching more interactive, adjust our academic expectations from students under these extraordinary circumstances, and get their feedback about our teaching more frequently.

In the long run, this whole process will have a serious impact on higher education, most importantly on the academic job market, as the top research universities experience distance education systems more and more. If this new system succeeds, even such top schools will consider incorporating online learning to their existing systems. Replacing physical classes with online classes will lead to a decrease in the required number of instructors per student. Hence the job market will become even more difficult to navigate for new Ph.D. graduates over the next several years. Nevertheless, experience in online teaching and developing creative online teaching methods may bring even more serious advantages to the new graduates in their job search.