Online Teaching: A Progress Report[∇]

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After a term (actually, a 14-week semester) navigating new forms of teaching, I thought about writing a little note-to-self collecting my experience and student feedback from teaching two BA courses. These courses (Applied Industrial Organization and Environmental Economics) are related but different in terms of objectives, methods, and assessment. In what follows, I describe things on a largely chronological basis.

Overview of the teaching strategy

Following guidance from above, teaching was asynchronous. This means to say, students should be allowed to follow the course even if they had responsibilities preventing them to be available at "lecture time" or if they had no access to relatively fast internet (Germany is still considered a laggard in that respect).

The course followed a hybrid strategy combining the standard course material (from textbook, slide decks, papers) with some new features. First, I added a voiceover to slide decks in order to provide more detail. From the students's viewpoint, this meant a recorded lecture without the interaction component, a point I am coming back to later.

Second, I have added podcasts or videos combined with scientific articles. The latter would play a big role towards the end of term in one of the courses with the aim of connecting theory (e.g., policy instruments used in environmental policy) with practice (e.g., an assessment of the US Clean Air Act).

Finally, I would hold weekly "live sessions" where we would touch base. My original aim was to have students preparing in advance and have substantial interaction in discussions to be held in the live sessions, where I would also delve into details, explore more advanced topics etc. However, this proved to be challenging for different reasons, from the lack of preparation to the novelty of the approach to personal challenges students were facing due to the pandemic. Thus, in practice live sessions were used to (1) ask about last-minute questions; (2) summarize what had been covered and further develop topics; (3) answer longer questions previously submitted; (4) ask how they were doing (not much feedback on the later during most of the course though).

The long – or technical -- questions students had should be submitted up to 24 hours before the live session so that I could both prepare myself and prepare a more detailed answer in written if required (think about detailing the solution to a mathematical problem).

For one of the courses (Environmental Economics), once the background topics were in place, I decided to rely on podcasts which I would connect to academic papers in order to have class discussions. To do so, I have relied on "Resources Radio", the excellent RFF podcasts (https://www.resourcesmag.org/resources-radio/). While there are several podcasts series out there, the RFF podcasts where much closer to what I wanted and fitted really well into the course structure and content.

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For the other course (Applied Industrial Organization), papers were already very much part of standard teaching and remained so, but I occasionally also relied on videos, e.g., on the rise of market concentration and mark-ups in the US and the EU.

Importantly, all material was posted one week in advance throughout the course, so students had enough time to prepare.

Checklist

Before the course starts

Prepare detailed syllabus, prepare and/or update all "old school" material, record some lectures, post materials for week #1, including a detailed README file;

Given the circumstances, the syllabus consisted of an academic side and a "humane side" which would both detail adjustments and reassure that we were going through this together, make explicit that student feedback was important and generally "opening the virtual door" to students.

The README file should be painstakingly explicit, detailing, e.g., the order in which each task is to be performed.

During the course

It is crucial to keep posting material one week in advance, including the weekly README files for guidance. Try to adjust based on any feedback, be it regarding the volume of work, sound quality, or deadlines.

During the live sessions, start by asking about last minute questions and finish asking open-ended questions about how students were coping with everything. While no one really opened their heart, I could get a sense of how their workload was to adjust the workload of my course. I found adjusting deadlines was something important; it was appreciated by students struggling with different courses, re-sits from the previous term etc. and relatively low-cost for the instructor (as long as they were not piling up at the final week of the course).

Importantly, remember to always emphasize two things: in the recordings, the importance of using pencil and paper to go through the tricky parts and make notes to oneself; in the live sessions, on the importance of structure, organization, and continuous effort to be able to cope with everything. Analogies with the need of football (soccer) players to practice before (as opposed to the night before) a tournament apparently helped.

The final week

On top of the above, I opened even more for feedback, and here is when I realized that it paid off; while things weren't perfect, here I really got the confirmation of my early impression that students realized how much work was put into the whole experience and how appreciative they were.

What we didn't do

Things that may be introduced in the future:

- Recording and live sessions with a graphic tablet? This would give me the flexibility of drawing graphs (quite important in some contexts) or do algebraic derivations more flexibly (but more likely to errors from doing things on the fly and less desirable than uploading a document in my view);
- Live sessions with camera? As the university was using some open source tools that had to comply with GDPR (e.g., BBB-BigBlueButton), my experience was that having many cameras made the connection very heavy, causing delays and disconnections. Thus, already in the first sessions, students complained about the sound quality and I switched off the video;
- Recordings with video? Not sure, as file sizes became unnecessarily larger;
- Run a live software session? Aiming at a more structured approach, I had recorded a tutorial and the solutions to empirical projects. On the one hand, it is less interactive and might go faster than desired. On the other hand, it allows students to go back and forth, less prone to errors, and better structured, which is important when there the live session is relatively short and used for other issues.

Random comments

More notes-to-self:

- Whenever possible, record your lectures standing and walking, even if you won't appear on video. I felt more energetic, used the same setup as in a "real lecture", including clicker. Adding a wireless headset to my teaching kit is definitely on my to-do list;
- Introduce pauses every now and then, it is easier than to slow down and makes the students pay attention. I felt that I tend to talk relatively fast and, if there are no questions asked, this may overwhelm the audience;
- Introduce pauses also when asking a question, so that students have to "change mode". This will give them time to process what they heard before the question and time to think about the question itself;

Summing-up

Perhaps not surprisingly…

- Provide structure and clear guidance through a syllabus and, more importantly, a weekly detailed README file;
- If necessary, provide a review of basic requirements, e.g., basic Econometrics, a crash-course on how to use a software and incorporate into the course, ideally in week #1. This should be made an integral part of the course, using the same tools as for the rest of it;
- In additional to the standard material, provide slide decks with a voice over to make up for the lecture. Try to replace the lack of interaction (pointed out by some students as the main downside of this medium) by anticipating questions students might have, by using a forum for students to ask questions, and by using the live sessions;
- Whenever possible, provide a mix of resources, from slide decks to video casts to podcasts to scientific papers. Use them to schedule discussions during the live sessions, but make sure to give students enough time to prepare (2+ weeks) -- typically, they aren't used to this;
- Whenever possible, provide a mix of ways to assess understanding, from exercises to empirical projects using data. The latter are typically thought to be hard-but-rewarding work, so allow students enough time to submit it (2-3 weeks);

- Get students to work in small groups so they get to interact with one another;
- Be open to feedback and to hear about non-academic issues, even if they seldom surface.

Student Feedback

The Survey

As the University decided not to carry out teaching evaluations, I organized one anonymous survey myself using a free online tool. It was short (6 questions) and straight to the point:

Three questions to be rated on a Likert scale (1=strongly disagree to 7=strongly agree)

Q1-Please rate the following statement: I am satisfied with the course instructor

Q2-Please rate the following statement: I am satisfied with the course material

Q3-Please rate the following statement: Overall, I am satisfied with the course

Three open-ended questions:

Q4-What worked best in the course?

Q5-What could be improved in the course and is feasible to be implemented by the instructor?

Q6-Do you have any comments or suggestions for future editions of this or another course?

On the email inviting students to take part on the survey, I mentioned it was short (6 questions, estimated 3 minutes to complete), anonymous, and until when it would be available. I also made explicit that answers would help me improve the teaching strategy in future courses, especially in view of the lack of official evaluations this term and the continuation of online/hybrid teaching next term.

The Results

The response rate was quite different across courses; while 8 out of 22 students (~36%) in Applied Industrial Organization responded, 12 out of 64 (~19%) in Environmental Economics did so. My hunch is that this was due to the fact that the former was only taken by students in one program (the Bachelor in Economics and Sustainability, NOEK in the German acronym) whereas the latter was taken by students from over eight different programs at the university – students from other programs were less likely to feel like they "owned" the course. In fact, the time stamps of the answers to the two courses were quite close in most cases, suggesting that most respondent took both courses, i.e., are NOEK students.

Given what could have happened, feedback was good (all medians from ratings in the range 1-7):

Question	Applied Industrial Organization (N=8)	Environmental Economics (N=12)
1- I am satisfied with the course instructor	6	6
2- I am satisfied with the course material	6	6
3- Overall, I am satisfied with the course	5	6

Here, I clearly noticed that the more work-intensive Industrial Organization course suffered more. However, given the breadth of the course, the different tasks, the use of a software etc., I can understand it.

The highlights of the courses were, according to the students (in no particular order, clustered according to relatedness):

- The provision of material for all topics of the course (!?) ("so that I was able to study asynchron"), the weekly slides plus voiceover combination ("since I could pause them and listen to them again");
- The structure provided by the README files ("it was always clear what I had to do for the week"), the organization of the material;
- The empirical projects ("I really liked the empirical projects along the way. Although they were quite a lot of work, I learned a lot")
- The quick feedback in case of questions, the weekly live sessions, answering questions by using examples, the commitment of the lecturer;
- Different aspects of the podcasts-papers combo ("some of the most interesting things I have learned at university");
- The humane aspect ("I also felt like you were sympathetic regarding the challenges coming with studying online and always open for feedback);

The more thorough feedback was very gratifying to read (for the Industrial Organization course):

- "I very much liked working on projects and getting an insight into how all the theory we have learned so far can be applied! Also, the structure of the projects was great, how the questions were guiding us and built on each other. And it was extremely helpful to work in groups, especially for those who were not experienced with Stata. I also appreciate the online meetings and the general structure of the weekly workload. This course is the example that I always give when talking about how digital teaching can work (not just uploading the slides but interacting), so thank you so much for the effort!!! I hope others will follow this example! And thank you for moving the exam to September, this gives more time for preparation!"

As for the negatives:

- The lack of exercises in one of the courses (against high workload in the other – you live and learn);
- The high workload;
- The workload combined with the difficulty of the empirical projects;
- The fact that one wasn't able to ask questions right away due to the online format;
- Lack of precise guidance in the empirical projects (which, however, wasn't asked at any point, including live sessions…);
- Some comments about audio quality of the recorded material;
- The need to switch between README and files and the less-than-obvious naming of the recorded files (the university tools didn't provide the same flexibility as a standard file explorer when it comes to renaming, labelling, and transferring files.)

As for additional comments and suggestions looking forward, students wrote:

- They liked the podcasts-articles combination;
- Provide more explicit guidance in the questions of some empirical projects;
- Shorten the empirical projects or give students more time to work on them ("as it was done with the last projects this semester, which I appreciate");

Calibrating the workload under non-standard circumstances seems to have been a problem university-wide as per a general survey carried out this term. To me, this is due to a combination of little experience from course instructors coupled with the little time to re-think their courses but also little experience from the student body when it comes to structure their own time and work independently. Adding to the mix the difficulties brought by the pandemic (less of a concern than I had previously thought, according to answers to the university-wide survey) and you get students more likely to struggle with the workload.

Take-aways

While this wasn't a walk in the park, I think this term provided an interesting experience which I envisage moving education in general (not only higher education!) towards what economists would call a new equilibrium and normal people would call a new paradigm.

In this new reality, one would ideally provide material for students in advance to enable them to get a basic grasp of the topics by themselves and then use lectures (and/or live sessions) to further discuss potentially more advanced issues – hopefully using a student-centered approach! This could well imply that faculty could re-use the basic course material and invest more time on advanced topics for the lectures/live sessions and research.

A number of issues remain, from the risk of being vague in the tasks and explanations to the lack of flexibility which likely amplifies them to inequality in the access to hardware, software, and even to a reasonably fast connection to the web. While this poses a challenge regarding the inclusion of less well-off students, it could also make it more inclusive due to the advantages of hybrid, asynchronous teaching.

Given the whole situation, it was gratifying to read some of the comments and realize your effort was acknowledged. Among the comments, students commented on my "dry humor" and wished me a "nice Summer". I take this to mean that we should aim for a positive spin and not to forget the humane dimension, in addition to the academic focus.