

Breakout session on “The challenges and possible solutions for taking physics teaching online”

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Physics LTHE Breakout room 1 notes

We started by discussing taking exams online and marking, Gradescope (from the same company as Turnitin) worked well for marking.

How to enable students to compare notes with each other during online teaching?

Google Jamboard has been used as an online whiteboard for students working in groups during tutorial sessions. It worked well, except students who did not have a tablet with a pen found it difficult to write on but it can be done with a phone.

Students are likely to find their own ways of collaborating. We can propose solutions, but they will probably be more digitally aware than the lecturers.

Are there some things e.g. graph drawing that do not lend themselves well to these sorts of online approaches? For both lecturers and students it is important to be able to draw sketches and diagrams. Some students seem to be reluctant to draw diagrams. Could this be a consequence of the move towards using PowerPoint so students don't see lecturers drawing as part of their thought process? Amazon has cheap drawing tablets that can be used for this purpose, but to really enable student collaboration, they need to have these tools as well.

For first and second year students, knowledge-based questions are more necessary as they are still building up their understanding. Third and fourth years can be given more problem-based questions, requiring them to bring different parts of the course together. Some questions that required diagrams were answered by students taking a picture of sketch they had done. The use of a whiteboard slows down the presentation of the material and brings out the logic, unlike if the same material is presented all at once electronically.

What do we want students to do in synchronous and asynchronous sessions? In the asynchronous sessions, we can leave any collaboration to the students, while in synchronous sessions we should provide more structure to get the students to interact.

One of the advantages of lectures is the ability of the lecturer to enthuse the students. This is much more difficult online, how can we enthuse students when delivering electronically? We have to figure out what we are adding and adapt our delivery methods accordingly.

The Caruso (sp?) software encourages students to comment on pdfs of notes to show where they do and don't understand.

Physics needs to make an effort to retain students by showing them why what they are doing matters.

Online delivery seems to offer some students who would normally be quiet and not interact an opportunity to interact (e.g. via typing) in a way that they wouldn't normally. Online delivery methods change the balance of power to some extent, we become more moderators of the discussion than fonts of knowledge.

The students who need the structure of a lecture timetable will need more training to organise themselves and make sure that they do not get left behind. Without the requirement to be in a lecture theatre, we need to find other ways of ensuring that students are engaged with the course. The tools we have for measuring engagement online may actually provide us with more information on how students are getting on with the course than we currently get by just eyeballing lecture attendance.

Lose the easy trick of crowd pleasing demonstrations that we can do in lectures, can replace with tricks like Zoom backgrounds?

First years who don't know each other will be isolated if they don't catch something they won't have a friend nearby to ask.