

University of Bristol Medical School - Designing and running remote teaching sessions using Blackboard Collaborate

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Background

This document is a guide to adapting large-scale teaching sessions for delivery online using Blackboard Collaborate or equivalent. It is based on experience from teaching sessions with 3rd year medical students during May and June 2020.

It is derived from:

- 1) Detailed observations of the sessions
- 2) Three student focus groups
- 3) A questionnaire completed by 69 students

Context

These sessions took place at a time when, due to Covid-19, no other teaching was taking place and students were preparing for exams. They were therefore glad to have any teaching, however it was delivered. Nevertheless, observations and comments from students suggest that when delivered effectively this medium can still offer a good quality learning experience. Two of the main challenges for teachers with this medium are i) to assess student's knowledge and monitor their understanding, and ii) to keep students engaged during the session.

Topics

The topic of a session seems to be the most important factor in how much it is valued by students. Topics that are particularly valued are those that:

- have not been adequately covered in the student's Academy
- are perceived as a core topic
- are perceived as relevant to upcoming examinations

Topics that work particularly well in this medium include those that:

- involve a large amount of visual material, X-rays, ECGs, clinical photographs etc.
- allow students repetitive practice of specific skills, for example interpreting radiograph or ECG interpretation.

Less easy to adapt for this medium are topics that involve a deeper or more complex level of conceptual understanding.

Structure and Content

1. Many of the recommendations for effective design of structure and content of sessions apply to face to face teaching, but in this medium are even more important.
2. Plan the content of sessions carefully in advance and to ensure that the learning objectives are realistic for the time available.
3. Design sessions so that sections can be omitted or skipped if time runs out. If all sections are essential then decide in advance how long you will spend on each section and stick to each milestone.
4. Provide students with pre- material well in advance of the session, but don't assume they will have read all of it.
5. Include a quiz at the beginning of the session to find out what students know, and plan to adapt the session accordingly.
6. Ensure that the structure of the session is very clear and coherent, with very obvious signposting to enable students to orient themselves in the material and stay focused. A repetitive structure can be helpful with this.
7. Build in repeated opportunities for students to test their understanding. A 'boring, repetitive' structure can give students a sense of becoming more proficient with each example they look at.
8. Punctuate the session with varying activities, for example building in breaks in the presentation at various points to allow students to ask questions.
9. Bear in mind that many students will watch the session as a recording rather than live. For this reason:
 - I. When using polling questions, add the polling options onto the corresponding Powerpoint slide.

- II. Give a spoken confirmation of correct answers to the polling questions rather than writing them in the chat, otherwise those viewing the recording will see the answer before they see the question.

10. Make full use of visual media and use drawing and pointer tools.

Engaging students

1. Students tell us that what engages them most in an online session is having opportunities for interaction, for example through polling or answering questions.
2. Begin with a short 'ice-breaker' activity, perhaps while you are waiting for more students to join the session. It could be something that has nothing to do with the content of the session, and even something quite trivial.
3. Include a quiz at the beginning where the answers are relevant to the content of the session, or which become apparent during the session.

Interactivity

Students agree that "Interactivity should be included as much as possible". However, interactions need to be well-designed, clear in their purpose and present an appropriate level of challenge.

Use of Polls

The polling seems to be the most popular tool for interaction and elicits the most responses from students. Students like being able to test their understanding in an anonymous way, using a format similar to exam questions.

Some tips for using polling questions:

1. Make sure polling results are not visible until you close the poll so that students are not influenced by others' answers.
2. Polling questions don't appear on the recording of sessions so put the question options on the associated Powerpoint slide so that students watching the recording can read the options.
3. Give a time limit starting from when you ask the question so that students know from the outset how long they have to consider their answer.
4. The Blackboard Collaborate polling tool only allows Multiple Choice questions and not Multiple Answer questions, so to ask multiple answer questions set up options that contain a combinations of possible answers, where only one combination is correct.

Use of chat

To ask questions to students

1. The chat tool is more suitable where:
 - You want to ask more open-ended questions
 - You want to ask a question that occurs to you ad hoc and you don't have time to prepare a poll.
2. However, compared to the polling, students are much more inhibited about answering questions in the chat and usually only a minority do so. To encourage more students to participate:
 - I. Don't immediately respond to the first correct answer but invite others to suggest their answers, even if it is the same. Give the slower students more time to give their answer.
 - II. If there are no answers at all, wait for a while to allow plenty of time for students to think. A few moments of silence might feel a bit uncomfortable, but it can actually be very productive.
 - III. Consider alternatives to the chat, for example getting students to generate a Word Cloud.

Fielding student questions

The chat also offers a way for students to ask questions.

1. The best time to respond to students questions depends on the type of question and whether answering it would take things off on a tangent, or would be a useful clarification of the teaching point in question.
2. Rather than trying to answer questions immediately or waiting til the end of the session, build junctures into the session, for example at the end of a case or subtopic, where you answer questions relating to that section.
3. As well as getting students to write in the group chat, welcome them to message you in the private chat so that they can ask a question without the whole cohort seeing. You can answer in the private chat or the group chat as appropriate.

Designing questions and tasks

1. When designing interactive questions and tasks, consider:
 - I. The specific purpose of the interaction, for example:
 - To find out what students know and adapt the session accordingly
 - To stimulate students to apply and think more deeply about what you have presented to them

- To give students opportunities to practice a skill that you have presented
- To give students an opportunity to identify gaps in their knowledge

(It may also be helpful to let students know what the purpose of the questions is.)

- II. What knowledge students will require in order to answer the questions and will most of them will be able to access that within the time you allow them.

An example: You want to set questions where you provide blood data and get students to propose a diagnosis. This will require them to draw upon their knowledge of the underlying physiology – are you confident that most students will be able to bring this knowledge to mind within the time you have given them?

2. Often the best tasks are those that draw upon knowledge that you have just presented and that invite the student to analyse and draw inferences from it.
3. It is recommended that questions should relate to the learning objectives of the session, and that (other than ice-breakers) unrelated questions included just for the sake of interactivity are best avoided.

Use of Break Out Groups

1. The Blackboard Collaborate Break out groups has the potential to make sessions more student-centred and maximize students' active involvement. Experience so far is very limited, but suggests that:
 - I. If you are going to use a break-out session it is very important to alert students in advance of the session so that they come prepared to discuss and interact, otherwise they may panic and leave the session.
 - II. Currently membership of break-out groups in Collaborate can only be allocated randomly rather than for example into their existing CBL group. Students will therefore need time to become acquainted before they can start working together on break out tasks.
 - III. The most effective tasks to use in break-out sessions will be where there is scope for discussion and disagreement within the group. Tasks that simply involve retrieving or summarising information are likely to be carried out by one or two members while the others look on passively.
2. Other ways of using the Break-out rooms could include giving students visual material to share and work on including where they have to draw or annotate images and post the annotated version to the presenter.

Model Sessions

The following are brief outlines of 3 sessions that students identified as particularly useful or inspiring.

Cardiology Session

This session was the first of 3 sessions on Cardiology. These were selected by more students (54/69) than any other sessions in this series as having been useful or inspiring. This session focused on how to read ECGs and was based on 5 case studies.

The presenter started with a short ice-breaker while students were still arriving. Students were invited to write in the chat a new skill they had learned during lockdown. Students said this helped them feel engaged and connected, and they liked seeing their friends' names come up in the chat.

The presenter then showed 6 ECGs in turn and asked students to write down the main abnormality shown in each. These derived from 5 case studies that would be presented during the session. The answers to the quiz became apparent as they went along. Students found that this helped them to remain engaged throughout the session because they wanted to know the answers.

The presenter then went through the 5 cases in turn. Each one followed a similar structure, with some variations depending on the specifics of the case. A brief outline of the presentation and history was given. The patient's ECG was then shown and then a poll question was used to ask students how they would manage the patient, with 4 options given. The associated slide showed the 4 management options and a reminder of the main features of the case. The presenter responded with his own answer and a brief explanation. The presenter followed with more information relevant to the particular case, and a discussion of the significant features of the ECG, using the pointer to draw attention to them.

Structure of all 5 cases

- 1) Presentation and History
- 2) Shows ECG for this case
- 3) Student poll on management
- 4) Other features relevant to particular case (e.g. 1st case introduces Red Flags for cardiology assessment – these are referred to repeatedly during the rest of the presentation, Case 2 presents options for patient self-monitoring)
- 5) Presenter's interpretation of the ECG – Used pointer to indicate features of the ECG
- 6) Recommended management

At the end of the 5 cases the presenter summed up the key learning points from the session and confirmed the correct answers for the quiz at the beginning. He used a poll for students on a scale of 1 – 6 to indicate how many of the 6 they had got correct (some students said they had got 0, which they found disheartening).

The session ended with an invitation to students to ask any questions they had, although none did. Students did write comments expressing appreciation for the session. The session lasted approx. 53 minutes.

Students liked this session because the presenter 'explained things clearly so they were understandable and not too complicated' and because it made effective use of interactivity, for example that the introductory quiz helped them to stay engaged throughout the session.

Radiology session

There was a one-off session titled 'Year 3 Radiology Cases Quiz' based on 30 Radiology cases. These were made available to the students via Blackboard before the lecture. This was the second most popular session (chosen by 38/69).

On the first slide was the message 'While we are waiting to start - if you haven't already gone through the cases, start going through them and write down your diagnosis'.

The cases had been distributed before the session, which students said had helped them to prepare and also to identify this as a useful session. The session started with a poll about whether students had gone through the cases yet, in order to help the presenter tailor the session. It was pointed out that it was anonymous and no judgments were being made.

There was a general introduction to the cases and how they were chosen, and an invitation to students to ask questions in the chat during the session.

The presenter introduced the idea of using a system, or set procedure, for looking at radiographs, emphasizing that there is no one best system, and then used the 1st case to illustrate the system that he uses. He also made reference to it in later cases.

Each of the 30 cases followed a similar structure, with variations depending on the nature of the case and the specific point that the presenter wanted to emphasise. This might be for example how to identify the particular anatomical features shown in the radiograph.

All the cases were based on a single radiograph, and in every case students were invited to offer a diagnosis by writing it in the chat, sometimes at the beginning and other times half-way through or even at the end of the case.

The presenter sometimes responded to student's suggested diagnoses by asking for more suggestions before he gave his answer. In many of the cases he also used a pen tool to draw on the radiograph to illustrate the correct answer and also explain why the wrong answers were wrong.

In some of the cases the presenter also used polling questions, for example to ask 'What kind of scan is this?'. Also in some cases he asked students to suggest management of the patient.

At times the presenter lured the students into a false assumption which he was then able to correct, for example by showing a case that looked rather like a previous case but had crucial differences, or another case asking for a diagnosis when it was actually normal, to point out that this is in a sense the hardest diagnosis to make.

The time spent on each case varied but the session overall lasted 1hr 18minutes.

Student comments on this session were that it was 'boring but efficient', that 'it was aimed at our level and tailored to what we needed to know'. They like 'the drilling method, going over what you need to know' because 'in the end you feel you've learned something'.

Endocrinology Session

This was the first of 2 sessions on Endocrinology. It was the third most popular session in the series (23/69). The session was supported with Powerpoint slides mostly containing words and some diagrams.

It started with general introduction and an invitation to ask questions at any point. A detailed set of learning objectives was presented, as well as references to pre-reading and general background reading. However, there was no indication of the structure or outline of the specific topics to be covered, which is something students say helps them to follow a session.

The first 20 minutes was an introductory talk revising and introducing material. After this the presenter introduced Case 1, a related case vignette, and asked students to choose from 4 possible causes for the presentation. These were listed on the accompanying slide and also presented as a poll.

There was a countdown to the poll closing, after which the results were read out. The presenter then explained why the incorrect options were incorrect. Students were then asked to write in the chat what investigations they would perform. The presenter waited until no further answers were offered, and then commented on the responses in turn.

There were also follow-on questions where the presenter took up students' suggestions and asked them what their implications would be. At the end of the case the presenter invited and answered questions related to it.

This structure was then repeated with the 2nd part of the session. After an introduction lasting 7 minutes there was a 2nd Case study. This time the presenter asked students to enter clinical features in the chat, and then showed a slide to confirm that they were correct. There was then a polling question for students to choose the most appropriate treatment. There was then a 3rd Case study on a variation of Case 2.

After Case 3 there were a series of 5 polling questions where students had to interpret a set of results. The detail of feedback from the presenter varied according to the complexity of the interpretation.

Case 4 started at 1hr 4 minutes. It followed the same structure as case 3, starting with a question 'what are the clinical features?' that students answered in the chat. Case 4 was followed by some further information about TFT monitoring and interpretation.

At the end of the session the presenter invited and received further student questions. By this point there were only half the number of students in the session than at the beginning.

Some students commented this session had been just as good as when they had been taught the same subject by the same lecturer face to face. Others said they liked the session because it covered everything they needed to know.

Some commented however that there was too much material in the session, and others said that although a good session, it felt a lot more like a lecture than a tutorial (a lot of talking and less input from students) and at 1hr 25 minutes was too long.