Is the lecture really dead?
Reasons I thought this was a conversation worth having

I have colleagues who give excellent lectures, students praise them and the lecturers feel strongly that this type of teaching 'is not broke' and 'it's given us many Nobel Prize winners'. These colleagues often feel excluded from current discussions about teaching innovation that sometimes conclude that lectures are not valid in higher education

Sometimes students are wanting novelty rather than innovation e.g. team-based learning - there's evidence of its pedagogical value but some students are bored of it now and don't appreciate the learning it can stimulate and so do not see it as innovative

Lectures can include active-learning by students and stimulate some more to happen away from the lecture hall

(I promise that I don't think Lectures are always good and I also support and enjoy other types of teaching and learning!)

Is the lecture really dead?

This session's learning objectives*see notes below

By working[+] at understanding this material, you should be able to discuss the following questions:

How can lectures help students learn?

How can lectures hinder students' learning?

What is some of our best practice in making lectures more effective now?

and as the learning and teaching strategy beds in?

Part 1. How can lectures help students learn?

Students do praise lectures
(SOLE)

'Thank you…you have inspired me to do some outside reading about this subject'

'I am now very interested in …. and am applying to labs to try some research'

'very interesting content and always encouraged debate in the class'

'very up to date on research'

'your lectures make me happy'

Think, pair, share

How do you think lectures can help students learn?

For 3 minutes, think about your answers, talk with your neighbour, write it down and tell us

(this can be done in lectures)

Ideas from the workshop participants about how lectures can help students learn

Introduce new disciplines efficiently (sometimes, this introduction won't be available elsewhere e.g. in textbook form). We can save students a lot of time and confusion

Create the 'spine'/'scaffold' to begin to learn about a new discipline (yes, lots of information is available these days but we can use our discipline-knowledge to help the students to frame this information). This can then support problem-solving activities.

Being taught by experts in a discipline can motivate students (yes, this could be done online but there is something different about being in the same room as someone who can hopefully 'read' their audience's responses and answer questions)

I've had some pedagogically dreadful lectures but still been inspired by the passion and eccentricities of the lecturer (AH)

A lecture slot forces students to commit time to a subject (although they can be physically present but not cognitively engaged but this can also happen with videos if students watch them sped up with other tabs open on their computers)

Lectures can help students feel committed, that they are 'in it for the ride' and that their degree is a '3 course meal not a street snack'. This has social aspects too and these are important to learning see e.g. Lave and Wenger's ideas about 'communities of practice'.

The lecturer can control the pace of the teaching and (should) respond to the audience's responses – expanding explanation when the students look confused.

The lecturer can personalise the syllabus to reassure students e.g. 'when I was a student, I found this difficult'

some more ideas

Students sometimes withdraw to their rooms especially if videos of lectures are available (as a mental health first aider AH sees students each term who are doing this); this can make their worries and anxiety grow and their mood fall (but we should note that even in Lectures, some students can sit in isolation)

A lecturer experienced in the discipline can show how the discipline arose, how the scientific process has worked

With correct course design, lectures can build on a student's previous level of understanding and help build narratives across the course and the degree*

A lecturer can be honest about the field – where does the troubling complexity and uncertainty lie?

It's a break from being online/staring at a screen

Hopefully, there is some time for the students to ask questions of the lecturer (online forums/social media can support this dialogue afterwards too if the lecturer has the time and inclination)

Having to at least try to be 'cognitively disciplined' enough to concentrate in a lecture is not a bad skill to develop

Lecturers can gain an understanding of their students

Some students like thinking about stuff and struggling to reach an understanding about it quietly on their own – they don't want to always work in teams

(* of course in the future, resourced developments such as personalised blended learning will enhance this)

Students *can* produce higher level thinking and learning by working at understanding lectured material

e.g. in exam answers following lectures we see:

synthetic ability inc. outside reading
critical analysis
original suggestions e.g. of future experiments

We can/should reinforce this by thinning facts, explaining our assessment values and changing the type of assessment questions that we ask

Part 2. The problems with lectures

school students are trained to memorise facts for exams – it can be difficult to break this habit with lectures if they just contain facts

we forget most facts

Which facts do we need? To retain discipline depth?

(Do all our students want to join our discipline? That's another discussion)

Reviewing our assessment methods can work alongside lectures to help alleviate these problems

Think, pair, share

How do you think lectures fail to facilitate student learning?

For 3 minutes, think about your answers, talk with your neighbour, write it down and tell us

Ideas from the workshop participants about how lectures can not help students to learn

If the lecture is facts, facts, facts, students switch off and rely on Panopto*

Some lecturers do not add anything beyond what students could get from some written notes (other lecturers will 'add value' beyond this)

The content can be too dense – less is more

Students don't need to know *all* about a lecturer's research

Lectures can be misaligned with assessment (this needs improved course design and communication between teachers)

It can be particularly difficult to engage students in one-off lectures

Lectures don't often show how the factual material can be used to solve novel problems (this discussion isn't suggesting that lectures can do everything and there is poor and better practice in lecturing style)

Lectures may constrain some students

(*I've included Moira Sarsfield and John Conway's Panopto use analysis alongside these slides to emphasise the advice that effective Panopto use is the same as effective note-taking and timely follow-up work)

Part 3. How to activate our lectures now

Tell students what you want them to do with the lectures

note-taking skills

ask questions

talk to peers/us /the internet about it

practise explaining the material

Use published evidence on effective learning techniques e.g.

Technique	Effectiveness	Description of Technique
Practice Testing	High	Self-testing or using past-exam questions while learning.
Distributed practice	High	Developing a schedule of revisions / learning activities over time.
Elaborative Interrogation	Moderate	Thinking about 'why' you have answered a question or creating an explanation for a response.
Self-explanation	Moderate	Linking new information to known information or using applied questions (problem based learning).
Interleaved Practice	Moderate	Developing a schedule that mixes different techniques during a period of study.
Summarisation	Low	Writing summaries of concepts / area of study.
Highlighting	Low	The use of highlighters or underlining while read / rereading.
Keyword Mnemonic	Low	Use of key terms / acronyms / images to associate with concepts to be learned.
Imagery	Low	Attempting to form mental images of materials while reading.
Rereading	Low	Revisiting text that has already been read.

Table 1: Learning techniques and their effectiveness adapted from Dunlosky et al (2013) pg 6.

Demystify exams to free up thinking space

e.g. I show students 'live' how I mark exam answers. The diagram below shows that the student half understands how cells can 'Velcro up' with each other and so it was given a 2B (examples like these are very useful teaching material for me because they show me what students can fail to understand)
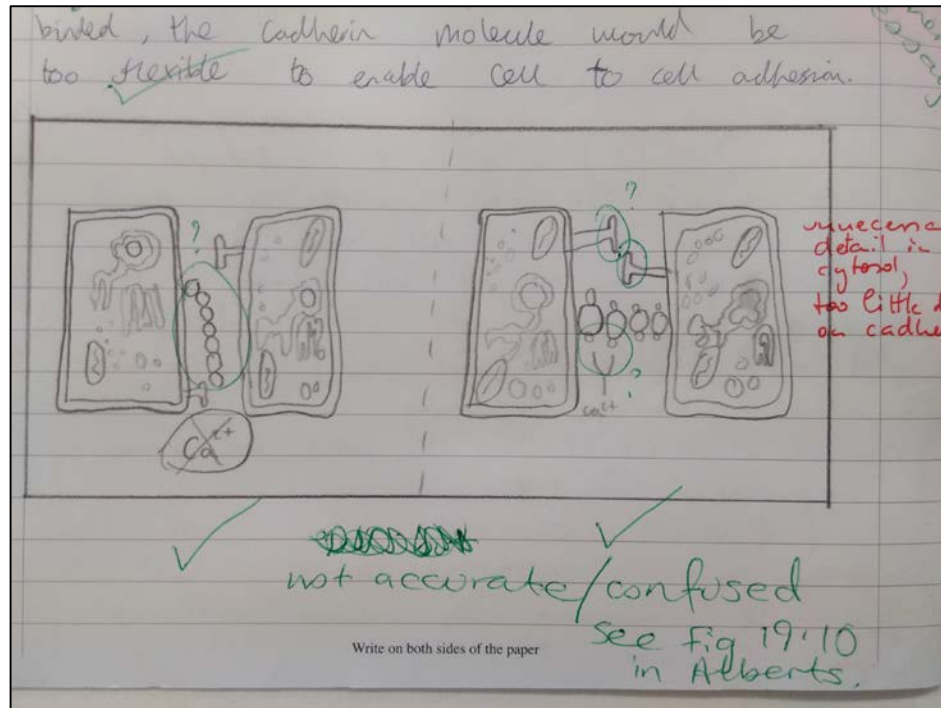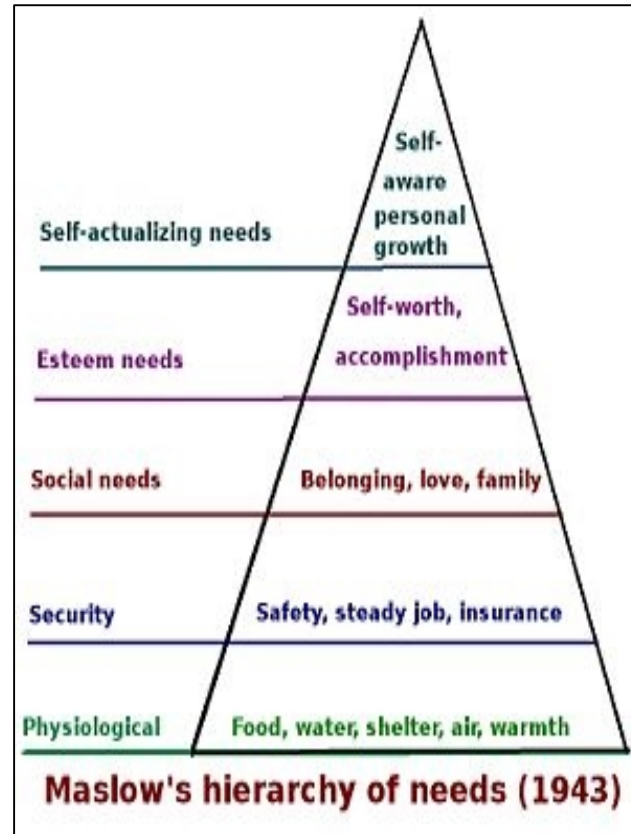

'it's not A-levels anymore is it?'

'it seemed scary at first but I got used to it and I realised it's just how University work is'

Remind students: You are not exam machines

Self-actualizing needs — Self-aware personal growth

Esteem needs — Self-worth, accomplishment

Social needs — Belonging, love, family

Security — Safety, steady job, insurance

Physiological — Food, water, shelter, air, warmth

Maslow's hierarchy of needs (1943)

You will be transformed in many ways by your time here.
What are your values and aspirations? Who do you want to be?
Look after your mental health and wellbeing e.g. see our site on Blackboard
Fight perfectionism and fear of failure

Let your class take a few minutes break
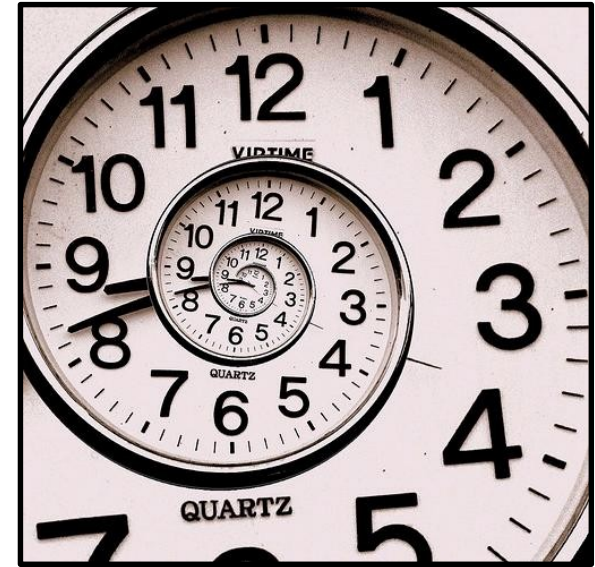

Relax

Chat with your neighbours

Read through notes, highlight places

that you need to work on to understand

Think up questions to ask

(of peers, the research literature and/or

anita.hall@imperial.ac.uk / @ani2tall /

course Facebook group)

Have plenty of formative assessment to check if/what students are learning

e.g. Quizzes

[Kahoot](#) is free, very easy to set up and students find it fun (there's less staring down at their phones than with Mentimeter)

Use in class and afterwards on VLE – highlights misunderstandings that can be corrected

(concept inventories and threshold concepts for your discipline are probably available online to use for quizzes)

Draw it, show it

What could happen next to this cell?

What does this graph's data tell us about x?
Are there alternative possible explanations?

What would you predict happens next in this experiment?
Actually, this happened; draw the possible mechanism

How could you answer this research question…?

Summarise a definition in 8 words

Choose a key term in your teaching

Define it in your own words in 8 words

Share best practice with colleagues
What are your top tips for activating your lectures and best supporting students' learning?

One minute feedback at the end – What was the main point of this lecture? What didn't you understand?
Throw something (soft!) at the students – whoever catches it has to ask a question
Ask students to the front of the class and have them act out a process
Bring in props, special guests….

Experiment – it won't all work

Anita Hall