UNIVERSITY OF
Southampton
School of Chemistry

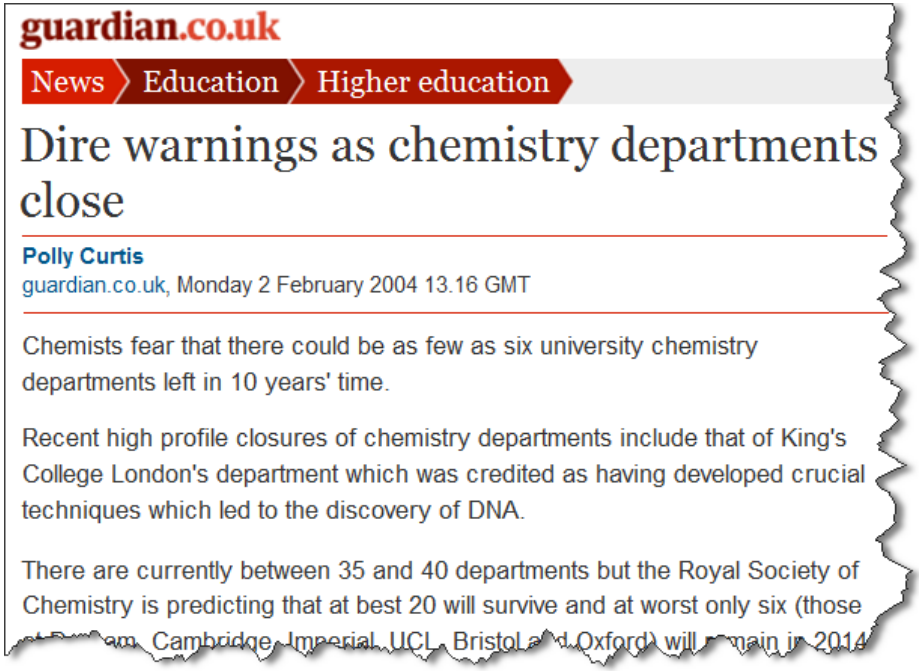
Recording Lectures:
Should we or shouldn't we?

David Read

What was 'Chemistry for our Future' and how did I fit in?

Background (2000-2005):

- Number of A-level entries falling each year
- Applications to chemistry degrees also falling.
- A number of chemistry depts were closed down.



guardian.co.uk

News › Education › Higher education

Dire warnings as chemistry departments close

Polly Curtis

guardian.co.uk, Monday 2 February 2004 13.16 GMT

Chemists fear that there could be as few as six university chemistry departments left in 10 years' time.

Recent high profile closures of chemistry departments include that of King's College London's department which was credited as having developed crucial techniques which led to the discovery of DNA.

There are currently between 35 and 40 departments but the Royal Society of Chemistry is predicting that at best 20 will survive and at worst only six (those at Durham, Cambridge, Imperial, UCL, Bristol and Oxford) will remain in 2014

What was 'Chemistry for our Future' and how did I fit in?

HEFCE funded 2 yr pilot + 1 yr (4 strands)

£3.6m awarded starting 06/07 (+ £1.6m).

Chemistry for our future
managed by the RSC

Strand 1: Outreach (C:TNG)

Strand 2: School Teacher fellowships

Strand 3: HE Curriculum development

Strand 4: Smarter use of existing laboratories

My role at Southampton

- Successful bid for funding under strand 3.1 ('From Registration to Graduation').
- £45k over 2 years (~ 0.5 FTE).
- SoC matched the funding → **School Teacher Fellow**.
- Two roles – develop support for the transition
  – contribute to outreach activities
- Took up the post at end of May 2007.
- Admissions tutor (2009–)
- First year tutor (2010–)

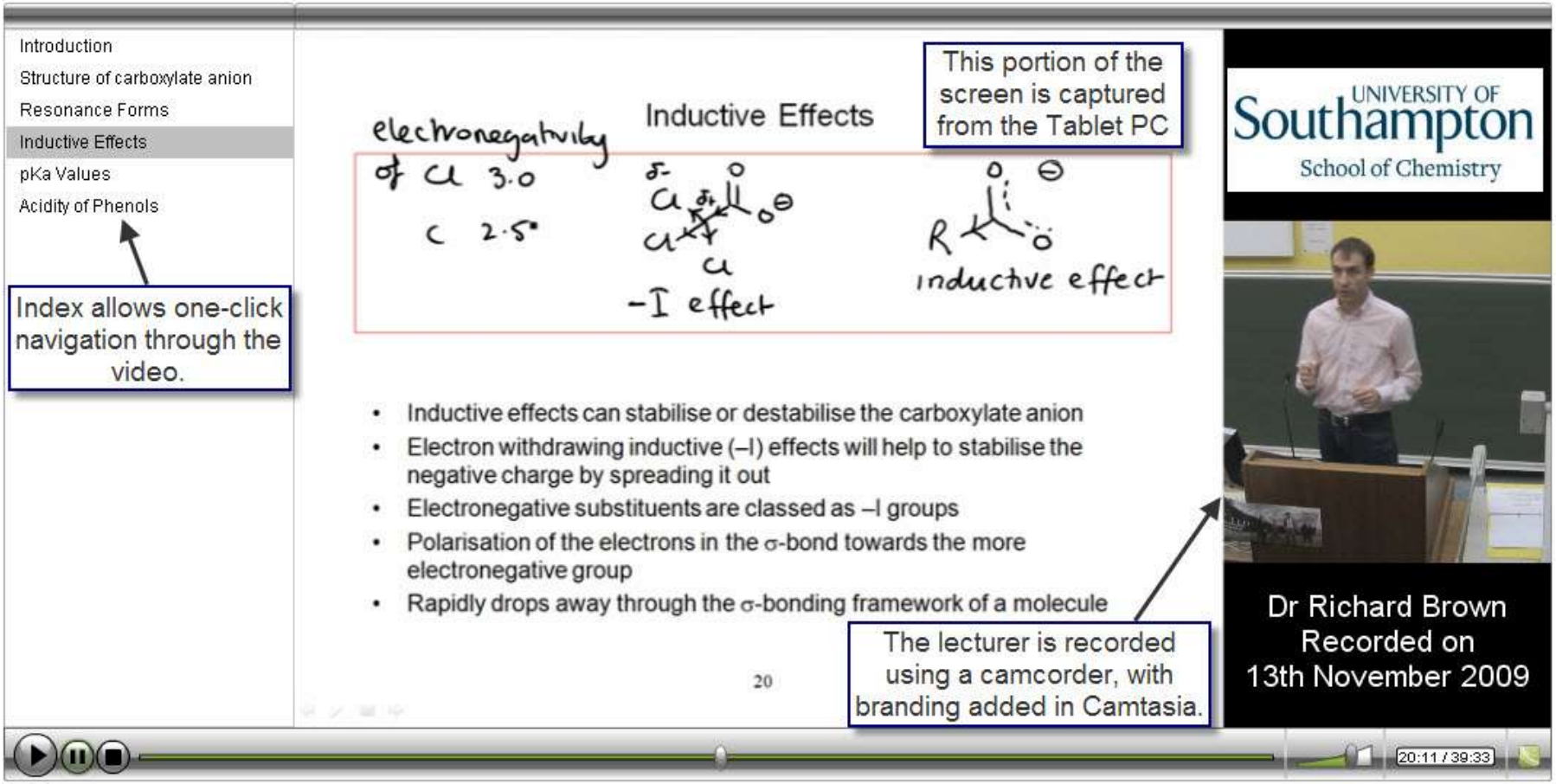
Lecture capture: setting the scene at Southampton

- Students are generally ill-equipped to handle the bombardment they get in lectures. *Note-taking skills, cognitive overload, fewer one-to-one opportunities*
- Many lecturing styles are used by academic staff – and students have many different learning styles.
- Some sort of lecture notes are posted on the VLE by most staff (normally PPT slides or skeleton notes).
- We are constantly seeking ways to improve the learning value of our lectures (and to meet the needs of the students, albeit without spoon-feeding).
- **Some students are making audio recordings anyway.**

Lecture capture: how we ended up doing it

- Timetable clashes affected 5 combined honours students – **unacceptable**
- Lecture material captured using Camtasia
- Lecturer captured using a camcorder
- Ability to make online lectures the same day

A format for presenting video lectures

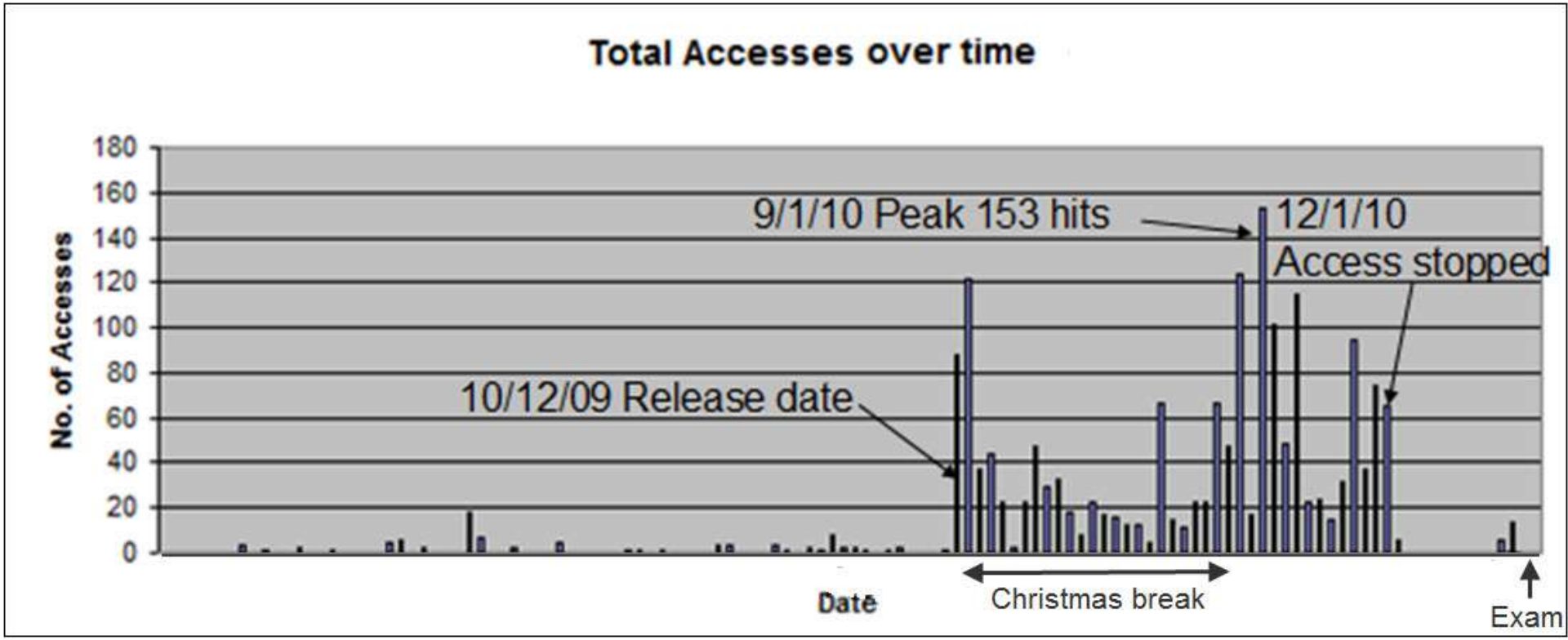


A format for presenting video lectures

How did students use the recordings and what did they think?

- The lectures were only available to those who we affected by the timetable clashes in the first instance. The initial response was very positive.
- A final year project student was on hand to assist with recording/editing and to carry out the evaluation.
- The statistics tracking features of Blackboard were used extensively, with some refinement of the data required.
- A sample of students were interviewed.
- The findings were published in this year's *New Directions in the Teaching of Physical Sciences.*

Some usage statistics



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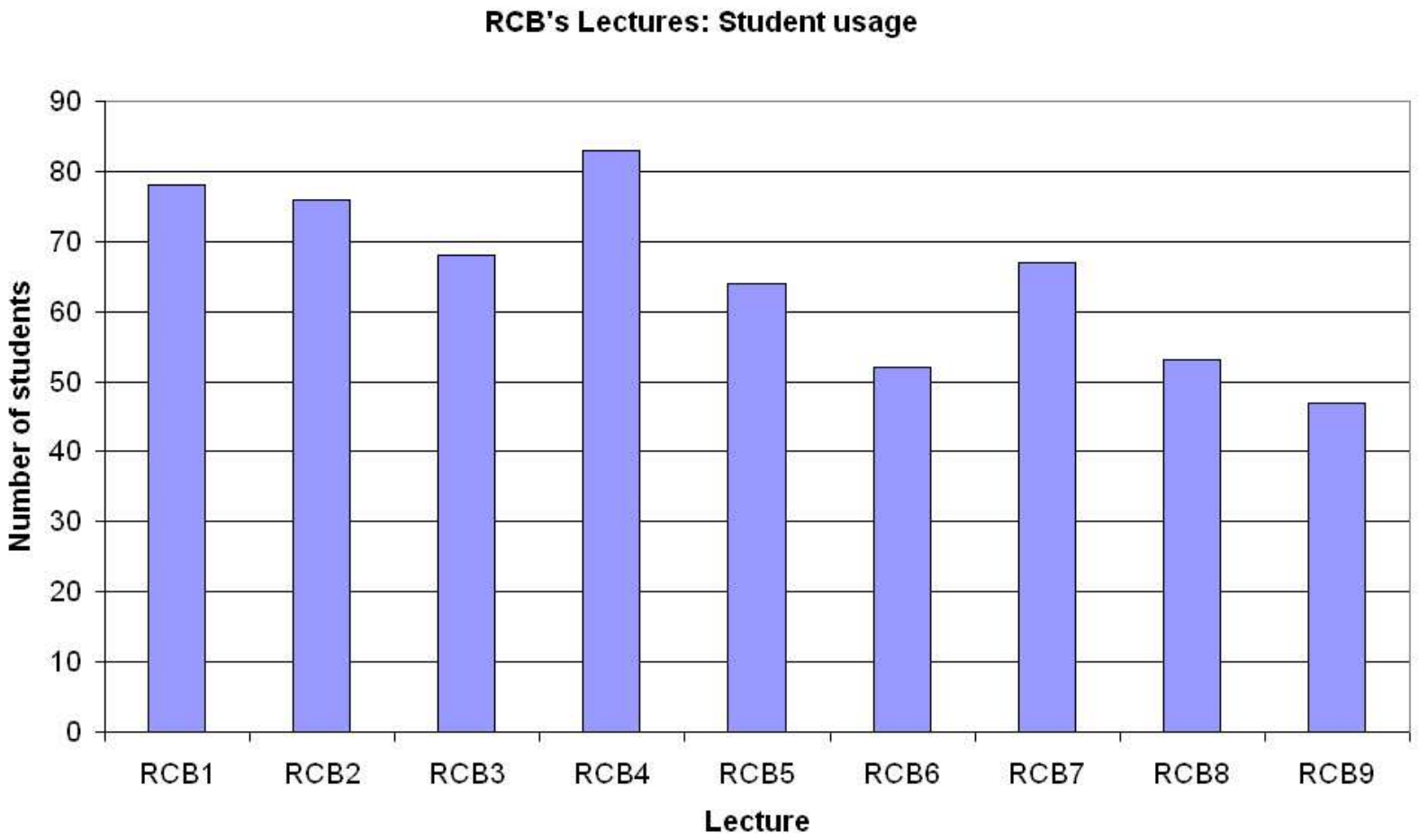

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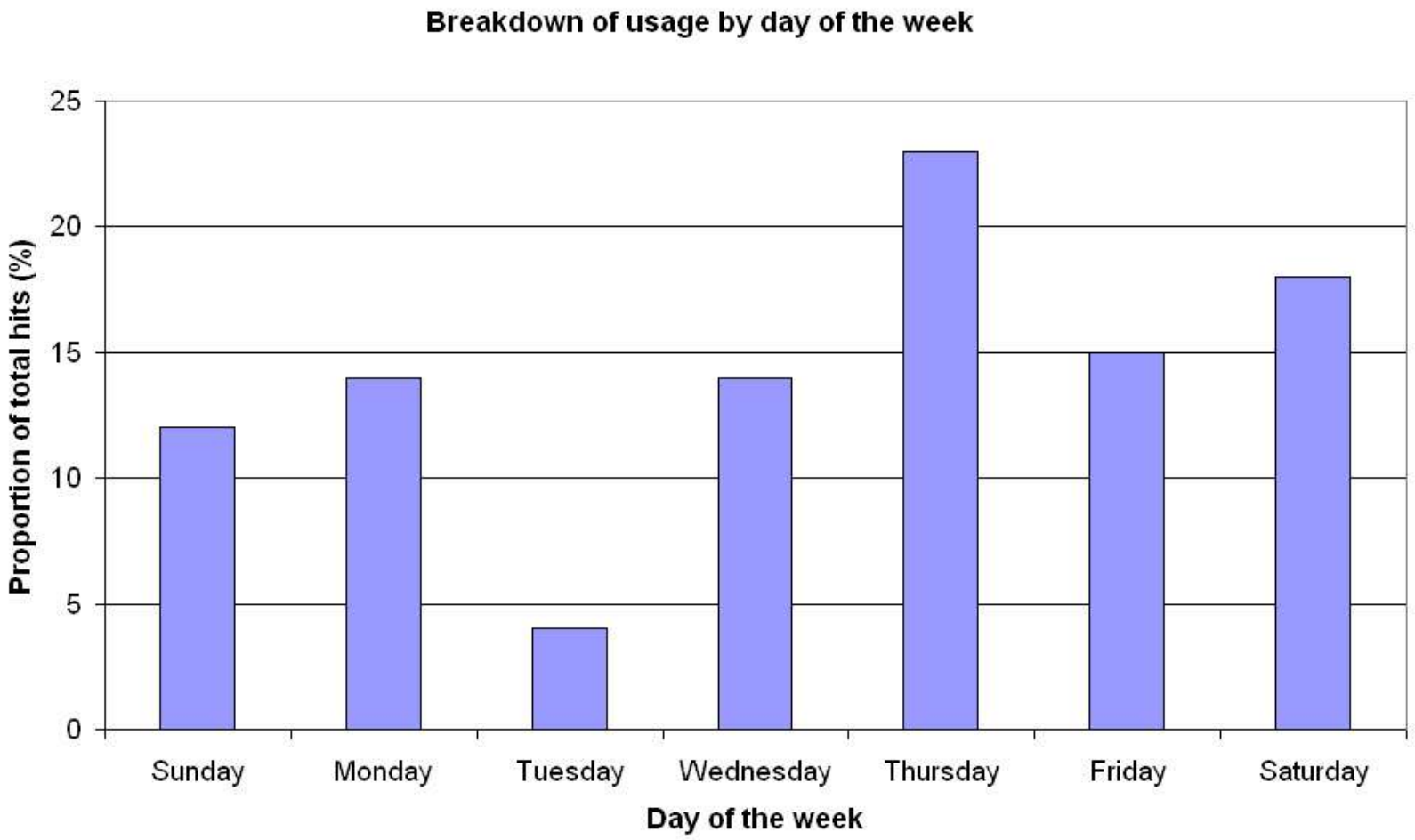

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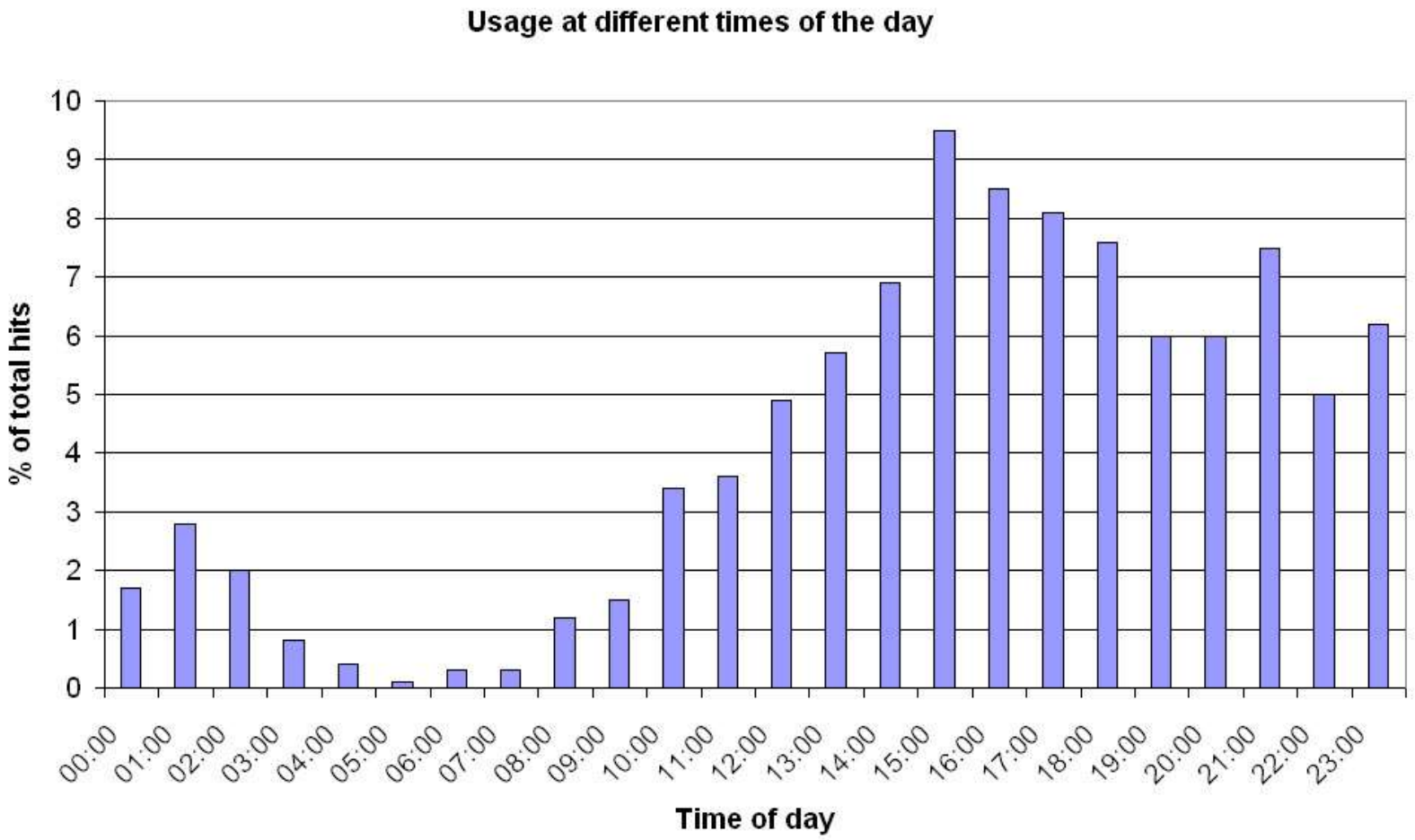
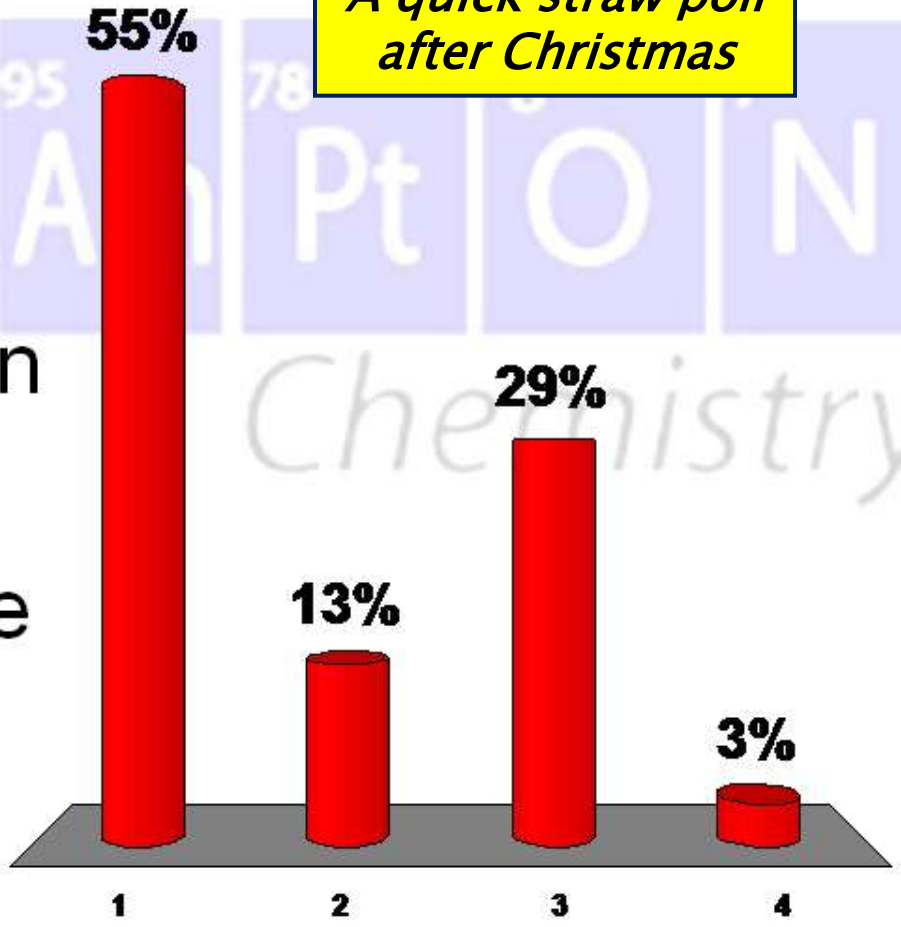


How did you find the organic lecture recordings?

1. I liked them – they helped my revision
2. I liked them, but they didn't help me to learn
3. I didn't watch them
4. I don't think they were useful

A quick straw poll after Christmas



How were the videos used?

- *'For revision alongside the textbook and Microsoft Word for note taking'*
- *'For filling in gaps in notes the evening after the lecture'*
- *'iPhone videos used on long coach trips for sporting fixtures and during 'dead time' at university'*
- *'Used for looking up specifics using the contents function'*

Comments on attendance

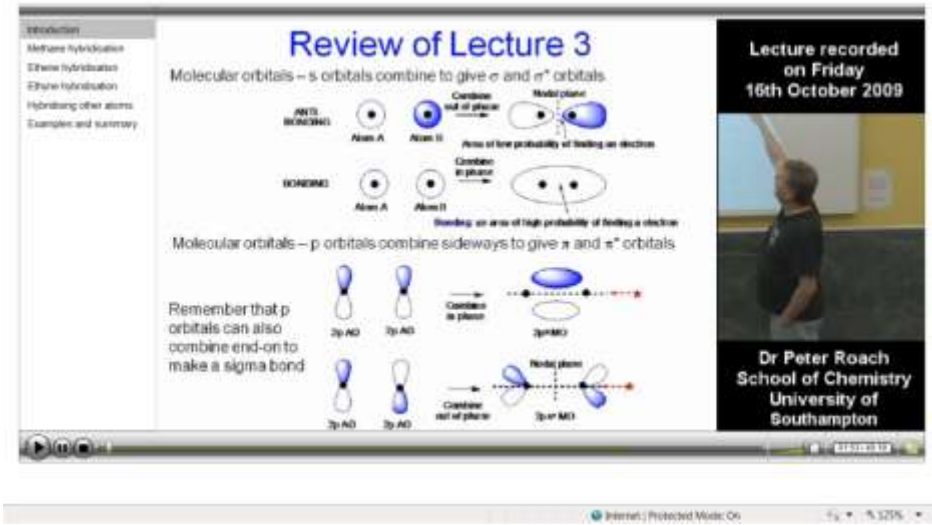
Students generally claim that attendance won't be affected

- *'We're paying for it'*
- *'Helped us to not switch off'*
- *'Provided a security net for lectures missed due to illness (fresher's flu)'*
- *'Lectures provided a valuable opportunity to ask questions'*

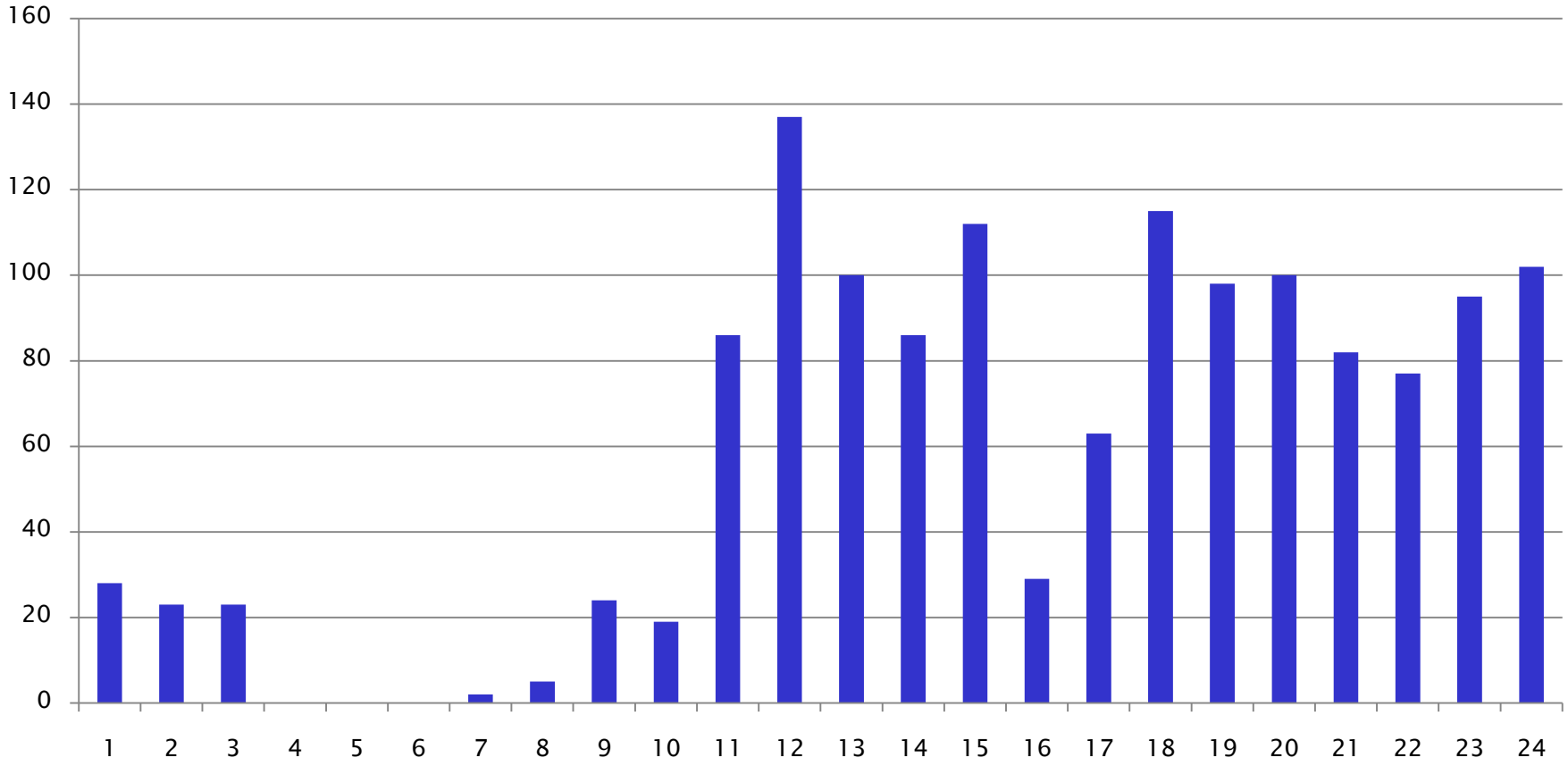
See also: Davis S, Connolly A, and Linfield E, *engineering education,* **4,** *2,* (2009) pp. 4-13.

Lecture capture: Phase 2 (2010/11)

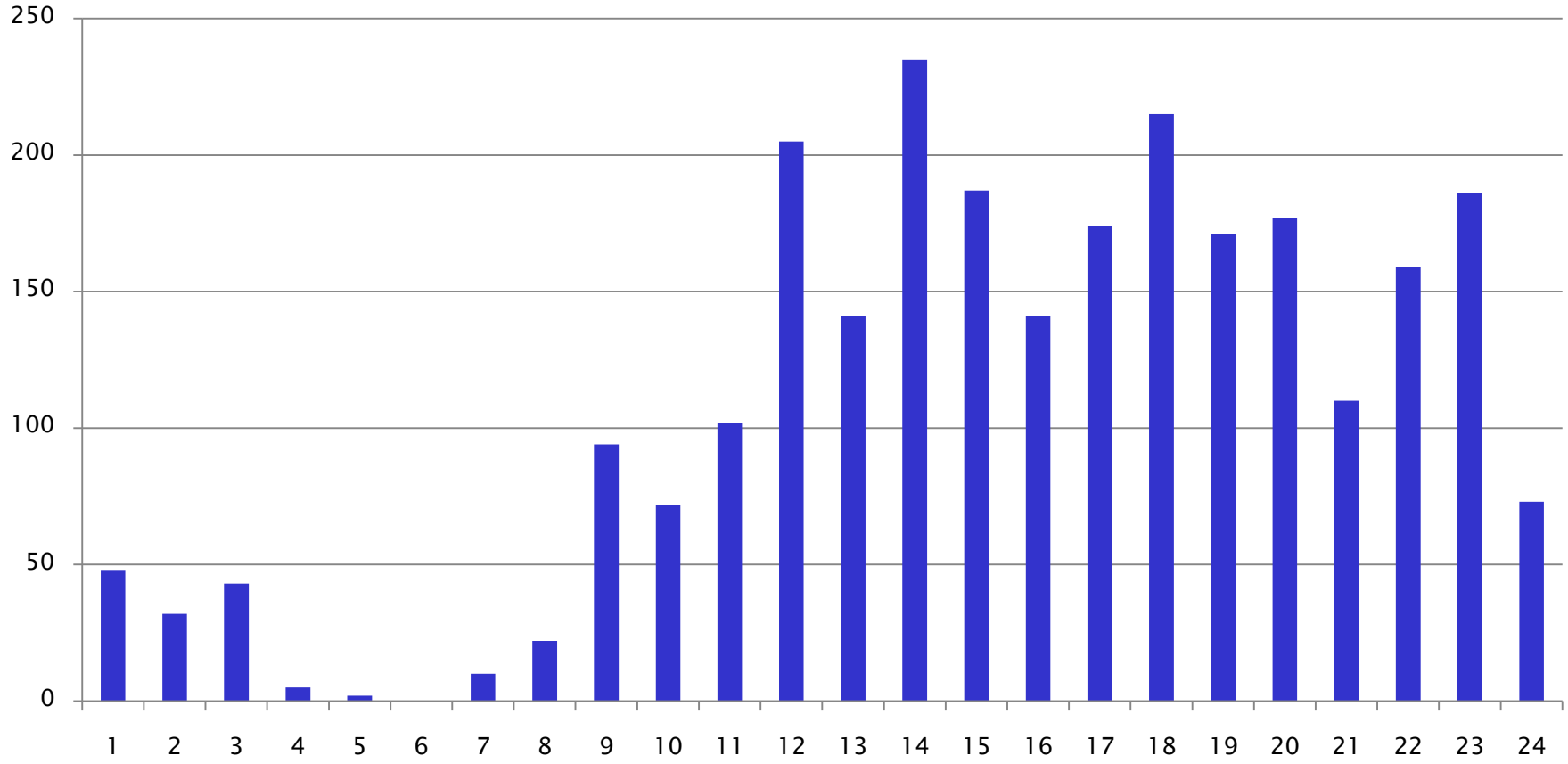
- More timetable clashes (NatSci students)
- Panopto software available
- Tablet PC (available on loan)
- Staff much more comfortable with the idea
- Attendance monitoring introduced



Some of this year's statistics: Inorganic lectures (crude data)



Some of this year's statistics: Physical chemistry lectures (crude data)



Initial analysis

- Over half of all students have accessed at least one video file.
- A number of students are routinely looking at recordings (above those who miss the lectures).
- It is unclear whether or not students are watching entire lectures, or just specific items they want to recap.
- The majority of students indicate that they will make significant use of the recordings during revision *(is this necessarily a good thing?)*.
- A more detailed evaluation will be carried out this year *(we need to learn more about ethics first…)*.

Consulting the literature…

- Benefits to students include:

  Catch up

  Accessibility

  Unlimited viewing

- There are potential benefits to staff:

  CPD and 'self-review'

  Increased student engagement

  Fewer 'tedious' questions

http://www.cebe.heacademy.ac.uk/news/events/beecon2006/pdf/P24_Jim_Balfour.pdf

Pedagogic benefits:

Students can:

- concentrate on the material being presented.
- control the pace of delivery.
- revisit key concepts time and time again.

BUT is there a danger that students will see the lecture as the only source of knowledge in a particular area, with negative consequences for independent learning?

Recorded lectures: the best way of supporting students?

Don Clarke at ALT-C Sept 2010 'Don't Lecture Me'.

http://www.youtube.com/watch?v=9e4iFx2Gm0A ***Beware of 'Twecklers'***

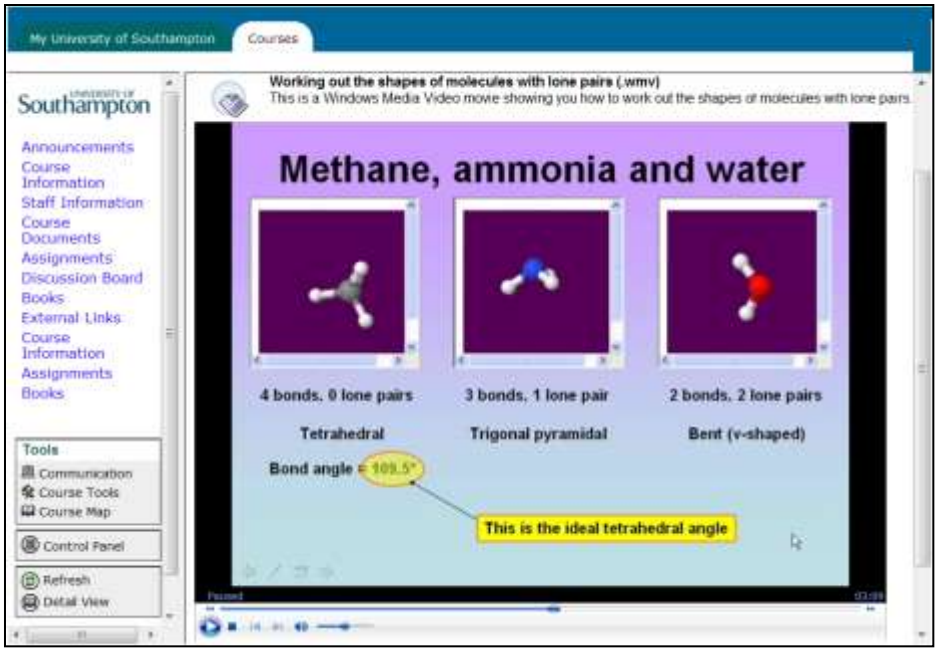
Problems with lectures

- Often too long
- Too much material
- Students' note-taking skills can be poor
- Excessively teacher-led
- Passive experience
- Can be at inconvenient times
- Not student focussed (staff:student ratio)
- *Technology can help, though*
- *Students value the interaction*

Alternative approaches

Bite-sized video clips:

- 'Vignettes' (edited highlights)
- 'Pre-lecture' clips
- Video tutorials (key concepts)
- Formative assessment



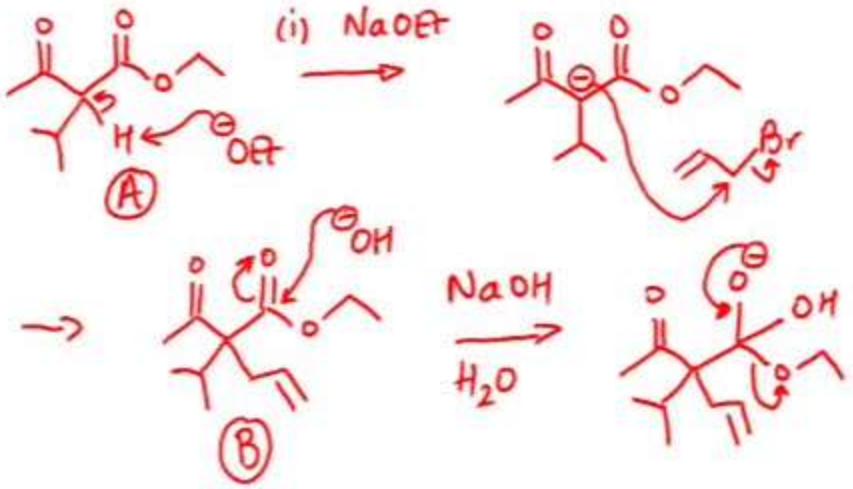
Turning worked examples into self-assessment exercises

- Organic chemistry = problems.
- Y2 exam performance in January was poor…
- Remedial work was needed in order to:

  help students to improve their basic skills in organic chemistry

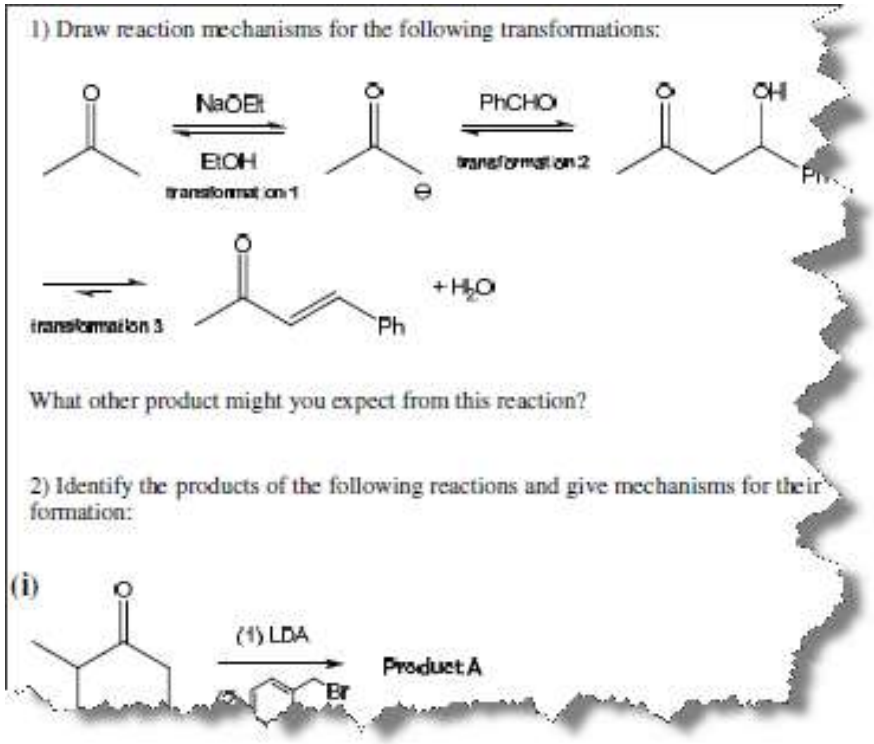
  assist them in working effectively on their own

  boost their confidence and keep them engaged



Turning worked examples into self-assessment exercises

- Problem set assigned over the Easter holiday.
- A video mark scheme was produced for self-assessment.
- Marks were reported back via VLE (+ feedback).
- Video mark scheme resembles a tutorial.



Turning worked examples into self-assessment exercises

3..

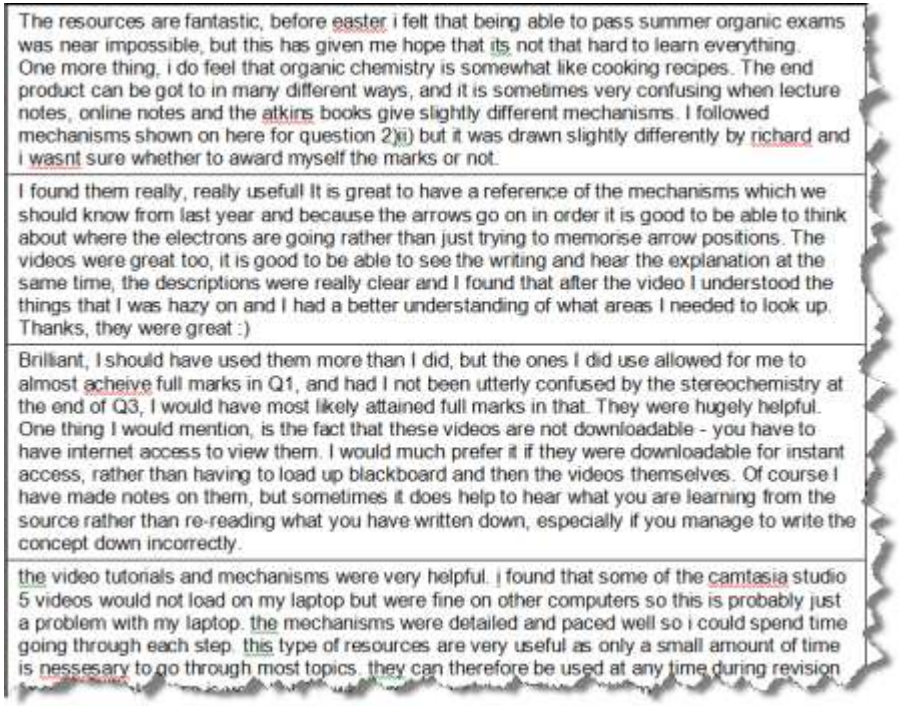
Turning worked examples into self-assessment exercises: evaluation

- Feedback from the students was excellent:

The resources are fantastic…'

'…I feel that I got some decent learning out of this exercise.'

'It was a brilliant exercise in covering things I had already understood, whilst simultaneously highlighting things I'd clearly managed to remember or even learn wrong in the first place.'



The resources are fantastic, before easter i felt that being able to pass summer organic exams was near impossible, but this has given me hope that its not that hard to learn everything. One more thing, i do feel that organic chemistry is somewhat like cooking recipes. The end product can be got to in many different ways, and it is sometimes very confusing when lecture notes, online notes and the atkins books give slightly different mechanisms. I followed mechanisms shown on here for question 2)ii) but it was drawn slightly differently by richard and i wasnt sure whether to award myself the marks or not.

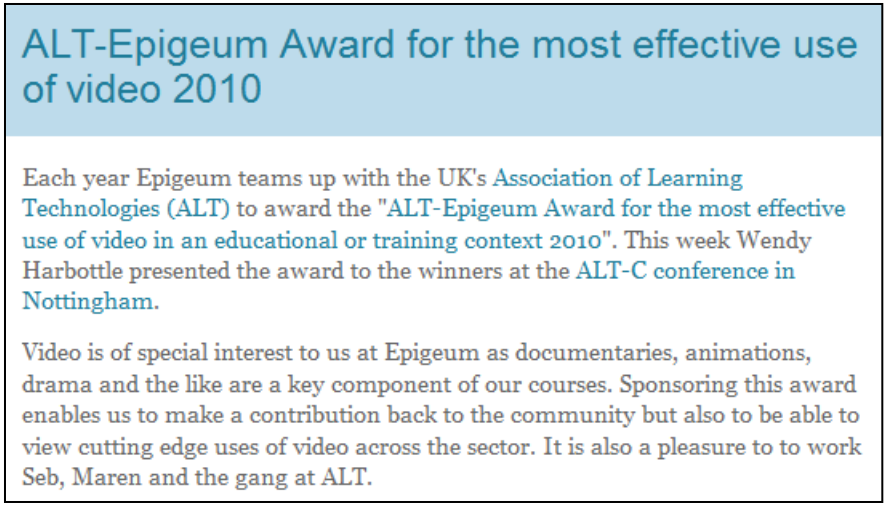
I found them really, really usefull It is great to have a reference of the mechanisms which we should know from last year and because the arrows go on in order it is good to be able to think about where the electrons are going rather than just trying to memorise arrow positions. The videos were great too, it is good to be able to see the writing and hear the explanation at the same time, the descriptions were really clear and I found that after the video I understood the things that I was hazy on and I had a better understanding of what areas I needed to look up. Thanks, they were great :)

Brilliant, I should have used them more than I did, but the ones I did use allowed for me to almost acheive full marks in Q1, and had I not been utterly confused by the stereochemistry at the end of Q3, I would have most likely attained full marks in that. They were hugely helpful. One thing I would mention, is the fact that these videos are not downloadable - you have to have internet access to view them. I would much prefer it if they were downloadable for instant access, rather than having to load up blackboard and then the videos themselves. Of course I have made notes on them, but sometimes it does help to hear what you are learning from the source rather than re-reading what you have written down, especially if you manage to write the concept down incorrectly.

the video tutorials and mechanisms were very helpful. i found that some of the camtasia studio 5 videos would not load on my laptop but were fine on other computers so this is probably just a problem with my laptop. the mechanisms were detailed and paced well so i could spend time going through each step. this type of resources are very useful as only a small amount of time is nessesary to go through most topics. they can therefore be used at any time during revision

Turning worked examples into self-assessment exercises: evaluation

- Some students talked about **reflection**.
- Improvement in attainment.
- Won the **'Most effective use of video in an educational context'** award from the ALT.
- Further resources are being developed.



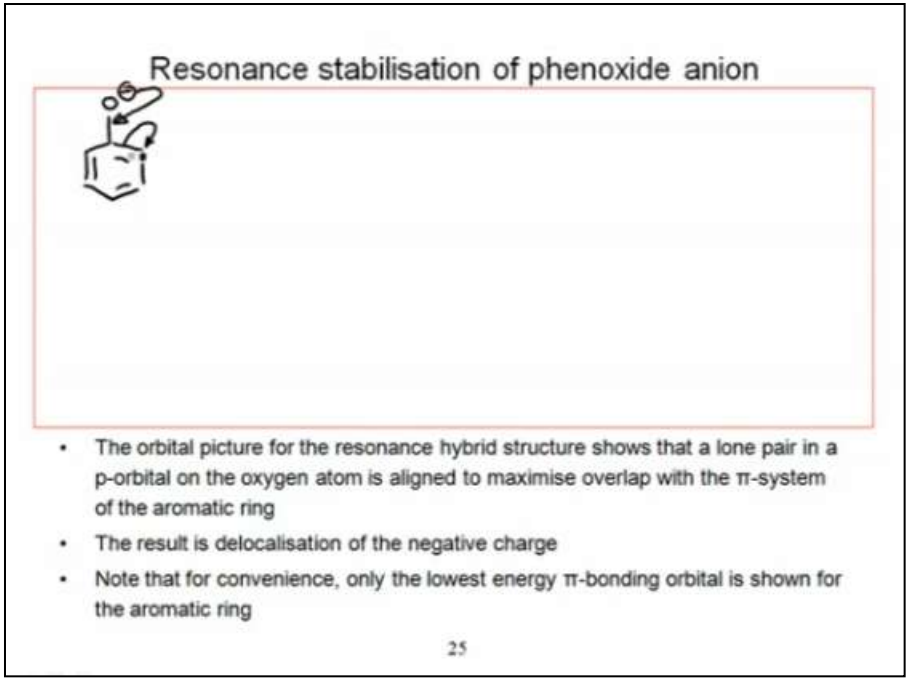
ALT-Epigeum Award for the most effective use of video 2010

Each year Epigeum teams up with the UK's Association of Learning Technologies (ALT) to award the "ALT-Epigeum Award for the most effective use of video in an educational or training context 2010". This week Wendy Harbottle presented the award to the winners at the ALT-C conference in Nottingham.

Video is of special interest to us at Epigeum as documentaries, animations, drama and the like are a key component of our courses. Sponsoring this award enables us to make a contribution back to the community but also to be able to view cutting edge uses of video across the sector. It is also a pleasure to to work Seb, Maren and the gang at ALT.

A plan for semester 2

- Revamp of organic section of course.
- Lecture content recorded beforehand and made available in ‘bite-sized’ chunks.
- The content covered in lectures (at a fast pace and contextualised).
- This will free up timetabled slots for interactive sessions.



General conclusions and comments

- Students are keen to have access to recorded lectures *(For the right reasons? What are the consequences?).*
- Using students to film the lecturer is a cost effective way of enhancing the screen capture.
- Some staff remain resistant to the idea of being recorded.
- Many universities are trialling automated systems, requiring upfront investment, but low running costs.
- The real power of this technology lies in making better use of face-to-face contact time in an era when student expectations are likely to soar.
- We're involved in a collaborative project with Simon Lancaster at UEA to created 'vignettes' as a means for delivering key content.