

# A learning analytics study – how do students use video recordings?

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## Background to the project

The aim of the study was to look at the use of lecture recordings in general, to discover ‘actionable insights’ on how to improve teaching and learning using this technology. We did not look at the performance of individual students.

The analysis covered 18 UG (year 1 and 2) modules across Maths, Chemistry, Physics and Life Sciences, for the academic year 2014-2015. We defined a module as a single block of teaching ending in an examination, and only included students who took the module and exam for the first time in 2014-15. Use of the recordings was measured by number of accesses and by minutes viewed.

## Key research questions

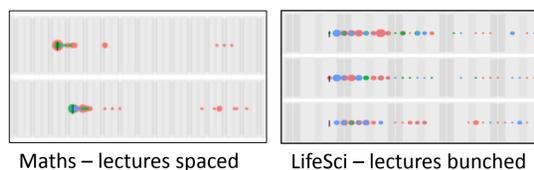
- How much use is made of video recordings by students?
- Is the use of recordings different for different:
  - modules and degrees?
  - groups of students?
  - types of content?
- How does the use of recordings in a course vary over time?

## Unexpected insights

If recordings are released late, they are accessed much less in total than those that are released immediately after the lecture.

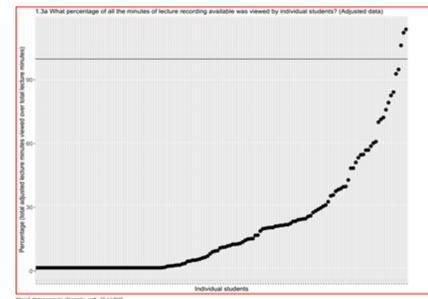


Space in the timetable may be needed to allow students to consolidate learning from one lecture before the next.



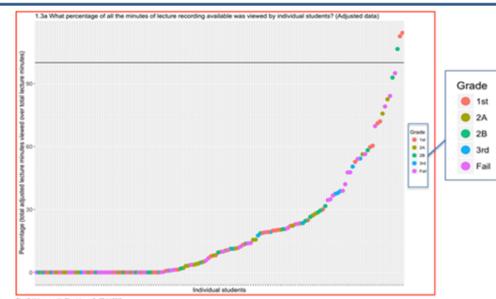
Do students use the recordings?

Yes, but use varies considerably. Many students do not watch any recordings at all. Some watch more than 100% of content. This is the same across Physics, Chemistry and Life Sci. Maths students don't watch so much – top value ~70%.



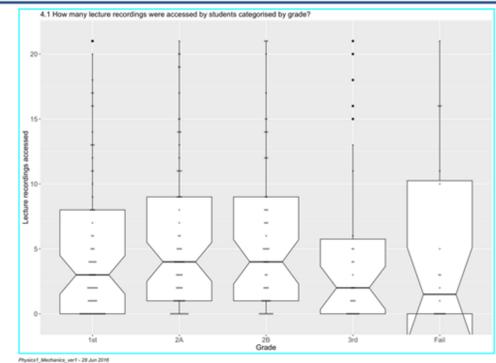
Is there a pattern in general use associated with grades?

No. Top-performing students and poorer performing students are distributed across the whole range.



Looking at it another way, is there generally more or less use by students who achieve different grades?

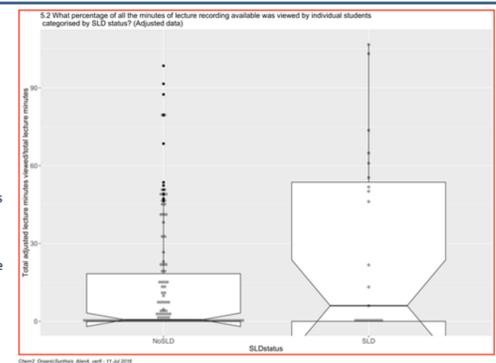
No, we don't see a significant difference in use between grades.



Is there generally more use by students with Specific Learning Differences (SLD)?

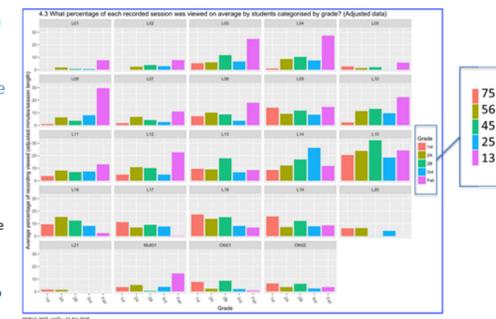
No, no significant difference is observed between students with and without SLD.

This was also the case for students of different origin – Home, EU, Overseas – which we used as a proxy for English as an additional language. No significant difference was seen in usage on any of the courses studied. This is as we expected/hoped for. Provision should already be in place for these students, e.g. correct accommodations and support.

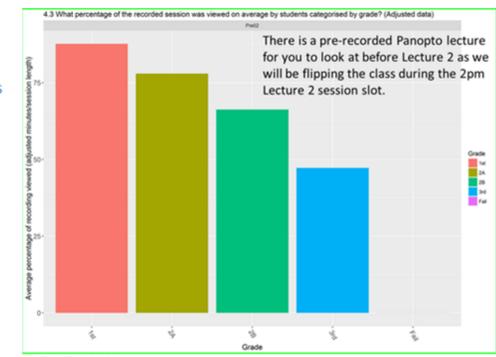


Is there any difference in use associated with grades? Yes, when we look in detail, we can see differences in use across different lectures or types of content.

See especially L15. Students who went on to achieve a first class result viewed this difficult lecture more than previous lectures in the course. Use of recordings by students who went on to fail dropped after L15, while better performing students continued to use the lecture recordings for the remainder of the course.

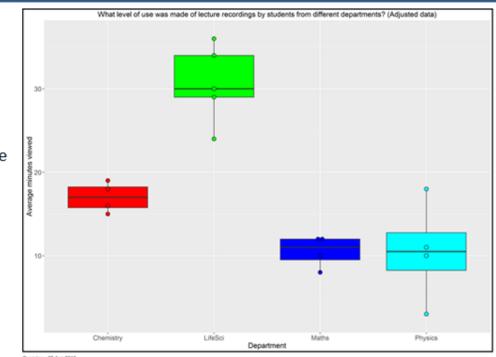


In this figure there is more use by first class students. Why? Because the viewing was required.

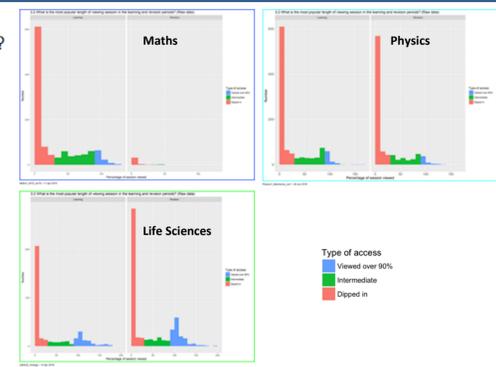


How much of an individual lecture do students generally watch?

This varies considerably by degree stream. The figure shows average minutes viewed of a 50 minute lecture. In Maths/Physics the average use is ~10 minutes (20%), while in Life Sciences it is ~30 minutes (60%).

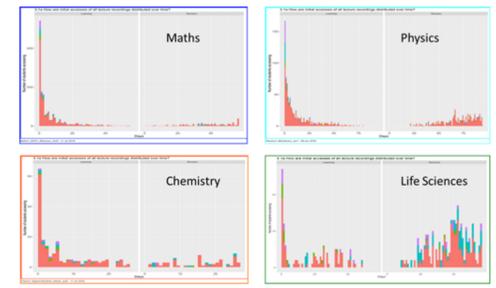


Are many students watching whole lectures? Again this differs by degree stream and also over time.

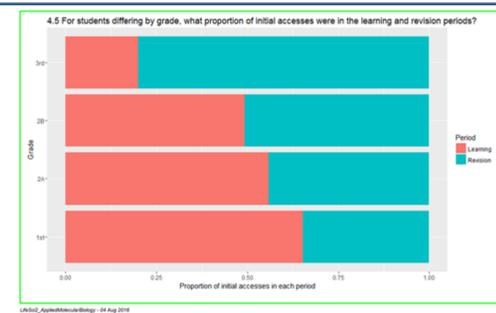


Does the pattern of use differ by degree? Yes – use in Life Sciences is very different.

Big differences are observed in pattern of use. Is this because of timetabling, type of content, assessment practices? This needs investigation, including qualitative studies.



Is there any pattern to the timing of use by Life Sciences students? Yes – students who achieve better grades use the recordings early.



## Actionable insights

**High-performing students:**

- View recordings where the lecturer says it is required (e.g. a flipped lecture).
- View recordings early, right after the lecture rather than in the revision period.
- Maintain their application right through the course. They don't slack off as term progresses.
- May or may not use the lecture recordings; likewise poorer students may or may not use them. Success is not directly correlated with lecture recording viewing.

**Advice for staff**

- Do not delay the release of recordings – delayed release results in lower usage.
- Give advice to students on the way you expect them to use lecture recordings.
- Consider how lectures are timetabled. Complex lecture content may require time for students to assimilate.
- If the pattern of use of recordings is not as expected, investigate why this is so, e.g. look at timing of lectures, content, pattern of assessment, etc.
- Check online which parts of each recording are being viewed most to find parts of the material that students find hard.

## Future plans

- Investigate the reasons for the difference in use of lecture recordings in Life Sciences
- Investigate how students attaining different grades use the recordings
- Build on the lecture recording analysis, e.g. study the effect of changes in teaching methods, e.g. flipped classroom or TBL, extend the study to departments in other faculties
- Apply the methodology and processes more widely to investigate use of other learning materials, e.g. formative quizzes in Blackboard, PeerWise.