Enhancement of Lectures with Video Recordings: Physics Pilot Project

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100 students at a lecture

Surely that's 'one size fits all'?

But what about…

- Students with hearing impairments
- Students with other physical disabilities
- Students with dyslexia
- Students having English as a second language?

Recording the lectures

Acts as a **supplementary resource** for those students with various learning difficulties

And offers **all** students the opportunity to:

- supplement their lecture notes
- recap misheard or misunderstood concepts
- prepare for problem classes and tutorials
- improve their revision practices

Not forgetting that…

Students may miss a lecture due to

- illness
- family commitments
- competing academic work
- a night at the pub!

Electromagnetism & Optics

- Has three lectures a week (rapid pace)
- Builds on previous concepts (sequential)
- So students need to catch up quickly

Video Recordings vs. Replay

Aren't we already doing all these things with the Replay service?

- To some extent, if you are using slides prepared with Powerpoint, etc.
- Not if you are teaching physics and mathematics
- We still use 'chalk and talk'

Why use chalk and talk?

- The ‘old fashioned’ method is useful for
  - delivering a long derivation with many equations
  - ensuring that students have time to follow structured thought processes
  - ensuring that students have time to take meaningful notes
  - for demonstrations, even simple ones

Example: Lecture 6 The Biot-Savart Law

https://www.youtube.com/watch?v=04VwQeFUOak

Pilot Recordings

- Are made
  - Using a video camera
  - Operated by a student
  - Following the chalkboard content and lecturer's explanations
- Please imagine the contents of video clip 1 in audio only
  - Would it be meaningful?

Uploading

- Recordings can be sent to
  - YouTube and/or EchoCentre
- YouTube ensures
  - Easy access
  - Wide dissemination
- Lecture 1 of the series, recorded in January, now has over 1,000 hits

Example: raises the profile of University of York

https://www.youtube.com/watch?v=elpOWXXu1ZQ

Three Courses Recorded

- Electromagnetism & Optics (Stage 2)
  - Core for Physics and Natural Sciences students
- Two MPhys modules (Stage 4)
  - Enabled students on industrial placements to participate on the modules
- Creates possibilities for distance learning

Collaborative Project

- As a collaboration between:
  - Physics Department
  - Replay Service Team (ELDT and AV Centre)
- Aims
  - To assess benefits and constraints from a pedagogical and technical perspective
  - To support wider deployment in subsequent academic years

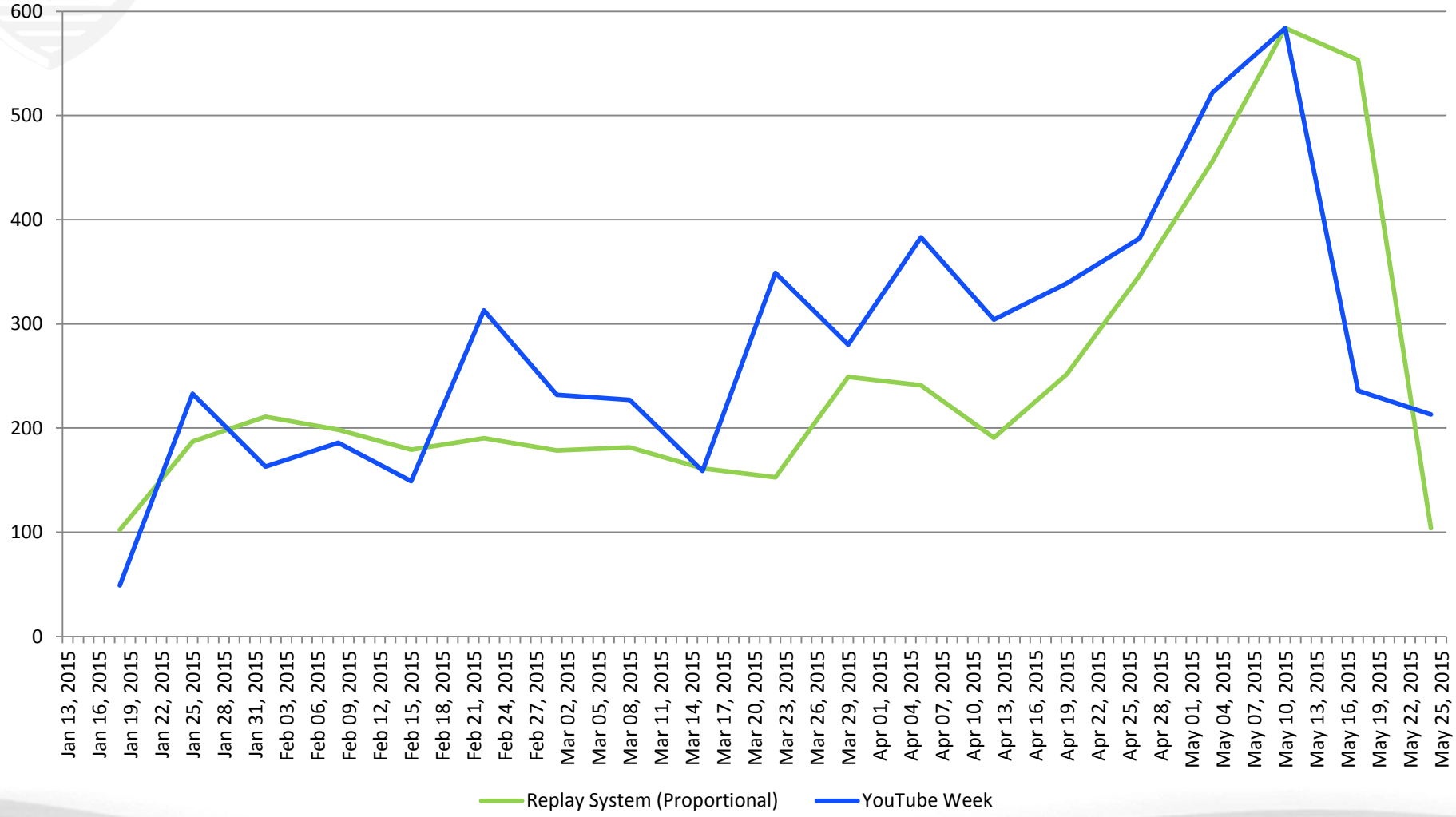
Pilot Project: Survey Results

Matt Cornock

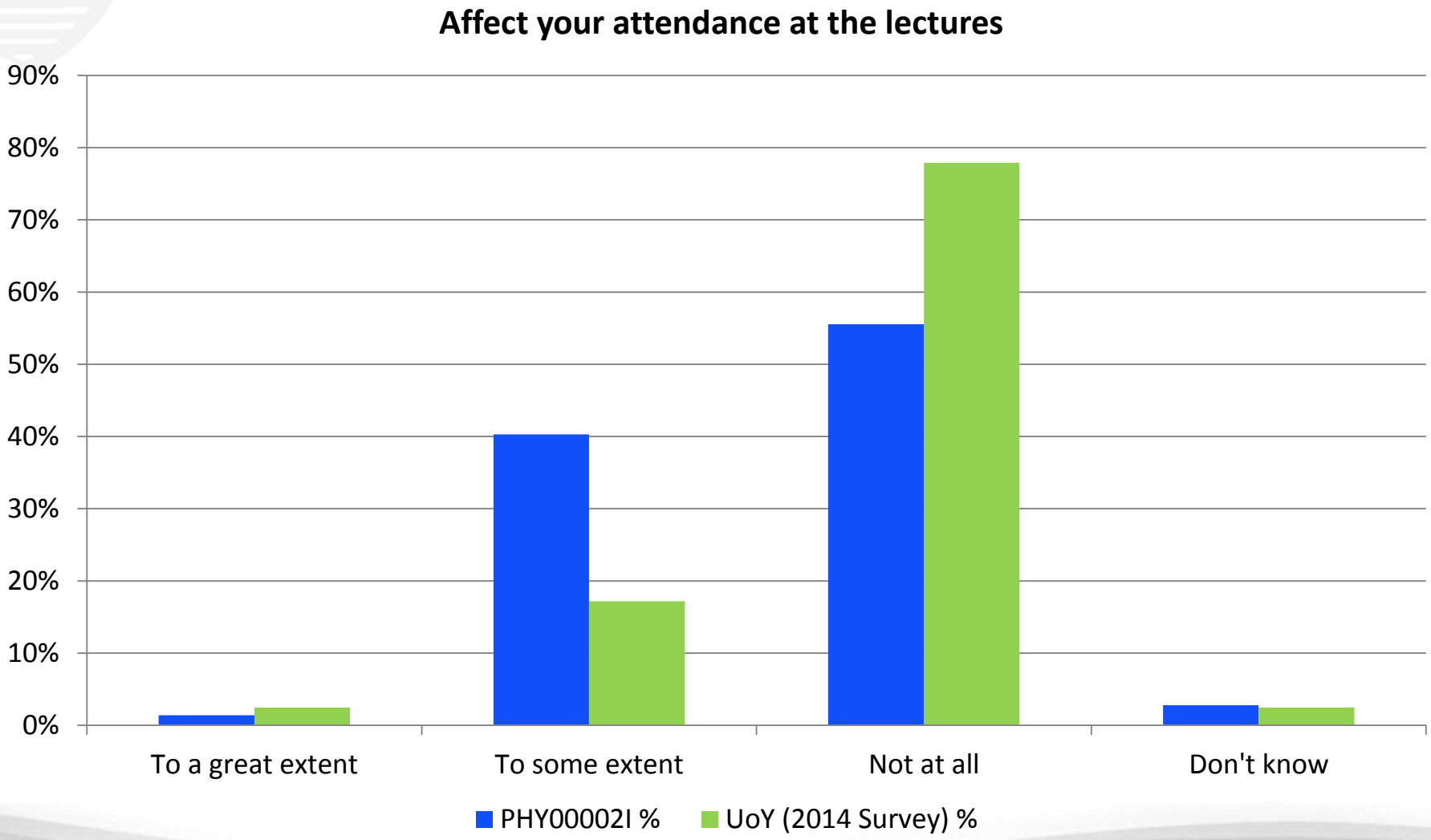
E-Learning Development Team,

Academic Support Office

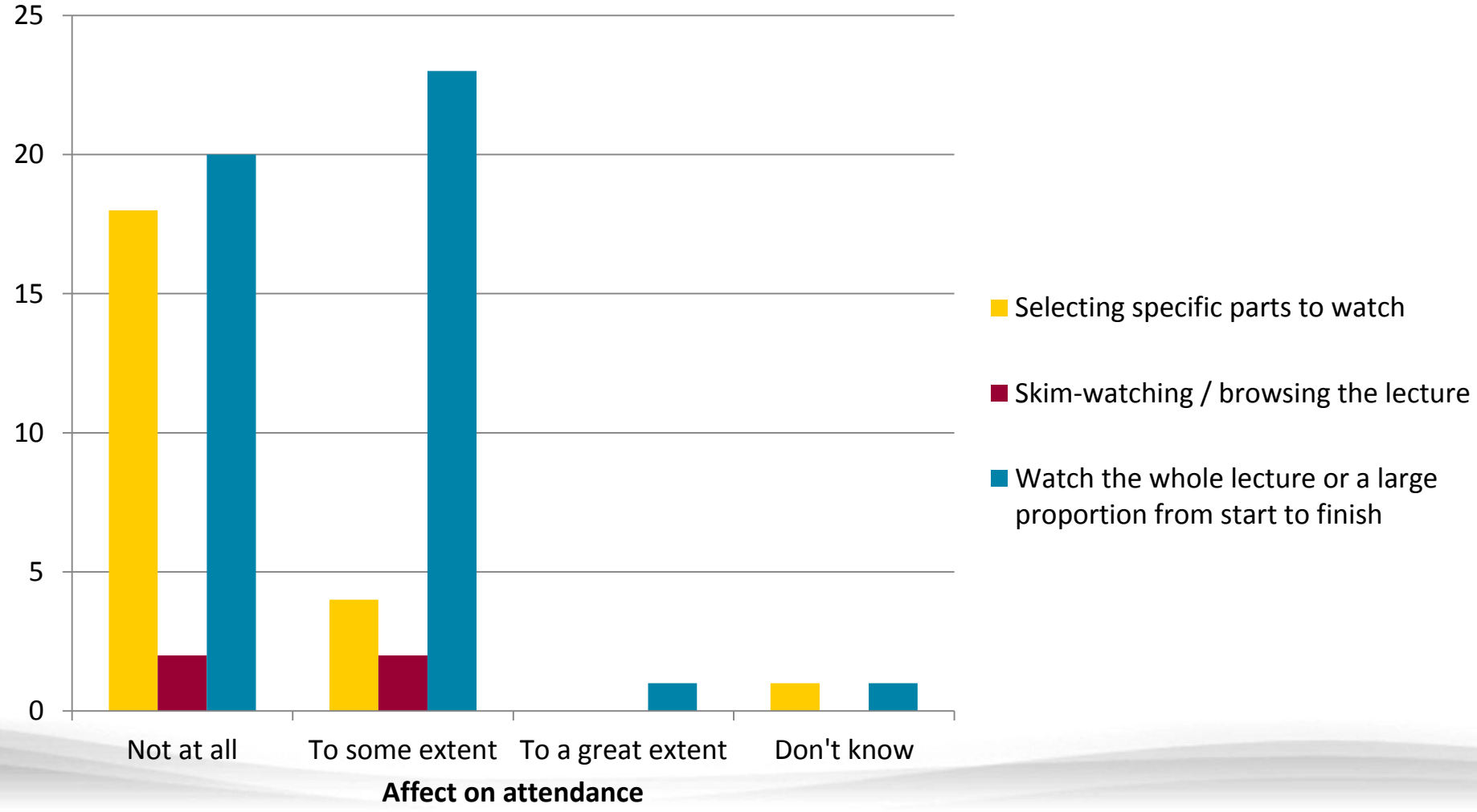
Patterns of use



Student attendance



Viewing approach



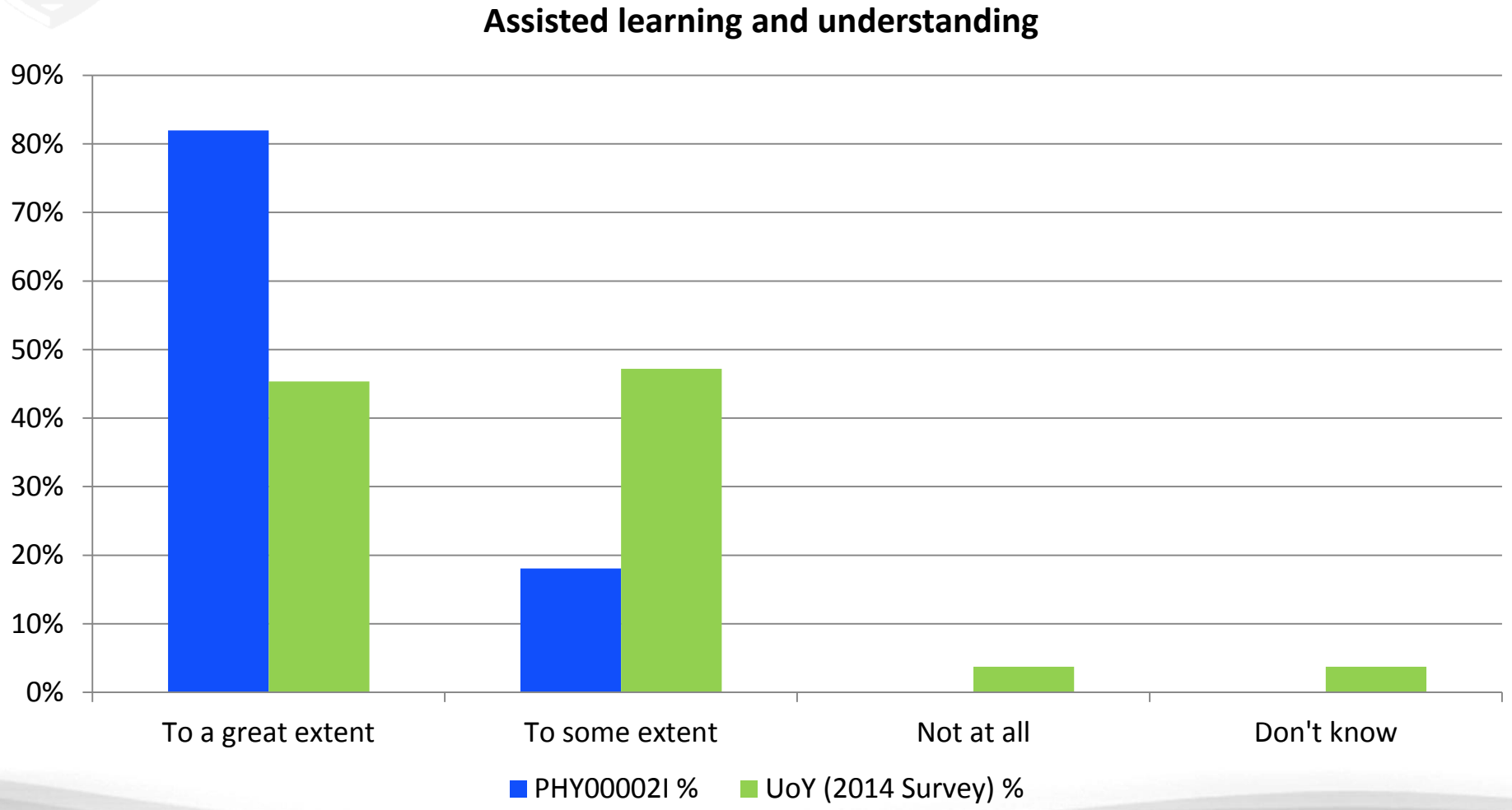
Value of lecture notes

It takes the **pressure off** in lectures and allows me to **really listen** instead of having to make sure I've written the board notes.

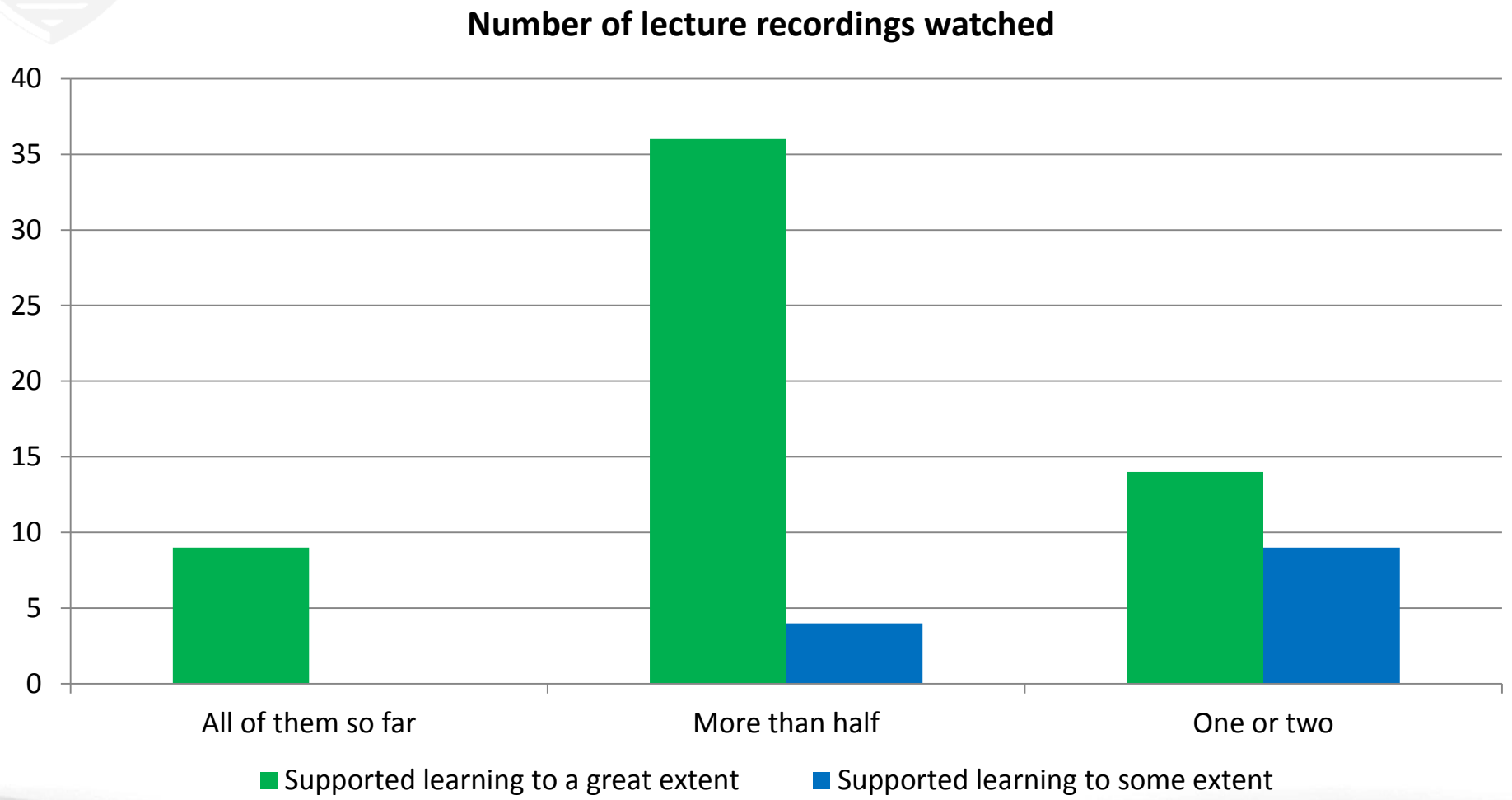
To improve the **quality and coherency** of my lecture notes, as well as to help consolidate and learn difficult concepts

Allows me to create a better set of notes and have a **deeper understanding**.

Student perceptions



Study viewing patterns



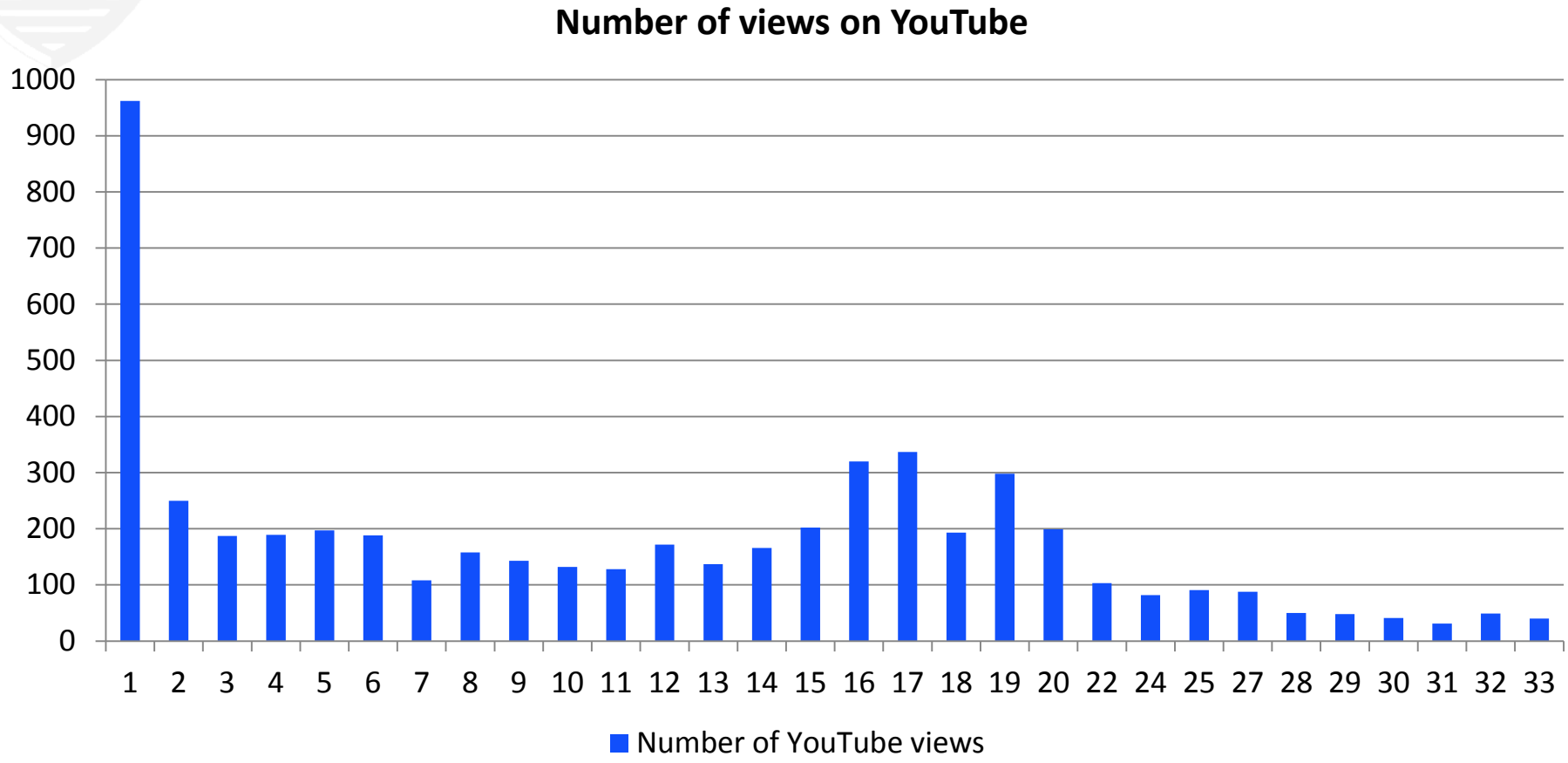
Supporting learning

If there was a particularly **complicated derivation** or calculation it was useful to be able to watch through it **multiple times** until I got it.

Sometimes I would miss a point… I would watch it again with the ability to **rewind and pause**.

[It helped me] with revision when attempting **weekly problems**.

Views by Lecture



Note the ‘bump’ for L16 – L19 (Optics)

Final Remarks

- Lecture Recordings are part of an integrated blended learning approach (VLE site)
- Very popular with students
- Seem to have had a significant positive effect on the exam performance in Electromagnetism & Optics this year