

- Apple iBooks (interactive problems)
- Note-taking of theory
- Summary video
- Self assessment

Aeronautics [5]

- "Fully online teambased learning experiences"
- "Interactive online workshops with large cohorts"

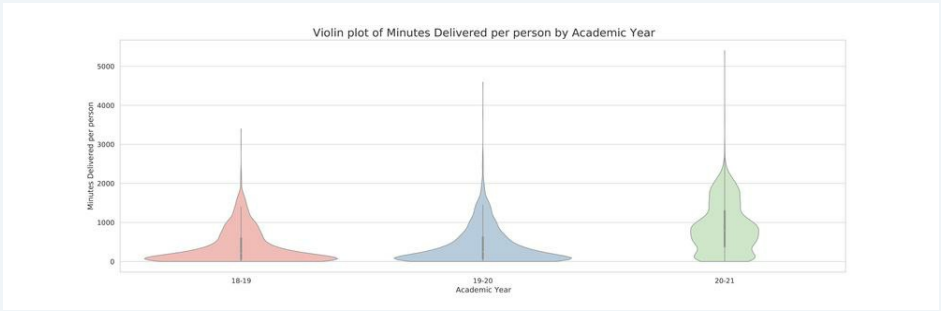
Biomedical Sciences [6]

- Labs consist of working "through instructions provided in a Jupyter notebook, with support from demonstrators - provided in Microsoft Teams and in a Blackboard discussion forum during remote delivery"

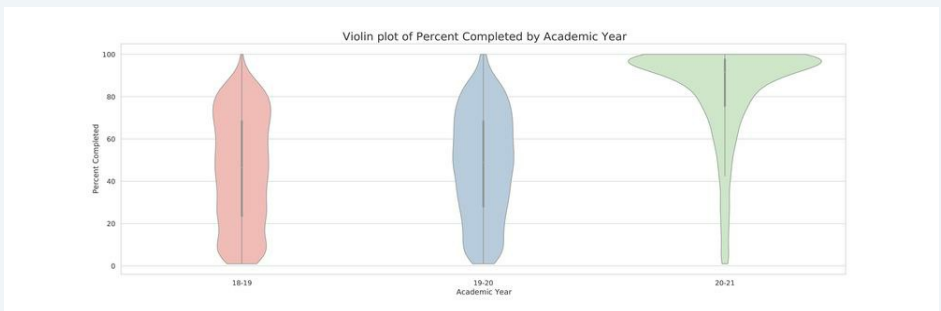
Chemistry (First Year) [7]

Case Studies

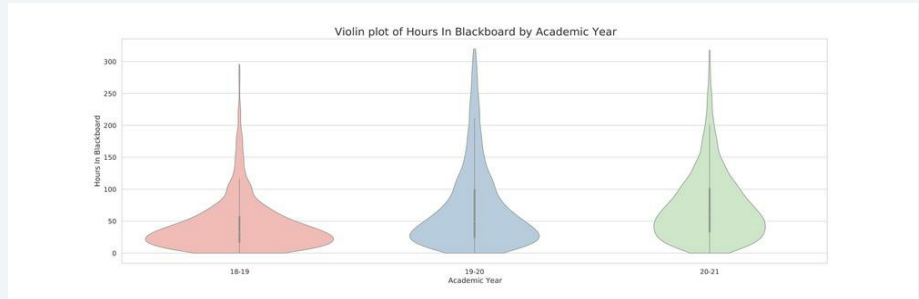
As a result of COVID-19, all departments at Imperial College moved to fully online learning in March 2020. This carried on for the entirety of the 20-21 academic year, although there was a limited number of noncompulsory in-person sessions such as problems classes at the start of the academic year.



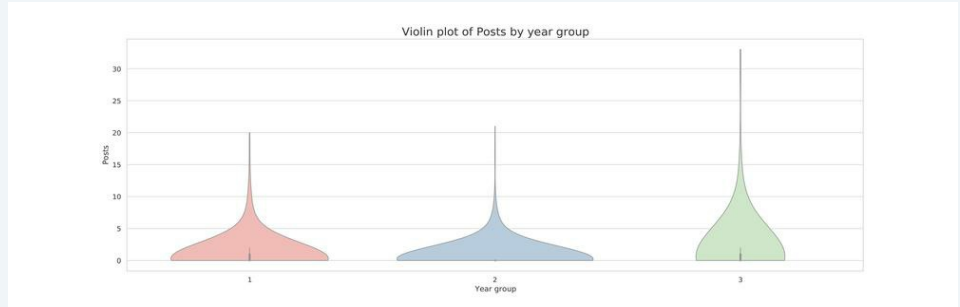
These violin plots show the number of minutes of a given module's videos delivered per person split by academic year. It shows that students were much more engaged with Panopto in 20-21 than in previous years. This is most likely because 20-21 was the only academic year during which there were no live lectures.



These violin plots show the percentage of a given video that was viewed by a given student split by academic year. In previous years, most students did not watch a video to completion. In the 20-21 academic year, though, the vast majority of students watched videos to completion. This is again most likely because 20-21 was the only academic year during which there were no live lectures.



These violin plots show the number of hours spent on a given module's Blackboard page by a given student split by academic year. There is a slight increase in time spent on Blackboard from 18-19 to 19-20, which could be attributed to the shift from in-person to remote learning in March of 2020. There is a further increase from 19-20 to 20-21, which is very likely to be a result of the fully online teaching and learning strategy of 20-21.



These violin plots show the number of posts by students on a given module's Piazza page split by year group. Students in year 3 post more than the other two year groups, perhaps due to the complex material taught in year 3 modules. It is also worth noting that in all three year groups, most students did not post at all.

Note: In-depth data analysis can be found in the full report.

What Is Blended Learning?

Traditional learning

Traditional learning covers any teaching strategy that includes only face-to-face interactions between teachers and students

Blended learning

Blended learning "designates the range of possibilities presented by combining Internet and digital media with established classroom forms that require the physical co-presence of teacher and students." [3]

Blended learning strategies include at least one offline component and at least one online component, for example online lectures and face-to-face problems classes.

What is the impact of the shift towards blended learning on student engagement with online resources?

Effects of Blended Learning

Benefits

A more individualised learning experience [8]

Accommodates a variety of learning styles [8]

Improved academic achievement [8]

More opportunities for 'learner-to-learner' support [8]

Students are involved in active learning and required to process and reflect on the given information and actively communicate with peers [9]

Improved "student involvement, self-efficacy and self-directed learning" [10]

52% of students felt less tired after class and 70% noticed an increased ability to plan 'free time' [10]

Flexibility to study anytime and anywhere [8]

Drawbacks

Students who had more online classes rated their professors' teaching 'lower' and online learning interactions were described as 'lower quality' [12]

There is a trend that students who took a larger proportion of online classes did not engage in collaboration as much [12]

48% of students felt a "deficiency in communication" with other students and 44% noticed the lack of "live discussions with lecturers" [11]

Increased difficulty in concentrating during online lectures, inability to absorb material and procrastination [11]

Panopto

Blackboard

Piazza

Data from Panopto, Blackboard, and Piazza was analysed

Data Analysis