# Case study - Live-streaming of lectures to YouTube

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### How it started - James' story

About four years ago I was working with James, a very bright first year undergraduate student. One day, shortly before a lecture on reaction kinetics, I came across a rather agitated and tearful James. He told me that he was considering withdrawing from University, because "*often the voices in my head get too loud, things get too confusing, there are too many people and I just simply cannot cope. I cannot go to lectures"*. I tried to assure James that as long as he did all the work everything would be fine. However, it was clear that the traditional format of teaching was challenging for James. I could not figure out a solution for him - surely there was nothing that could be done, bar me teaching the material in 1-to-1 sessions at his house?

A solution presented itself a few days later, when my son asked whether he could sign up for a 'Twitch'-account. I learned that 'Twitch' was a streaming platform where one could watch people playing online games. People could even interact with each other through comment boxes, giving advice on what players should do in a particular situation.

Could this be the solution to James' problem? Could I use online streaming to deliver teaching, with students interacting through comment boxes?

After streaming two workshops from my desktop computer to Facebook, which also offered a live-streaming option, I asked students about their views. The response was overwhelmingly positive - many students told me how much they liked the live-streams and especially that they could ask questions via the comment box. A majority of students said they preferred the live-streams over face-to-face teaching, however, some requested that I still continue with physical lectures or asked to have both.

Encouraged by the positive feedback I investigated how to adapt live-streaming to my way of teaching: I prefer a 'developing' approach, guiding students step by step through real-life problems. I also engage with students in the lecture theatre by walking around and having discussions with them.

After extensive trial-and-error I found that the most reliable delivery of a live-streamed lecture was with an iPad Pro and a streaming service called 'Omlet Arcade', which allows live-streaming to YouTube. I decided against Facebook, since some students did not want to use this platform.

The transmission of the live-streams is via the University's Eduroam WIFI network; and the Omlet Arcade app on the iPad. The live-streams are screened in the lecture theatre via an internet browser on the desktop computer, connected to a data projector.

To facilitate the interaction with students, the comment section on the YouTube channel had initially been activated. However, some students in the lecture theatre found the comments distracting (see below); therefore comments were disabled and only answered by me after the teaching session.

## Lecturer's perspective

When I initiated the live-streaming of lectures to social media, I wanted to improve the student experience of those students unable to attend lectures in person, due to mental health issues. However, I realized that this approach had benefits for a much larger group of students, e.g. students with caring responsibilities and commuting students. Further benefits are that live-streams are easy to schedule and deploy without timetabling constraints, eg availability of suitable teaching spaces.

I decided to use YouTube as a platform for live-streams since all students are familiar with it and its chat function. Furthermore, all live-streams are automatically saved to YouTube and hence students have a collection of lecture recordings, which they find useful for revisions. An example of a typical live-stream of a lecture can be found at my YouTube channel pk11kent at [https://youtu.be/rzWh_vMKtGA?t=560](https://youtu.be/rzWh_vMKtGA?t=560)

## What students think

All teaching sessions in the BI308 – Skills for Bioscientists were live-streamed to YouTube DURING in-class lectures in the academic year 2018/19 and 2019/20. Students of both year cohorts were surveyed through an online survey, and a total of 140 responses (from a combined 520 students) were received. When asked about their views on live-streamed lectures, 98.7% reported a positive impact:

*"Very informative and interactive."*

*"I think it really good as it means that even if i am not in a workshop/lecture i can still follow live."*

*"It is a good way for those that cannot physically attend a lecture to still be able to learn the material and to not fall behind. It is also helpful for learners that take more time to process things as there is the option to rewind if confused."*

*"My days are quite busy on a Friday and so it makes it easier for me to sometimes watch the lecture wherever I am and if I cannot make it to the lecture theatre."*

*"…learning from home allows me access to instantly google queries I have, more space to relax and focus on the material taught"*

*"It is very convenient, especially for the people who may not be able to attend but still want to interact in real time."*

*"I like it, as I'm someone who likes to work in a quieter environment, so if I want to watch it elsewhere but not fall behind it's very useful."*

Some interesting aspects were mentioned by students with disabilities:

*"[live-streamed sessions] … are great for when I am too overwhelmed to go to the workshops. They are also easy to access for revision."*

A student with visual impairment said, *"...it allows me to open the live-stream on my tablet as the projecting board is quite far and the lights in the theatre/room hurts my eyes, so having live-stream helps me to actually see the situation upclose."*

*"I am partly deaf but with the YouTube stream I can turn on the automatic close caption function and do not have to focus on lip-reading."*

A student with mobility issues affecting their handwriting said "*I take screenshots from the YouTube live-stream which I then annotate on my laptop during the session*".

Some students reported that they preferred the live-streams being accessible on YouTube rather than on KentPlayer and Moodle:

*"Useful, as it is streamed at the same time as the lecture and uploaded as soon as the lecture is finished unlike Kent player"*

*"Can watch it at the same time as the lectures are happening, the videos are up instantly as opposed to a few days/weeks later like with the Kent player, the quality is better and YouTube is a better platform to watch videos on than Kent player."*

*"I prefer the live streaming ... it is a better system and easier to handle rather than the Kent moodle website which does not have that many features - such as putting it to full screen."*

## Potential issues

Initially, some live-streams suffered occasionally from technical problems, e.g. lag or buffering. However, with the correct settings these problems could be swiftly addressed.

Comments that students made during the live-streams were sometimes another issue: As stated above, originally the comments were intended to help students to interact with the instructor by asking relevant questions during the sessions. However, it became clear that some students used this function for discussions not related to the lecture. Feedback from students was:

*"Comments can be a bit distracting but it does makes the lecture more lively and makes us more engaged"*

*"Comments may be a distraction sometimes…"*

*"Real time comments (when enabled) are not always helpful, constructive or relevant which can lead to people being distracted."*

I therefore decided not to make the comments visible to students in the lecture theatre.

Some students and colleagues expressed concerns that attendance in lectures might decline, however, I am not overly concerned about this issue, since a reduced attendance in the lecture

might be off-set by an increased engagement of students with the live-stream. Indeed, according to YouTube statistics  a live-streamed session receives over 100 views on average, indicating that students are engaging.

## Dissemination and future perspective

To me it is clear that live-streaming of teaching sessions gives students additional choice for their learning. I can also see the advantages of this approach for distant learning and students on placements and apprenticeships. It can engage students who otherwise could not attend face-to-face teaching. Live-streams are highly cost-effective and can be delivered to an unlimited number of students via already existing technologies.

For my pilot project on 'Live-streaming of teaching to Facebook', I have been named as one of JISC's 2017 **top ten Higher Education Social Media Superstars** https://goo.gl/WX1jZE, also mentioned in the THES  https://goo.gl/BiYFnJ.

A case study of my experience can be found at
Klappa, Peter (2019) Lectures in a virtual space - live-streaming on Facebook. In: Bilham, Tim, ed. Reframing space for learning: Empowering Excellence and Innovation in University Teaching and Learning, 2019, Palgrave MacMillan.

**Final note:** James intermitted for a year to receive appropriate treatment and is expected to graduate with a first class degree in July 2020.