

Enhancing Student Engagement in First Year Chemistry Laboratories.

A presentation by Justine Barrett & Charlie Duddridge



The starting point - defining the objectives:

- To ensure integrity and quality of the course. (I.e., to ensure that students felt that value for money wasn't being compromised).
- To ensure students were prepared and safe to perform laboratory skills.
- To build rapport with students.
- To build student confidence and competency in the laboratory:
 - With the laboratory environment
 - With chemical handling



The current approach:

As well as the practical application of theoretical knowledge current laboratory approaches provided a lot of **peripheral content** including:

- Preparatory content (preparatory tasks)
- Laboratory safety advice
- Laboratory housekeeping advice for efficient laboratory workflow practices:
 - Equipment set ups
 - Observation and data recording techniques
 - Glassware labeling and handling
 - Group work
- Calculations and Reporting
- Demonstration
- Assessment Requirements



Creating a new approach - why video?

- Create meaning through synchronization and sequencing of audio-visual content.
- We could capture physical demonstrations and/or simulate expectations of the lab environment using equipment and/or chemicals so students could see and hear what they could expect during the experiments.
- We could use props and/or incorporate graphics to draw attention to key messages.
- Video offered a communication platform allowing a friendly and accessible tone to be established between the students and teacher through verbal and non-verbal language – a key ingredient for building student engagement and rapport.
- On-demand - students could review and revisit as many times as they liked at their own pace.



Key Messages

- **Make room for your personality and define your own role** as the teacher and get comfortable - don't modify your teaching style because the camera is rolling. You will come across more authentic and this is important in building rapport - students getting to know who you are is a large part of making you approachable to them in class AND online.
- **Make room for spontaneity** – you can't plan for everything and there is value in the spontaneous - where we can be free to create in the moment (sometimes over-planning and conformity to plans can suffocate this.) We allow for this in our face-to-face environments and shouldn't be deprived just because we go digital!
- **Feeling vulnerable isn't a bad thing!** It's what we ask of our students who are often doing things for the very first time and it helps to tap into a sense of vulnerability - you can engage if you share the experience.
- **Don't make requests of your students that you aren't prepared to do yourself** – e.g., we asked students to make videos for assessment where they might use their creativity – so we did too: by providing an all singing and all dancing exemplar! Justine – singer and dancer; Charlie – lyricist extraordinaire!
- **Be brave and take risks** – you won't know if it'll work unless you try it out first.

