Does moving oral presentations online affect students’ performance?

Stephen E. Potts, Mike Kelly and Jadranka Butorac

ViCEPHEC 2021

✉️ s.potts@ucl.ac.uk
🐦 @StephenEPotts
Symposium for Advanced Chemistry Research Projects (SARPIC)

• Each fourth-year M.Sc. student presents their work (15 min).
• Run as a full conference with parallel sessions.

Then came COVID-19!

• Presentations are a key skill and are fulfilling for students, even distance learners (McDougall & Holden, 2017).
• Move online using Blackboard Collaborate Ultra.
• Challenges:
  – Not a genuine “experience”? Presenters miss audience cues online (York & Hayes, 2015).
  – General confidence with the technology (staff and students).
  – Inevitable technical problems.

## Approaches

<table>
<thead>
<tr>
<th>Ac. Year(s)</th>
<th>2015/16 – 2018/19</th>
<th>2019/20</th>
<th>2020/21</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students</td>
<td>292</td>
<td>67</td>
<td>52</td>
</tr>
<tr>
<td>Delivery</td>
<td>Live delivery in person in a lecture theatre.</td>
<td>Pre-recorded PowerPoint presentations (720 p). Played during online seminar, live optional.</td>
<td>Live delivery online. Pre-recorded presentations used as backup only.</td>
</tr>
<tr>
<td>Rationale</td>
<td>This is (was?) the norm.</td>
<td>Minimised risk of multiple technical problems, reduces stress/anxiety (Nelling, 2013).</td>
<td>Technical problems less prominent than expected. A more genuine experience?</td>
</tr>
</tbody>
</table>

- Marks from each delivery method above were analysed using t-tests and one-way ANOVA (SPSS).
- Qualitative feedback from students taken.

Challenge: Confidence with Blackboard Collaborate

All staff and students were given full training and practice on Blackboard Collaborate. Each session included two chairs.

**Subject Chair**
- Introduced talks.
- Led the questions.

**Technical Chair**
- Lined up the videos on their computer (Google Chrome) and played them.
- Managed the “roles” of students and speakers.

**Benefits**
- A backup chair if technical issues arose.
- Reduced cognitive load for chairs.
# Student Marks

<table>
<thead>
<tr>
<th>Delivery</th>
<th>Live, in person</th>
<th>Pre-recorded, online</th>
<th>Live, online</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Academic Years</strong></td>
<td>2015/16 – 2018/19</td>
<td>2019/20</td>
<td>2020/21</td>
</tr>
<tr>
<td><strong>Students</strong></td>
<td>292</td>
<td>67</td>
<td>52</td>
</tr>
<tr>
<td><strong>Mean Mark / %</strong></td>
<td>71.34</td>
<td>73.34</td>
<td>71.58</td>
</tr>
<tr>
<td><strong>Std. Dev.</strong></td>
<td>7.06</td>
<td>5.31</td>
<td>5.48</td>
</tr>
</tbody>
</table>

One-Way ANOVA
- $F = 2.493$.
- $p = 0.084$.

T-tests were performed to check pairs of data.

- $t = 2.180$, $p = 0.030$.
- $t = -1.770$, $p = 0.079$.
- $t = 0.234$, $p = 0.815$.
Students’ Views

Initially when I heard that SARPIC was going to be online last year I was a little disappointed because I had been so looking forward to getting together with everyone to see and discuss the research in person. In the end the fact it was online didn’t make any difference, it was the perfect way to end the masters and 4 years of undergraduate study by being able to proudly share and enjoy what I and my peers had accomplished during this time. It was obvious how much time and thought had gone into the planning and arrangements.

Prerecording the talk was much less stressful than giving it live!

Giving an online talk was a unique challenge and quite different to the in person talk I was expecting. It was probably easier than giving the talk to a live audience as I could sit in my bedroom and deliver it in a very comfortable environment. The SARPIC sessions were all very well run and gave me confidence to give subsequent online presentations as the pandemic has continued.
Conclusions

• Moving online was **not detrimental** to students’ performance.
  – Marks not significantly different for live presentations.
  – Training in software necessary for students and staff.
  – Minimal technical issues and two chairs made the process smoother.

• Pre-recording produced a higher average mark than presenting in person.
  – **Reduced anxiety** about presenting.
  – Ability to correct mistakes and **make it “perfect”** in advance.
  – Are we assessing the same skills?
Acknowledgements

SARPIC Organisers
• Prof. Sally Price
• Prof. Paul McMillan
• Prof. Matt Powner

All the year 4 students

ViCEPHEC 2021 Organisers
• Dr Linnea Soler
• Dr Smita Odedra

Technical Chairs
• Dr Jamie Baker
• Dr Matt Blunt
• Prof. Katherine Holt
• Dr Dewi Lewis
• Prof. Mike Porter
• Dr Anna Roffey