A Virtual Open-Door Policy: Analysis of Virtual Interactions and Connectedness in an Asynchronous Module During COVID-19
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1. Background

1. Retaining the feeling of connectedness in online learning continues to be a challenge\(^1\), especially during COVID-19\(^1\).
2. In 2020/21 academic year, the fourth-year chemistry course Advanced Research Concepts in Chemistry (ARCtIC) became asynchronous.

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<th>Table 1 – Structure of the ARCtIC module prior to and during COVID</th>
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<td>Before 2020/21</td>
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2. Methodology

What types of virtual social interaction are students having with each other and the lecturers?

To what extent do students feel connected, based on their experiences?

To what extent has online interactions and connectedness affected perceived ability and willingness to learn lecture course content?

This research is an example of endogenous research\(^2\), in which the researcher studies the ARCtIC course and the lecture courses in question, Metals in Medicine (MiM) and Medicinal Chemistry II (MC2).

3. Results

Overview of Results:

1. Generally, students preferred to work alone, but would have preferred more collaboration opportunities (Figure 1).
2. Students were embarrassed to ask silly questions online, but thought a discussion board could combat this (Figures 1 & quotes).
3. Students felt the course was too easy, so didn’t feel the need to contact peers (see Figure 2).
4. Students felt disconnected, and felt this had a negative impact on their ability to learn.
5. Potential gender difference in females feeling more uncomfortable approaching lecturers and peers online.

Figure 1 – Bar chart illustrating reasons for not contacting peers. Percentages represent percentage of participants that selected that response. MiM (N=20), MC2 (Medicinal Chemistry 2) (N=15).

- Unsure how to contact
- Other
- Prefer to ask lecturer
- Uncomfortable
- Nobody contacted me
- No queries

On average, 76% of participants felt much less connected to their peers during COVID. On average, 54% of participants felt that their perceived feeling of connectedness to their peers has had a negative impact on their ability to learn.

Figure 2 – Diverging stacked bar chart indicating the percentage of participants that responded to the statements indicated on the left, using the scale in the legend. MiM (Metals in Medicine) (N=20), MC2 (Medicinal Chemistry 2) (N=15).

Laboratory Connectedness Lost

‘You talked to such a variety of different people in labs as well normally. It felt a lot less connected in that way.’ (Student)

Small Queries Bother Lecturers

‘If you’ve got a small question which is getting in the way of you understanding a lot of other stuff, that small thing feels like a tiny, tiny thing to be bothering someone about.’ (Student)

Connectedness Through Common Struggles

‘I think that’s one of the most important things for me about feeling connected to people is knowing that other people are struggling with something. And especially if you’ve got a common denominator of what you might be struggling with too.’ (Student)

Embarrassment of Asking a Silly Question Online

Being able to post queries anonymously would help with the anxiety of asking a potentially stupid question. (Student)

Lack of Active Learning Opportunities

‘When I’m just listening to it on the screen, I think I get it, and then when I start doing the workshops and stuff, I’m like I don’t understand this, but because they haven’t given us anything to try like that, I haven’t got a clue if I get it or not.’ (Student)

4. Conclusions & Recommendations

Conclusions

1. Students may communicate and feel more connected if this communication is facilitated by the lecturer\(^2\).
2. ARCtIC is too didactic, causing a lack of active learning opportunities and lack of interaction between students and lecturers\(^4\).
3. Online learning has created more barriers for people to seek help, and so students only do so strategically, only when necessary\(^2\).
4. There was a striking lack of engagement with online learning, and cultural and societal norms could be a factor\(^4\).

Recommendations

1. Implement a discussion board to the course, to decrease barriers for getting in touch, and to increase connectedness with the lecturer.
2. Provide more active learning opportunities in the course, such as a group coursework component to develop deeper learning of content with others.
3. Split in-person lectures into chunks, with regular breaks to digest knowledge and ask questions on the spot.
4. Consider implementing a flipped learning model, in which students will be more engaged with compulsory online and in-person learning.

5. References

5. S. K. Barber, Strategic Help Seeking, 2012