

# IMPACT OF COVID-19: STUDENTS' EMOTIONAL ENGAGEMENT WITH FACE-TO-FACE LABS TRANSITING TO ONLINE MODE

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During semester 1 of 2020, which was disrupted by COVID-19, first year physics students at The University of Sydney undertook three face-to-face labs, followed by a 3-week break, and 4 totally online labs. Using the Achievement Emotions Questionnaire, AEQ- PhysicsPrac (Pekrun, Goetz, & Perry, 2005; Bhansali & Sharma, 2019) we probed students' emotions towards Physics labs during this time of pandemic and compared them to emotions measured previously in the regular face-to-face labs. Our sample consisted of 100 students who were given the survey towards the end of semester 1 of 2020. Comparison with regular electricity experiments in semester 2 of 2018 with 117 students showed that students' anxiety increased during COVID-19. We also compared students' emotions with 2 experiments from semester 1 of 2018; a control experiment with black and white lab notes which was perceived by 133 students as quite negatively emotionally engaging, and an intervention practical with a short, colourful, historical story which was perceived by 187 students as positively emotionally engaging (Bhansali & Sharma, 2019). Intriguingly, our comparison showed that the emotions reported during COVID-19 were somewhere in between those reported for the control and intervention. The COVID-19 labs had decreased enjoyment, and increased anxiety and hopelessness when compared with the intervention; while COVID-19 labs had increased pride and anxiety, and decreased boredom when compared with the control. This paper focuses on the implications of our findings in terms of the influence of the reported emotions on students' attention, focus and the will to continue studies.

## REFERENCES

- Bhansali, A., & Sharma, M. D. (2019). The Achievement Emotions Questionnaire: Validation and implementation for undergraduate physics practicals. *International Journal of Innovation in Science and Mathematics Education*, 27 (9), 34-46.
- Pekrun, R., Goetz, T., & Perry, R. P. (2005). *Achievement Emotions Questionnaire (AEQ)—User's manual*. Munich: University of Munich, Department of Psychology.

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