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Type: **Talk**

Contributed talk: Structured to open-ended at home experiments for first year physics labs.

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As with many colleagues the pandemic necessitated a rapid shift to remote laboratory activities in Newcastle where we were in lockdown for almost the entire academic year. I will reflect on the experience of planning, developing and running remote first year physics labs this year. Students had already learned Matlab and had produced a portfolio with structured worksheets intended to build data plotting and analysis skills. After Christmas students received an experiment box in the post containing everything they needed to construct their own spectrometer and calibration circuit. The aim being to provide students with hands on experimental and problem-solving skills.

Students were guided through a series of build workshops in groups of ~10 via breakout rooms during 2 x 1.5 hr live online sessions per week supported by 3 academic staff and 6 PGR's for a class of ~80. Groups retained the same PGR helper throughout. Following the build and calibrate sessions students were then asked to devise their own experiment using their spectrometer; ideas were discussed in a workshop with the PGR helpers.

Despite the remote nature of these activities and a move to a more open experiment style; we saw a slight improvement in student engagement and assessment scores as compared to the previous year with in-person labs.

Region

UK/Ireland

Key words

at home labs, open ended experiments

Authors: DYSON, Angela (Newcastle University); HEALY, Noel (Newcastle University); MARINHEIRO, Tiago (Newcastle University)

Presenter: DYSON, Angela (Newcastle University)

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