

Through refurbishment and lockdown: an unprecedented evolution

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Abstract

Chemistry laboratory teaching has undergone a development that started with an expansion and a refurbishment of our teaching spaces at the University of Southampton. This was in part interrupted and then continued during the pandemic-induced lockdown. The lab courses have had limited time to evolve afterwards – if there has been an end to it already – but this contribution highlights the process and outcome up to and including the past academic year.

This time-line directs to the University of Southampton's response to the recent imperatives in chemistry education. During the pandemic students had very limited access to laboratory training and at times none at all, however, laboratory time has always been precious, and educators constantly had to rethink their approach to lab classes; how to best assess their practical learning goals and how to best focus students on the practical aspects during the timetabled – and therefore time-limited – lab classes. A timeline divided into “pre” – “during” – “post” governs the teaching split of our typical lab instruction.

Our PRE-LAB phase involves preparation for the practical work through a virtual learning environment and library resources. During this phase that is similar to flipped lecture-instruction, the theory background is addressed, and laboratory techniques explained. During the IN-LAB phase skills are developed and tested while a practical is performed, the learning accentuates a “doing, applying” mode. In the POST-LAB phase results and knowledge are consolidated and reported.

This contribution emphasises the evolution of Sotonian laboratory training, how the resources and types of resources changed, how student participation in the lab improved, how the pandemic influenced the positioning of teaching activities and informed a development of our assessment strategy; in summary, where the rethinking process has led to so far – acknowledging that also this stage is not the end but an interim position, subject to future improvements.

[1] Logothetis, T.A, Flowers, C.M., *J. Chem. Educ.*, **2020**, *97*, 3018-3022.