# THE MYRIAD POSITIVE IMPACTS OF THE VIRTUAL LEARNING ENVIRONMENT, FROM LABSIMS TO SMART WORKSHEETS (A 17 YEAR JOURNEY)

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## PROBLEM

Introducing a virtual learning environment (VLE) in support of practical teaching in Chemistry is not trivial. In this study we identify keys areas which are essential for successful implementation based on 17 years of experience.

## PLAN

We have analysed a range of metrics from first initiating a VLE in the Centre for Excellence in Teaching and Learning (CETL) called Bristol CemLabS in 2006 and compare and contrast a similar implementation in the Faculty of Natural Sciences at The University of the Western Cape in South Africa in 2020.

## ACTION

There are strong similarities in both environments following implementation of a VLE. Raising of confidence of students in using instruments and carrying out techniques found in an undergraduate chemistry laboratory is clear, increasing students understanding of the theory behind techniques and their real appreciation of health and safety. For demonstrators, their role changes from one where they are giving instruction to one where they are discussing the development of the practical investigation with the students. For academics, the transformation in ability of students, and long-term impacts on practical ability and final year projects that can be undertaken are noted.

## REFLECTION

The transformation in both case studies was pretty much instant and irreversible for the students. Key elements required are strong IT support, strong collaboration between staff, demonstrators and technical staff. The main question to ask is why did we take so long to do this?

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