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**Using virtual reality laboratories to improve engagement and understanding for wet laboratory practical sessions**

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## **SEB MEETING FLORENCE 3-6<sup>TH</sup> JULY: Masters of Biology**

### **Session: (SEB+) Teaching biology at different scales: Challenges, opportunities and strategies**

**TITLE** Using virtual reality laboratories to improve engagement and understanding for wet laboratory practical sessions

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University of Westminster has a large entry intake into its various Bioscience degree pathways. Incoming students have a wide range of entry qualifications and laboratory experience. Practical sessions are expensive and take time and often require students to work in groups. Further, many current cutting edge biological techniques are often too time consuming or too expensive to run as a large scale taught practical session. To try to improve student confidence and engagement in actual practical classes we have made a range of virtual laboratory simulations available to the students. Thus, the virtual laboratory is used to provide context and as an alternative learning experience to the theory taught in class.

The aim of this study is to evaluate if such virtual simulations promote student learning; and whether the rationale for academic staff deployment of such resources align with student reasons for utilizing.

Virtual laboratory simulations have been embedded into a number of foundation, undergraduate and post-graduate modules, for both formative and summative assessment. Students self-reported that the simulations improved understanding through survey responses. We report how this questionnaire data is enriched with qualitative data from small group interviews from students, these have focused on student engagement and whether these virtual laboratory simulations have enhanced learning. Moreover, we examine the student reasons for engaging with, or not, such resources.