

An investigation into the breadth of learning outcomes and skills developed in OpenSTEM Labs experiments

Dr Helen Lockett, Dr James Smith, Mr Kevin Gowans



Background

The OpenSTEM Labs (OSL) deliver authentic practical experiences to our distance learning students in STEM subjects using real time instrumentation, data and equipment for practical enquiries over the internet. This project will improve our understanding of which types of experiments, interactions and assessments best develop student skills and learning outcomes. The project will benefit staff by making it easier to design effective experiments that contribute to student success and progression. It will also help module teams to find information about existing OSL experiments for possible reuse. The project will benefit students by enhancing the use of the OpenSTEM Labs in our teaching.

What we are intending to do

The aim of the project is to explore the breadth of learning outcomes, skills and assessment types in OpenSTEM Labs activities and develop a learning design tool to inform future OpenSTEM Labs activities.

How will we do it

We will

- develop a taxonomy of remote/ onscreen laboratory activity types, learning outcomes and assessments focusing on the OU context and undertake a systematic review of existing OpenSTEM Labs activities using the developed taxonomy
- Create a searchable spreadsheet/ database of existing OpenSTEM Labs activities
- Create a design tool that can be used by module teams to design remote/onscreen lab activities with appropriate learning outcomes from the early stages of the module production process

What we hope to achieve

- Define a taxonomy of remote/ onscreen laboratory activities and associated learning outcomes
- Map all existing OpenSTEM Labs activities and classify them according to the developed taxonomy
- Create a searchable spreadsheet of activities, learning outcomes and assessment types
- Use the developed taxonomy and spreadsheet to develop materials that could be used by module teams to design remote/ onscreen laboratory activities in the future
- Test the developed approach with a module production team

