

Peer interaction for learning, assessment, feedback and confidence in undergraduate Physics.

Dr Alison Voice

Dr Samantha Pugh

A physics degree requires students to attain knowledge, understanding, skills and problem solving. Such 'Learning Gain' will be a key measure in the TEF, and likely required for IOP accreditation going forward. To develop these abilities students require regular feedback, which is time-consuming for staff. In a subject such as physics, where many questions have a specific 'right answer', students are hindered by lack of confidence if they are not sure how to start or solve a problem.

Peer interaction is a very under-used resource in physics, and could alleviate the issues mentioned above. Small peer groups can allow students to discuss their work in a 'secure' environment, and provide immediate feedback, allowing rapid development of understanding and skills.

This PhD project will investigate the use of peer group interaction (face-to-face and electronic) with respect to student learning, assessment, feedback and confidence. Group demographics (gender, friendship and ability) will be analysed as students work on the different aspects of undergraduate physics (knowledge and understanding, problem solving with 'one correct answer' and open-ended problems where a variety of ideas can be considered). A mixed methods research approach will be used (to include quantitative analysis of student performance and qualitative analysis of student behaviours and attitudes to learning). This work will inform future use of peer interaction in UG physics degrees nationally.