

Title of case study

Research Internship Module: Enhancing employability through outward mobility

Staff Lead

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Name of course and module (if applicable) case study took place within

CHEM309 - Research Internship Module

Please briefly describe the activity undertaken for the case study

To achieve the University of Liverpool Strategy 2026 goal of supporting our students to become creative and culturally rich graduates in a connected world, we are fostering new opportunities in the Department of Chemistry to increase the proportion of undergraduate students who undertake placements and study abroad.

Accordingly, we introduced a level six, credit-bearing, module in which students undertake a research internship abroad during the summer before their third year of study. The placements, which give students an international experience, along with new research skills in a professional environment, are offered to students in addition to the usual study abroad opportunities coordinated by the University.

Different selection criteria from that used by the Study Abroad Team have been applied, in order to offer inclusive opportunities to a diverse student body interested in taking challenges abroad.

Various assessment tools are used during and post internship to assess students' learning from the research undertaken as well as soft skills. Our evaluations showed that students developed their employability skills including critical thinking, independent working and communication with people from a different cultural background, in addition to learning new research skills.

How was the activity implemented?

Many British students are reluctant to leave their comfort zone and study abroad, hence increasing the number of internationally mobile students remains a challenge. Despite every effort made to promote the study abroad, only a few Chemistry students take this opportunity every year. There are also other reasons for the low number of students joining the scheme, e.g. lack of academic ability. Students with an overall average less than 60% do not meet the criteria for studying a semester abroad. In addition, the applications are made in the students' first-year of study when many students are not confident enough to submit a case, as they are still bridging the gap between school and university.

To increase the number of internationally mobile students, we decided to provide more inclusive opportunities for a diverse student body. Therefore, we adopted the Research Internship module from the School of Life Sciences and tailored it to the requirements of our department.

The module requires students to undertake a six-week research internship abroad. The assessment would be via a reflective log during their time on placement, in addition to an oral presentation and a written report to be produced on their return. This module replaces the non-compulsory components of Chemistry programmes in Year 3.

Teaching delivery:

- Two pre-departure tutorials provide students with the required information about the module including placements, assessment, code of practice of support and safety of students off-campus, insurance, etc.
- Students submit their weekly reflective logs through PebblePad, an online learning and assessment system. They reflect on the research activities which have taken place, discuss the outcomes, and write an action plan for the next week.
- A post-placement tutorial to discuss the students' experience of internship and to explain the assessment criteria.

Assessment:

- The weekly online logs and skills audits are the two important assessment tools through PebblePad, which are used to enhance students' critical thinking and employability skills. The strategy is to set short term goals via weekly communications with Liverpool supervisors to gradually enhance students' independent working skills.
- A presentation on the research work undertaken, as well as the soft skills gained during the placements evidenced by skills audits.
- A scientific report on the research undertaken, as well as a reflection on employability skills evidenced by skills audits.

Considering the Research Internship replaces the non-compulsory components in the Chemistry programme, it provides weaker students who do not meet the criteria to study a semester abroad with a lower risk internationalisation opportunity. Consequently, Chemistry students achieving an overall average of 40% in Year 1 are eligible to take this

module. Since the Research Internship is a Year 3 module, students submit their expression of interest in Year 2, when they are confident enough to take the challenges abroad. As a result, the number of internationally mobile students in our department has significantly been raised to 40% in the academic year 2018-19.

Another aspect of the course delivery is to organise research placements abroad to be undertaken during summer. The Chulalongkorn University in Bangkok, Thailand has a long-term partnership with the University of Liverpool, exchanging undergraduate and postgraduate students between the two institutions. Since the partnership already existed, we discussed and agreed on the research projects to be undertaken in the counterpart department at the Chulalongkorn. Since then we have had a generous number of placements offered by the Chulalongkorn University in addition to research projects in standalone institutions to ensure a diverse range of placements is available to our students. Thus, various placements in Thailand, China, Cyprus, Nepal, Canada and Spain were available to chemistry students in summer 2019.

Has this activity improved programme provision and student experience, if so how?

The module has improved both the Chemistry programme provision and the student experience.

- Our BSc programmes offer a platform for students to pursue careers within or outside Chemistry, or to take further postgraduate studies, whereas the MChem programmes aim at students keen on becoming professional chemists and contain a large element of chemical research. Accordingly, there is no research component embedded on to the BSc programmes. This module offers the opportunity of undertaking a research project to BSc students, which is new in our curriculum.
- The module provides weaker students who do not meet the criteria to study for a semester abroad with internationalisation opportunities, because it is a low-risk activity replacing non-compulsory components of the Chemistry programmes.
- Although research has already been embedded on to the MChem programmes, this internship gives students an insight into working in a different setting from the University of Liverpool and the UK institutions.
- The activity enhances students' cultural learning and the ability to work with a diverse group of people.
- The activity improves students' employability through mobility.
- The activity develops students' critical thinking and problem-solving

Did you experience any challenges in implementation, if so how did you overcome these?

Although the School of Life Sciences provided us with the essential framework for this module, we tailored the programme to the requirements of our programmes and students by altering the module credits, student selection criteria, assessment, module level, type of placements, etc. In order to embed the activity into the curriculum, the module must replace the non-compulsory components of Chemistry programmes with the same

number of credits. As a result, the course could be embedded into only three out of six Chemistry programmes.

Which Liverpool University Hallmarks and Attributes does this case study relate to?

Research-connected Teaching	X
Active Learning	
Authentic Assessment	
Confidence	X
Digital Fluency	
Global Citizenship	X

How does this case study relate to the Hallmarks and Attributes you have selected?

Research-connected Teaching

The module gives research experience not only to students on integrated Masters programmes, but also bachelors students who did not undertake research as part of their curriculum activities. In addition, research placements take place in a foreign professional workplace to give students an insight into working in a setting different from the University of Liverpool and the UK.

Confidence

The skills audit taken by students which evaluates their employability and transferrable skills showed significant improvement in students' confidence, resilience and independence.

Global Citizenship

As a result of introducing this activity into the curriculum, the number of internationally mobile students has significantly increased in the Department of Chemistry. In summer 2018, nineteen students took the placements abroad whereas, thirty-five students signed up for internships in summer 2019. Embedding the Research Internship into the Chemistry curriculum has increased the percentage of internationally mobile students to 40% in the academic year 2019-20.

How could this case study be transferred to other disciplines?

We have already adopted the module from the School of Life Sciences, which proves transferability from one department/school to another. Recently, the departments of Physics and Mathematics adopted the module by using the same framework and tailoring the activity to the requirements of their departments.

If someone else were to implement the activity within your case study what advice would you give them?

We will provide colleagues keen to implement this activity with the fundamental framework and advice to tailor the module to the requirements of their programmes and students. My advice is to start on a small scale with a couple of partner universities around the world. Once the structure is in place you can extend the partnership to more universities and/or countries. Another recommendation is that there is no need to exchange formal contracts between the universities, as long as the code of practice of support and safety of students off-campus is followed carefully. No complicated agreement is required while the placements are offered to a couple of students by standalone institutions.



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