

Sandwich Filling: Improving Learning Support *During* Undergraduate Bioscience Industrial Placement Years

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Abstract:

Industrial (sandwich) placement years on undergraduate bioscience degree programmes play an important role in the employability skills agenda. However as the number of students engaging with sandwich years is in decline, despite the increased emphasis on work based learning, it is essential that sandwich years are critically evaluated to determine how they can optimally support contemporary learning needs. Surprisingly, little research has been conducted into the effective delivery of sandwich years in the biosciences, or indeed other subject areas pertaining to the STEM based knowledge economy.

This project set out to establish how learning support is currently provided by UK universities *during* the placement year.

A comprehensive review of the extant literature considering sandwich placements was undertaken in order to facilitate the design of a semi-structured survey instrument. In depth telephone based interviews were conducted with faculty members acting as bioscience undergraduate industrial placement year coordinators from 20 UK-based universities.

Whilst the results clearly showed that learning support mechanisms such as allocated personal tutors and planned pastoral workplace visits by tutors were commonplace, other aspects such as the development of personalised learning aims, provision of support for the industry supervisor to enable them to enhance the student learning experience and the linkage of students' prior scientific learning to the placement were largely absent. Also the support provided to sandwich students for components such as transferable skills development, reflective learning based on workplace experiences and the leverage of the knowledge and skills learnt on placement upon the student's return to university were frequently lacking.

The study provides a comprehensive gap analysis relevant to academic providers and industrial hosts of bioscience and other STEM focused work placements at the undergraduate level to enable them to maximise the impact of sandwich years as vehicles for both theoretical and experiential learning.