

# Chapter 7

## Improving the Transition of Bioscience Students Through Teaching of Discipline Writing Practices

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### ABSTRACT

*There is a need for examples and tools to support bioscience students in the development of their scientific writing that recognise that there is no ‘one size fits all approach’. ‘Writing to learn’ as a way to integrate writing with the subject can enable students to improve their outcomes and attainment, a clear benefit to the students and university as a whole. This approach and the strategies described in this chapter seek to support readers in supporting bioscience student writing development through innovations and activities that increase attainment for all and not just those referred for remedial provision.*

### INTRODUCTION AND MOTIVATION

The department of Applied Sciences at Northumbria University, The Times Higher Education UK University of the Year 2022, has an intake of > 300 students per year. While there is an expectation for students to be able to write well, a common refrain from staff is that students need to develop their critical reading, thinking and writing skills. Students typically learn scientific writing skills through ‘osmosis’ (an aptly chosen scientific term used by one student). At present, the common approach is to offer ‘bolt on’ study skill courses via dedicated learning support staff. The importance of writing is conveyed to students through marking and feedback. However, it is common to use feedback that focuses on the ‘skills approach’ to academic writing – described by Lea and Street (1998) as the ‘student deficit model’ – here the approach is to point out the ‘problem’ and leave it for students to work on themselves rather than

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taking the student through what is expected and how they can improve. Critically, this model tends not to focus on context. There are a plethora of skills guides available to students, however, many of these are generic and not 'level specific'. Moreover, anecdotal comments have shown that many academics do not feel that providing this support is within their area of expertise.

This led the author to develop a suite of workshops in 2012. These workshops were designed to help bioscience students to understand the requirements and develop the cognitive skills needed in the areas of assessment, critical thinking, critical reading and managing their own learning aligned to the requirements of their year of study thus supporting academic transitions. These were delivered during the university academic development weeks. A focus of evaluations carried out was to ask 'how do students learn to write in their discipline' and therefore 'how might this influence the way that we teach scientific writing'? Listening to our students has formed an understanding of how students learn from the use of writing activities. For example, by helping students to understand the conventions of scientific writing, it was noted that this helped students to understand the texts of their discipline and to join in with academic discourse themselves, in turn fuelling their understanding of the subject.

*I learned so much about my research area because the journals meant something to me, I now understand how to critically appraise them and use them to write a good report which helped me to understand the area further. (UG final year student)*

Moving through the process over the last 10 years has also highlighted the importance of peer dialogue to help one another since far from the traditional view of writing as a solitary pursuit, social composition theories view writing as a social process and therefore writing lends itself to being collaborative. The development of a range of writing activities that are easily utilized during class and with large cohorts was welcomed by staff as they reduced the amount of individual staff guidance needed.

In a bid to embed writing activities into staff practice, writing activities have been shared through multiple mechanisms including the departmental peer support network and mentoring of new staff. "They have affected my academic practice as a mentor and valued sounding board by promoting the use of writing activities as a means to help my students master their subject". As teaching excellence lead for the department, the author supports staff in reflecting on the pedagogical frameworks that underpin their practice as well as identifying best practice and ensuring the dissemination of these innovations. This chapter shares activities delivered and evaluated by the author as well as examples drawn from across the department (Tables 3, 4, 9, and 10) that have been shown to improve student outcomes and support their integration into and through university. It provides colleagues in other HEIs with opportunities to reflect on their own practice to allow them to implement similar activities in their own contexts. Where evaluation has led to improvements or suggestions, these are conveyed through a section within each table on 'pointers for success'.

## **BACKGROUND**

Anderson (2003) explored and discussed criteria for student success, including, written communication skills, social skills, ability for abstract thinking, critical analysis and reflection. Students experience many transitions during their time in education and these require a variety of skills or strategies (including self-efficacy, critical reflection, independence) to navigate. Students typically arrive unfamiliar or poorly

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