Biological Sciences – Writing skills sessions

The ‘writing skills’ sessions (previously called ‘study skills’) have been developed to teach key aspects of scientific writing to undergraduates early on in first semester.

**School/Subject Area:** School of Biological Sciences

**Target Audience:**First year undergraduate students

**Staff Involved:** Dr Richard Milne, Dr Maria Chamberlain

**Date**: one week every autumn

Key features

The ability to produce clear, concise and grammatically correct written work is an absolutely crucial skill for any science graduate. It is vital for any kind of academic career; moreover the ability to communicate in concise and correct English will be valuable in almost any career that uses a university degree.

The teaching of good scientific writing, however, presents a significant challenge because of the very high student to staff ratios in modern universities. Without doubt the best way to teach scientific writing is for an experienced academic to provide detailed corrections for a series of essays by a student, and then sit down with that student and talk them through. However, this represents such an intensive use of staff time that it is simply not practicable, especially given the class sizes in first year. Origin and Diversity of Life 1 (ODL) is a compulsory course for first year BSc Biological Sciences students and also caters for many students on other programmes with a total class size of around 400.

The ‘writing skills’ sessions (previously called ‘study skills’) have been developed to teach key aspects of scientific writing to undergraduates early on in first semester. The goal is to instil good practice at this early stage, in the hope that it will then be retained throughout the University career and beyond. Common mistakes in grammar and referencing are targeted, and innovative exercises in concise and precise writing are undertaken. These are further supported by tutorial sessions and detailed essay-writing advice in the ODL course book.

If students are able to avoid mistakes in areas like referencing, then they are more likely to get feedback on other aspects of their writing when their essays are returned, making the feedback exercise far more valuable to them.

Planning

Aware of the limitations discussed above, Drs Richard Milne and Maria Chamberlain met in summer 2009 to discuss ways to provide students with support for their written work. Both agreed that a 2-3 hour session that focussed exclusively on the skills required to write a good essay would benefit students and hopefully lead to better quality essays, with more productive feedback to the students.

The ODL practical slots in the first week of term were the only vacant period in the ODL timetable that could be used that year. A series of talks and exercises were created, and the study skills sessions run over five 2-hour slots during that first week. This provided a good first test of the concept, and the students seemed to like it. However, the first week of term seemed to be too early for an exercise of this kind, with the students still overwhelmed by all the new experiences of university. All the staff involved agreed that students would be far more receptive at a point where students had started, or were thinking of starting, work on their first essay. Also, the first week of term creates timetabling headaches.

During 2010, the study skills sessions were run in the fourth week of term, replacing a practical session. This seemed to be far more effective (see below). Therefore, it is being retained for the foreseeable future. This year (2011) we are experimenting with moving a few bits of content from study skills sessions into tutorials, specifically the talks about searching for primary sources, which worked least well in a lab environment. Hence the sessions are being renamed ‘writing skills’. Tutorials, writing skills sessions and information in the ODL course book will now provide a well-rounded and comprehensive training for students in how to produce a well-written scientific essay.

Sessions

Writing skills sessions in 2011 will include the following talks and exercises.

1. **What is plagiarism?**A short talk is given, focussing on the finer points of what does and does not qualify as plagiarism. Very minor cases of apparently accidental plagiarism, comprising the odd copied sentence, are common in ODL essays. The talk focuses on how these happen and had to avoid them. It also discusses the use of quote marks.
2. **Concise writing.**Students are handed a passage of writing that is full of superfluous words and phrases that add nothing to overall meaning. They are challenged to cross out as many words as possible without losing any facts. It is explained that they will probably need these skills to get their essay under the prescribed word count, and that the better you are at this, the more information your essay can contain.
3. **Precise writing.**Vital to scientific writing is the ability to convey all of the necessary information, without ambiguity. Some students struggle with this. In an innovative exercise designed by Dr Milne, each pair of students is given a structure made of about seven Lego bricks. Their task is to describe exactly how to reassemble the structure, using only words, which is much more difficult than it sounds. Afterwards it is explained how such precision is vital, for example, in describing an experiment in such a way that allows another person to repeat it. Precise writing has wider uses – in many professions there are advantages in making sure your words cannot be misinterpreted.
4. **Combining sources and writing fluently.** Students often devote entire paragraphs to introducing a single source or example into their work. However, high quality writing often discusses multiple examples or sources in a single paragraph. Getting into the habit of doing this will create more fluent, and often concise, writing. Moreover, it encourages students to think critically about their sources, and how the information they contain relates to each other.
5. **Creating a reference list.**Simple exercises here will familiarise students with the right and wrong ways to cite references in the text, and to create a reference list.

Resources

* Course Organiser and Senior Tutor time in designing the original exercises, and modifying them for subsequent years.
* Lab technician time (small amounts) for setting up each session and distributing materials/ Lego bricks (or similar) for precise writing exercise.
* The exercises and solutions (where appropriate) are made available on webCT as part of a PowerPoint file.

Evaluation

The effect of this exercise can be seen in the written work of first year students, both in ODL and subsequent courses. While student essays continue to vary greatly in quality, the incidence of various basic mistakes and bad practices covered by the study skills sessions has decreased. In particular, course organisers in second semester courses have also remarked on an improvement in the quality of students’ writing skills during the 2010-2011 academic year.

Advice

Given that these sessions are not directly assessed, there will be a temptation for students not to attend. However, the course essay is assessed, and it is made clear to the class that this is the most substantial support they will get for their writing skills in general, and for the essay in particular. The students are at a stage when they take these opportunities seriously, and attendance is similar to that for other practical sessions.

Many of the individual exercises are geared towards biology students, but it would not be difficult to create similar exercises for any subject. We can supply the relevant files on request.

This series of exercises demonstrates that there are ways to teach writing skills to students, other than one-to-one advice and feedback on written work.

**Do’s and don’ts**

* Writing skills can be a dry topic, so **do**make the exercises light-hearted if possible.
* **Don’t**make any mini-lecture within the session too long.
* **Do**use contributions from good students to illustrate solutions to the exercises.

Key contact

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<http://www.ed.ac.uk/employability/staff-information/how-employability-addressed/good-practice/cse/writing>