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Tackling Plagiarism in the Level One Biology Class

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Abstract

The Level One Biology class at the University of Glasgow reported 23 cases of plagiarism in session 2003/04. Several measures were put in place to help students understand plagiarism and how to avoid it. This has included changing the format and topics of assignments and taking students through an exercise designed to give them practice in spotting plagiarism. This has resulted in fewer cases of detected plagiarism in sessions 2004/05 and 2005/06. Students appear to understand what plagiarism is. However, they have great difficulty in using references in the correct way. The next step is to design an exercise, which gives students experience in using references in the correct way.

Keywords: plagiarism, biology education, group-working

Introduction

Plagiarism is an increasing problem in all areas of education. According to research done in North America and the UK, around 60 percent of students have admitted to some kind of plagiarism (Moon, 1999). Some students, although they may seem to be aware of what plagiarism is when questioned, continue to do it. The reasons for plagiarism are many. Jude Carroll (2003) has cited ten reasons why students plagiarise:

- *I got desperate at the last moment*
- *I could not keep up with the work*

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- *The tutor doesn't care so why should I?*
- *I have to succeed. Everyone expects me to succeed and I expect it, too*
- *I don't understand what I have to do to avoid plagiarism*
- *I can't do this! I'll have to copy.*
- *I want to see if I can get away with it (I'll probably get away with it)*
- *I don't need to learn this, I just need to pass it*
- *But you said, "work together"!*
- *But paraphrasing would be disrespectful (dangerous, nonsense)*

Szabo and Underwood (2004) have gone further and have identified a series of personal and situational factors, which have positive and negative effects on a student contemplating plagiarism, based on the research of Love & Simmons (1998).

Table 1. Personal and situational factors affecting plagiarism (Szabo & Underwood, 2004)

	Personal Factors	Situational Factors
Positive impact (encourage plagiarism)	• Negative personal attitudes • Lack of awareness • Lack of competence • View that knowledge is irrelevant	• Pressure • Grade • Time • Task • Lenient penalties • Temptation • Tutor's laissez-faire attitude • Broad tasks or assignments
Negative impact (discourage plagiarism)	• Self-esteem • Moral reasoning • Fairness to others • Desire to learn • Guilt and/or fear	• Tutor's knowledge • Probability of being caught • Effort • Danger • Specific assignments • Need for the knowledge in the future

Whatever the reason, plagiarism is an ever-present problem. However, it should not be the primary aim of teaching staff to catch and punish students; rather the focus should be on giving students the tools necessary to avoid plagiarism.

Background

The Level One Biology class at the University of Glasgow is the largest in Western Europe, with typically 650-700 full-time undergraduate students. In 2003/04, 23 cases of plagiarism were detected in the Level One Biology class at the University of Glasgow. Of these cases, the majority (16) cases were “peer copying”. That is, a pair of students, usually lab partners, doing a piece of coursework outside class, did so by using one another’s words. The two pieces of near-identical coursework were then handed in, and the similarities were picked up on marking, either because they were an unusual answer which was wrong, or correct and worded identically. As the coursework is collected in lab batches and ordered according to seat number, students sitting next to one another who copy are picked up easily, as the marker looks at two identical pieces of work one after the other. The other cases of plagiarism detected during 2003/04 consisted of a piece of group work that had been taken from the internet and “cut and pasted” into a poster, and one final case of an essay that had been copied from the internet.

In response to these cases, each student was interviewed individually. This proved to be time-consuming and often resulted in an unsatisfactory outcome as it was often impossible to find out who was the culprit. It was decided that the best course of action was to introduce measures that limited the opportunity to plagiarise, and to introduce students to the concept of plagiarism and how to avoid it.

Measures introduced to the L1 Biology Class

Jude Carroll (2000) suggests three actions that can be introduced to help students avoid plagiarism:

- *Design out the easy cheating options*

- *If you only change one thing on your course, change your assessment*
- *Teach the skills*

None of the above interventions are designed to “catch” students plagiarising. Instead, they are designed to help students avoid the temptation of plagiarism, or arm them with the skills to avoid it. With that in mind, the following measures were introduced into the L1 Biology class in 2004/05:

Measures put in place to teach skills to avoid plagiarism

- Plagiarism declaration on enrolment form and accompanying lecture at enrolment
- Plagiarism exercise done in class at beginning of session (Wilmott & Harrison, 2003) (based on Carroll, 2000)
- Signed plagiarism statement on work handed in which is done at home
- Reiteration at Skills Programme workshops
- Keynote Lecture on Ethics, including plagiarism

Measures put in place to design out the easy cheating options

- Content of assignments alternated
- Colour of lab manuals changed
- Format of assignments changed
    - *From:* Prepared at home and handed in at lab session (allows for collaboration)
    - *To:* Prepared at home but done in lab under exam conditions (students use their own words)

Each of these interventions attempts to address one of the actions put forward by Carroll (2000), resulting in a programme that continues throughout the Level One course.

Teach the skills

At the beginning of the year, each student enrols for the L1 Biology class. During the enrolment lecture, the subject of plagiarism is introduced. On the reverse of the enrolment form is a “Plagiarism declaration” which each student signs to confirm that s/he understands what plagiarism is and to avoid doing it. This is followed by a paper exercise (Willmott & Harrison, 2003) during the first practical session of the session (Week 2 of Semester 1), which tackles what constitutes plagiarism. The students are given a short piece of original text and seven “extracts” from essays, each of which use the original text, and each of which may or may not be plagiarism. The students form small groups and discuss whether or not each extract is plagiarism. The groups then come together and as a class, discuss each of the extracts and whether or not they are plagiarism and why. The subject of plagiarism is revisited during the year, as part of a Keynote Lecture on Ethics and during the Skills Workshops, which are held as part of the L1 Biology Programme. In addition, any work done at home, such as lab reports and extended essays, are required to have a front cover with a signed plagiarism statement before it is be accepted.

Change the assessment by designing out the cheating options

There are several pieces of coursework set for L1 Biology students throughout the year. The topics of the coursework are alternated to try to eliminate passing on of model answers from year to year. The colour of the lab manual cover has also been changed to avoid students repeating the year using the previous year’s material. The decision was taken to change the colour of the lab manual as repeating students had, in the past, brought the previous year’s lab manual to practical classes in order to fill in the answers to lab questions. While this is not directly related to the assessments, it does encourage students to copy from previous work, rather than attempt to write their own answers.

In addition to alternating the assessments, the method of assessment has also been changed. The coursework appears in the lab manual and in previous years students completed the assignment at home, tore the page out of the book, and handed it in during the practical class. This was changed so that students prepared the work at home, but

were given a short time at the beginning of the lab (usually 10-15 minutes) in which to complete the assignment under examination conditions.

Outcomes

These interventions were put in place in 2004/05. In that year, L1 Biology staff detected no cases of plagiarism either of peer copying or copying from the internet. In 2005/06, seven cases of plagiarism were detected. Six of the cases were from one assignment done during lab time, involving three pairs of students who copied one another, and had occurred mainly due to the inexperience of the lab leader. The assessment in which the copying arose was one that took place in the lab. Students spend a two-hour lab session looking at the features of various mammalian skulls, and are then assessed on the features of a previously unseen skull. During the practical the students work in pairs, but for the assessment they are required to work individually. The usual practice is to split the pairs that work together, so that each one works on a different skull for the assessment. However, one lab leader, who was taking the lab for the first time, did not split the pairs during the assessment, resulting in the students collaborating to the point where their answers were identical. It proved impossible in those cases to ascertain which of the students was responsible for the copying. The seventh case involved a group project in which one of the students had run short of time to produce work for the group and had given them material straight from the internet. The student admitted to plagiarism in the hope that none of the other group members would be penalised.

The future

The problem of plagiarism in L1 Biology has not been solved, but it is improving. In the case of the L1 Biology class, most of the cases of plagiarism come from peer copying, so changing the format of assessments has gone a long way to combating this particular problem. However, plagiarism cases that come from copying directly from the Internet and other sources without proper citations continues to occur. Although students are given opportunities to learn about plagiarism and how to avoid it, and are capable of spotting plagiarism (Willmott & Harrison 2003, exercise), there is still one major hurdle that of correctly citing references. There seem to be a number of problems. Students do not

identify text from published sources in their essays. They use the Internet almost exclusively. They cite homepage URLs and they cite search engine URLs. A typical reference list for an L1 Biology student working on a poster that compares the lifestyle of a typical UK resident with one of another country is:

> References
>
> Campbell
> www.bbc.co.uk
> www.google.com
> www.cia.gov

Where none of the text is identified. “Campbell” refers to the course textbook: “Biology” edited by Neil A. Campbell & Jane B. Reece. Statistics of one form or another will have been found somewhere on the three websites mentioned, but it becomes a game of hide and seek to find them. In an effort to try to tackle this, L1 Biology staff are currently in collaboration with Chris Willmott, to try to develop an exercise which follows on from his plagiarism exercise (Willmott & Harrison, 2003). It is hoped that an exercise can be developed that can help the students to understand and implement the discipline of citing references. This is not without its pitfalls: What referencing system to use, Harvard (author-date) or Vancouver (author-number) to name but two? How to use footnotes? And the impact of the personal preferences of staff (“*I’ll mark this as wrong because it’s not my preferred style*.”) At the moment, a kind of paper chase exercise is being thought about, putting the student in the position of the marker trying to find where a reference comes from. Several suggestions have also been made in conversations and online discussions within the University of Glasgow Learning Community (2005) as to how to tackle the exercise. Suggestions have included using anonymised examples of good and bad writing and getting students to critique them or paraphrasing resources and engaging in peer feedback. It was also suggested that evaluation could be done in Levels Two and Three, after students have gone through elements of training to evaluate the usefulness of the exercises. It is also important that plagiarism training continues to be reiterated at all levels of the undergraduate course.

There are comprehensive online resources available, one of which is from Anglia Ruskin University (http://libweb.anglia.ac.uk/guides/new_harvard.php). This could be used as an online resource for students, although L1 students may find it daunting without other support. In order that students improve their skills in this area they need to practice, and correct use of references needs to be revisited at each level of their undergraduate career. Staff at other levels need to be part of the process of reminding students that there are resources available to help them correctly identify published material. It is hoped that the development of a structured exercise, reminding them when each piece of work is due in, that they need to follow referencing conventions and having the information available to them at every undergraduate level will result in fewer cases of plagiarism.

Plagiarism is an ever-present problem in all areas of Higher Education and the reasons for engaging with it are many. Staff involved with the L1 Biology course at Glasgow University have introduced a series of interventions to help students understand plagiarism and how to deal with it. The numbers of cases of plagiarism in the class have fallen, but there is still a gap in students' understanding of how to correctly cite and identify references. It is hoped that an exercise to address this can be developed along the lines of existing material, which will further reduce the incidences of plagiarism in the class. This, along with support materials which are available and referred to at all levels of undergraduate teaching, will hopefully allow students to avoid plagiarism and its consequences.

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