

Using a constructive feedback approach to effectively reduce student plagiarism among first-year psychology students

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Abstract: Plagiarism challenges the efficacy of current teaching methods to encourage students' independent learning and critical thinking. In addition, existing evidence within the School of Psychology at the University of Sydney suggests that a purely deterrent approach to reducing student plagiarism (i.e., detection software) is relatively ineffective. These findings and an emerging literature led the School to develop and implement a constructive feedback approach. In the first semester 2008 teaching staff provided first year psychology students with one of three extracts from a journal article. Over 1,300 participants were asked to read an extract and construct an appropriate paragraph in relation to a focused research question. Responses on this question focused writing module were submitted via WebCT upon which students subsequently received constructive feedback. Responses were analysed for serious breaches using plagiarism detection software and were also assessed according to writing style, referencing and (in)appropriate use of quotations. The best and worst paragraphs were then selected and posted on WebCT, fully annotated with comments. In addition to this module students were provided with examples of what constitutes plagiarism, a demonstration of the frequency of plagiarism, the ease of plagiarism detection and the penalties for plagiarism. A few weeks following this exercise, students submitted their essays for graded assessment. An analysis of these essays revealed a significant fall in the number of 'severe' plagiarism cases between 2007 and 2008. It is anticipated that this constructive feedback approach will have flow-on effects of enhancing student's independent learning, improving student's scientific writing and increasing academic honesty throughout the tertiary education community.

Introduction

The increase of academic dishonesty in tertiary education (Underwood and Szabo 2003) undermines the scholastic integrity of such institutions. Plagiarism is defined as the 'Copying (or using) of others' work that (accidentally or otherwise) deceives a third party about the authorship (or ownership) of the work' (Yeo 2007, p. 201). As such, it exists in two forms: the theft of ideas (idea-plagiarism) and the copying of words (verbatim plagiarism) (Flowerdew and Li 2007).

The reported rise of plagiarism incidences in higher education has been attributed to the introduction of on-line resources into education (Akbulut, Şendağ, Birinci, Kiliçer, Şahim and Odabaşı 2008; Bassendowski and Salgado 2005). However recent research investigating the motivation behind (and to an extent, causes of) academic dishonesty has suggested that this trend reflects qualities of the institution and student, more so than the society within which they operate (Delvin and Gray 2007). In a qualitative study examining the reasons behind why Australian university students plagiarise, Delvin and Gray (2007) found that the key reasons identified by students were: inadequate admission criteria, poor understanding of plagiarism, and poor academic skills stemming from teaching/learning issues. They argue that students are admitted into university courses without fundamental writing skills (or content knowledge) and as such plagiarise to meet enrolment requirements rather than focus on understanding. Moreover, students argue that courses are designed to facilitate information reception rather than evaluation. Lack of time management leading to pressure to complete essays rather than demonstrate understanding was also identified as a reason for plagiarism. However, most striking were discussions regarding ignorance of what constitutes plagiarism and its consequences. Yeo (2007) reports that though students are able to define plagiarism, when asked to determine whether a particular case study involved plagiarism, students used moral judgments rather than apply this definition.

These findings have prompted educators at several universities to develop programs increasing student awareness and knowledge of plagiarism (Brown, Robin and Jordan 2008; University of Adelaide 2008). Based on the premise that some forms of plagiarism might result from students'



inadequate knowledge of proper citation techniques, Landau, Druen and Arcuri (2002) taught undergraduate students about plagiarism identification and proper paraphrasing skills. They found that when students are provided with examples of plagiarism, plagiarism was reduced. Similarly, Brown, Robin and Jordan (2008) implemented and evaluated a 6-lecture program on plagiarism using an e-learning web site. Though participants showed better understanding of the reasons for referencing and increased knowledge about plagiarism, very few students accessed this online resource. Moreover, no attempts were made to examine whether this increase in understanding of referencing and plagiarism resulted in better writing and reduced plagiarism frequency.

The University of Sydney also acknowledges the seriousness of this matter as plagiarism clearly defies its teaching and learning strategy of encouraging *independent learning* and *critical thinking* among its students. Importantly, plagiarism and the coverage it has received offer academics the opportunity to rethink how they teach (Badge, Cann and Scott 2007). Related to this, in 2007 the School of Psychology introduced plagiarism detection software called *WCOPYfind*, a free download alternative, and used it for the first time with 1300 Introductory Psychology students. Underlying this decision was the belief that plagiarism is an issue that needs to be tackled in first year courses before the problem exacerbates. In Semester 1, 2007, PSYC1001 students were required to write a 1000 word essay and in Semester 2, PSYC1002 students were required to write a 1250 word research report on an experiment run in class. Students submitted each assignment electronically via *WebCT* in addition to a hard copy version. The electronic version was analysed for serious breaches of plagiarism via *WCOPYfind*. To our dismay, 23 PSYC1001 students were found to have seriously (40% or more verbatim) plagiarised their essays (21 students from set readings and the internet, 2 students from each other), and 34 PSYC1002 students were found to have seriously plagiarised their reports (13 students copying from set readings and the internet, and 21 students from each other). These high rates of plagiarism occurred despite students being clearly informed at the beginning of each semester about the detection software. Additionally, at the beginning of Semester 2 in the first lecture and in the PSYC1002 course manual we explicitly explained how many students had been caught plagiarising in Semester 1. This real and recent example may have caused the drop in students plagiarising from set readings, it does not explain the increase in students copying from one another.

In 2007 a substantial amount of school resources were used to deal with these plagiarism cases including face-to-face interviews with student perpetrators. Interestingly, it was during these interviews that students mostly claimed that 'I didn't realise I was plagiarising'. Together, the findings of an increase in reported cases cast doubt on the value of a purely deterrent approach (i.e. detection software) to preventing plagiarism, especially since student interviews revealed that most cases arose from ignorance about the nature of plagiarism, coupled with poor writing skills, and a belief that plagiarism would be hard to detect. To address these limitations with a purely deterrent approach we propose a complementary system of demonstrating to students early in Week 3 of semester what actually constitutes plagiarism, and how easily it can be detected, all under the guise of a writing exercise referred to as the 'constructive feedback approach'.

The current approach

The approach that some institutions adopt of making plagiarism detection software available to students prior to electronic submission without educating them on what actually constitutes plagiarism is inherently problematic. Firstly, it gives the student plagiarist a way to completely escape detection as they can continue cross checking their thoroughly plagiarised assignment until it eventually gets through the acceptable software criterion. In this instance students have not learnt anything about constructing an argument from scratch or critically evaluating someone else's argument. Having students use detection software to play with verbatim checks is teaching the wrong lesson entirely – that one can steal someone else's ideas, formatting and arguments, but they should not steal their precise words.

A more effective teaching and learning approach is necessary and timely. Yeo (2007, p. 214) proposed several recommendations for educating science students about plagiarism:

1. students should engage in a critique of a range of science – specific scenarios that compel them to test their understanding of plagiarism;
2. students must acknowledge the institution's formal ways of dealing with plagiarism and the penalties that can be imposed;
3. students will need ongoing opportunities of practice skills, referencing and paraphrasing; and
4. students need to understand and differentiate between (un)acceptable forms of collaboration in the context of their own work.

Significantly, the current study incorporates the strengths of this previous research to focus on student feedback, writing/paraphrasing exercises for students, and the provision of examples of plagiarism. Importantly however, the current study extends previous plagiarism reduction research by directly measuring how effectively the skills developed in these writing exercises are then transferred to actual formal assessments such as essays and research reports.

Method

Participants

Approximately 1350 of 1412 students enrolled in Introductory Psychology (PSYC1001) at the University of Sydney completed a writing exercise as part of the tutorial program in 2008. Only students who provided consent for use of their data in this study were included as research participants. In addition, several computer problems in tutorials prevented several online submissions being completed. Altogether submissions from 676 students were analysed.

Materials and procedure

As part of their formal assessment students enrolled in Introductory Psychology at the University of Sydney are required to complete a 1000 word essay. Essay questions are released to students during Week 3 of Semester 1 (through *WebCT*) and are due for submission (in tutorials and through online submission) in Week 9. The tutorial program for this course involves one tutorial in Week 5 dedicated to explanations of essay writing and referencing in psychology. In 2007, the tutorial involved the tutor discussing the rules of writing and correctly referencing an essay in the APA format. In 2008, the structure of this tutorial was amended to include a writing feedback exercise which immediately followed the section where tutors discussed referencing conventions.

Students were directed to computers and provided with one of three extracts on hypnosis (a topic not related to any of the essay topics) from an APA Psychology journal article. Each extract had an associated research question. The writing exercise required students to read the extract and construct their own appropriate response to answering this more directed/focussed question. Student responses were then typed in *Microsoft Word* and submitted via *WebCT*. This exercise consumed around 15 minutes of tutorial time. Tutors then proceeded with the remainder of the regular tutorial.

Since it was not practical to provide feedback on 676 responses, examples of student responses were posted on *WebCT*. The examples fell into the following categories: 'Good', 'average', 'excessive quotes' and 'plagiarism' paragraphs. The examples of plagiarism were further divided into two subtypes: plagiarism of words (where sources were copied verbatim without references) and plagiarism of ideas (where ideas from sources were plagiarised and the original source not acknowledged). These examples were annotated with comments relating to the flaws of each paragraph and areas for improvement, refer to Figure 1 for an example. This feedback was provided to students online in Week 7 (two weeks prior to essay submission), and presented in person by the unit coordinator in one of the lectures that same week. Students whose writing responses were



identified as plagiarised ($n=9$)¹ were contacted via email, and informed that they had been caught during the exercise, but that there was no consequence. They were further warned that plagiarism in formal assessment tasks is treated seriously both within the School of Psychology and the University of Sydney. Students were also asked to note referencing guidelines when constructing their essay and informed that their work may be displayed anonymously online with annotated feedback.

Question 2 : Plagiarism

Hilgard's (1977/1986 as cited in Kihlstrom 1998, pg 240) neodissociation theory begins with the assumption that the core of hypnosis is not merely response to suggestions as Kirsch and Lynn (1995, 1998 as cited in Kihlstrom 1998, pg 240) seem to assume, but rather a division of awareness such that hypnotized subjects are unaware of percept and memories of which they should ordinarily be aware. Fir Hilgard, this division of awareness was exemplified by hypnotic analgesia, in which the subject feels little or no pain in spite of receiving stimulation which may otherwise be painful.

This is an example of plagiarism.
The student has referenced the source of the information and even the page number, but has stolen Kihlstrom's actual words without acknowledging this with quotation marks.
Everything underlined has been copied exactly.
If you copy someone's words use quotation marks: ". " .

WRONG: Hilgard's (1977/1986 as cited in Kihlstrom 1998, pg 240) neodissociation theory begins with the assumption that the core of hypnosis is not merely....
CORRECT: Kihlstrom (1998, p.240) said that Hilgard's "neodissociation theory begins with the assumption that the core of hypnosis is not merely..."
EVEN BETTER: Use your own words to describe the theory!

If most of the assignment is like this	
Mark	Grade
>64	CREDIT or greater
50-64	PASS
1-49	FAIL
0*	Not a serious attempt

*Student must resubmit another assignment (for no marks)

Figure 1. An example of the deterrent feedback used in the writing exercise. This was presented in full colour, online and in lectures. The scoring key in the top right was designed to leave students in no doubt as to the consequences.

Once essays were submitted in Week 9, they were screened using *WCopyfind*. Essays identified as serious plagiarism cases (>50% copied) were noted and their responses from the Writing Exercise obtained to determine whether the new constructive feedback teaching method implemented by the School of Psychology is an effective deterrent of plagiarism. The efficacy of this new method was also examined by comparing plagiarism frequency and depth between 2007 (plagiarism software, no writing exercise) and 2008 (writing exercise introduced) essay submissions.

Results

Table 1 shows the percentage of plagiarised essays in 2007 and 2008. Plagiarism cases were categorised into severe (>50% copied) or moderate (20-49% copied)². The percentages have been calculated based on enrolments at the time the essays were submitted; in 2007, 1179 students were enrolled in the course, and in 2008 that number had risen to 1412.

Table 1: Percentage and frequency of severe and moderate plagiarism cases across 2007 and 2008. Figures are: Percentage Rate (raw frequencies of students plagiarising from course/online materials; from other students).

		Severe	Moderate
2007	Plagiarism software, no exercise	1.78% (20,1)	0.68% (8, 0)
2008	Writing exercise introduced	0.21% (3, 0)	0.78% (10, 1)

¹ This may not seem like a large number of students given 676 results were analysed, however the writing exercise was concerned with them reading and then writing only a single paragraph, so only the most severe cases could possibly be detected with so few words to match up.

² Note, that proportions below 20% amount to just three or fewer sentences, which makes even establishing a case of plagiarism tenuous.

Two separate Chi-square Goodness of Fit tests were performed to determine whether rates had fallen by a statistically significant margin. As can be clearly seen in Table 1, a highly significant decrease in rates of ‘severe’ plagiarism occurred between 2007 and 2008; $\chi^2 = 19.84$, $p < 0.0001$. The small rise in the rate of ‘moderate’ cases did not approach statistical significance; $\chi^2 = 0.03$, $p = 0.863$.

None of the 14 students caught for moderate or severe plagiarism in 2008 were those directly emailed in regard to plagiarism in the writing exercise. Of the three severe plagiarists, all claimed not to have understood that what they had done constituted plagiarism, and none had completed the writing exercise, accessed the online feedback or had attended the lecture where the results were presented. Only one of the moderate plagiarists admitted being aware of the issue of plagiarism, but she was also the only one to copy sections of her essay from another student instead of from set references. That student told us that they thought that plagiarism was “only about referencing, not sharing work”.

Discussion

Importantly, 2008 was the first year where constructive feedback was given in addition to the standard plagiarism policy information we have always provided students. The results of this study confirm previous research findings that teaching students about referencing and what constitutes plagiarism, through examples, paraphrasing exercises and feedback, is effective in reducing student plagiarism (Delvin and Gray 2007; Landau, Druen and Arcuri 2002; Yeo 2007). Thus by drawing attention to university plagiarism policy and developing interactive teaching methods about plagiarism (thereby encouraging students to be active learners), academic dishonesty can be reduced (Brown, Robin and Jordan 2008). This interactive approach is important to emphasize because information regarding plagiarism has always been available to students for them to read passively, but as observed through the current and previous studies, a significant decrease in frequency of plagiarism requires active participation by students (Yeo 2007). An alternative explanation for the observed reduction in plagiarism could be that, having been exposed to the efficacy of *WCopyfind* through the writing exercise, students are better able to undermine it. However since the software merely matches text and can easily overlook several imperfect mismatches per sentence, the only means of defeating it would have been for students to paraphrase. By doing that well (and referencing), students would be demonstrating genuine writing and interpretative skills.

Importantly, this study was the first to show that the skills learnt in a tutorial writing exercise about plagiarism transferred effectively to the actual formal written assessment – a 1000 word essay. The design of the current study allowed for a direct comparison between 2007 and 2008 plagiarism results which showed that there were significantly fewer cases of ‘severe’ plagiarism when both detection software and the writing exercise were implemented (in 2008), than when only detection software was implemented (in 2007). The non-significant difference in frequency of ‘moderate’ plagiarism highlights a limitation of the current method. It could be argued that the current exercise was not sensitive enough to identify and deter moderate plagiarism. The writing task only required students to compose a 6-8 sentence response after reading one paragraph. Thus, opportunity for ‘moderate’ plagiarism was limited. This could be improved by increasing the number of sources and the length of student responses.

Essays in PSYC1001 are marked to strict faculty guidelines concerning the distributions of marks, so we could not determine whether the overall quality of the writing had risen or fallen. However, several tutors reported finding essays written in fundamental English (or incoherently). Consistent with research on international students (Delvin and Gray 2007; Flowerdew and Li 2007), it is suggested that students with language difficulties (who would ordinarily simply copy out text) were attempting to write in their own words less than successfully. In many ways, such students would receive much the same marks had they plagiarised, although would escape being accused of cheating.



It is this possible shift in the practices of weaker students which highlights the fruitlessness of conducting a plagiarism deterrent exercise in isolation. To be fair to our intervention, we did include examples of ‘average’ and ‘good’ writing in our feedback exercise, but there was no doubt students were more memorably affected by the plagiarism examples. This then highlights the need to improve scholastic integrity by addressing both plagiarism and writing style. To advance the current study future research (and teaching interventions) could aim to positively encourage good writing skills through similar methods (e.g. targeting writing flaws in addition to plagiarism) and implement strategies to reduce to student-to-student copying and sharing of work.

The reduction in plagiarism cases also highlight the value of demonstrating to students the nature of plagiarism well in advance of an assessment exercise. Informing students early in semester that they had plagiarised, but that it ‘doesn’t matter, just be careful from now on’ was considerably less stressful for both staff and students than interviewing students at the end of semester when the plagiarism had serious consequences. While many students described the feedback as ‘frightening’, it is clear that they benefited immensely from seeing real examples of plagiarism, its consequences, and how to avoid it. However reports from tutors regarding essays which were ‘referenced beautifully’ but ‘made little sense’ remind us that we need to expand our focus by also encouraging good writing. Like previous research, this study’s focus on Introductory Psychology students in the first semester of university endorses the idea that strategies to either reduce or prevent plagiarism should be employed early in the student’s academic path (Compton and Pfau 2008). While detection software is a useful tools in fighting plagiarism (see Underwood and Szabo 2003), this study has shown that more stringent preventative measures are needed.

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