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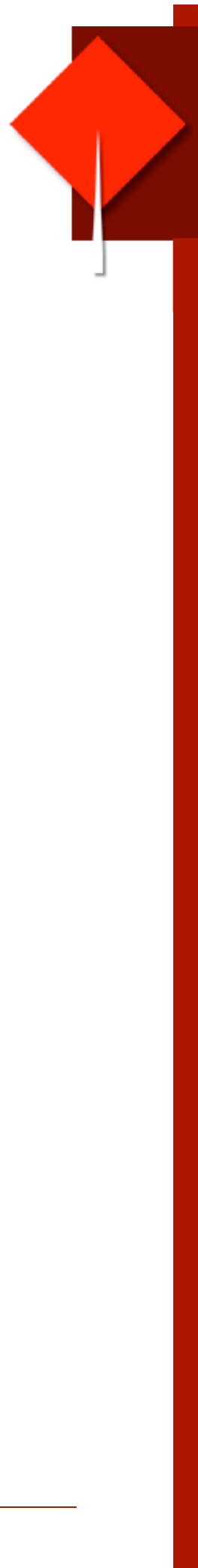
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### Abstract

This paper is concerned with reporting the experience and findings of staff using a commercially-available textmatching tool (Turnitin) to detect plagiarism in a university setting in New Zealand. The use of actual instances of plagiarism revealed through Turnitin in a teaching department is a departure from the more usual selfreporting methodology used in many plagiarism research papers. The paper concludes by asking questions of the implications for institutions, teaching staff and students.



## **Using an Electronic Text-Matching Tool (Turnitin) to Detect Plagiarism in a New Zealand University**

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### **Abstract**

*This paper is concerned with reporting the experience and findings of staff using a commercially-available text-matching tool (Turnitin) to detect plagiarism in a university setting in New Zealand. The use of actual instances of plagiarism revealed through Turnitin in a teaching department is a departure from the more usual self-reporting methodology used in many plagiarism research papers. The paper concludes by asking questions of the implications for institutions, teaching staff and students.*

**Key words:** *plagiarism, Turnitin, tertiary education, university.*

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## **Detecting Plagiarism**

Traditional ways of detecting plagiarism have involved an academic having prior knowledge of the sources used by a student. In addition the sense of 'having read this before' in another student's work and the subsequent search through a pile of assignments are strategies that are now confronted with a near tidal wave of information. The days when an academic could justifiably claim to have read all the books and journal articles written in their particular discipline have long gone with such expertise found in ever smaller areas of knowledge. However, the authors have noticed a shift back to copying from textbooks once students have become aware of the use of the Turnitin plagiarism checking software which creates the additional problems of proving guilt (Larkham & Manns, 2002).

The web has brought with it access to sources which previously had no access or one which was long and arduous to attain. Now students can access the Library of Congress in the US, or the British Library from the comfort of their home or student hostel bedroom. Links through library websites provide access to databases of the latest journals and it is now not uncommon for students to have more time to access sources than staff who are inundated with an ever-increasing workload of students, assignments, research and a myriad of administrative demands.

The use of word processors has made the job of writing easier as well and the ease with which students can combine typing with the 'cut and paste' from web-sites or other electronic sources is one of the primary functions of the technology. Gone are the days when students would search in the dark shelved recesses for - quite literally - dusty tomes for insights and knowledge.

However, at the institutional level the reality may be very different. Institutions make great speeches about 'excellence' but the reality for some is a pursuit of profit and ever-increasing income at whatever cost to academic standards and academic integrity. This goes some way to explain why the additional time required to use plagiarism software is not one which staff are willing to surrender, given the other increasing demands which have far greater career consequences and paybacks such as publication in leading international peer-reviewed academic journals in order to secure employment or promotion. Staff reticence, when coupled with institutional failure to allocate additional resources to catch cheating, makes for a line in the sand which is blown away with the first whiff of additional workload or budgetary expenditure.

## **Using Turnitin Software**

In the 2004 calendar year, Massey University had 41,436 students enrolled in five Colleges – Business; Creative Arts; Education; Humanities & Social Sciences; and Sciences. The University is spread across three physical campuses (Palmerston North, Wellington and Auckland) as well as the virtual campus for students studying at a distance. Nearly 53% of all students were studying internally, with the remainder studying 'extramurally' that is, at a distance (off-campus), including New Zealanders overseas. Full-fee International students accounted for 20% of the total student body.

As part of its Academic Quality Assurance Procedures, the University initiated a trial of Turnitin starting in Semester 1 of 2004 with participants on all four campuses and spread over all five of our colleges. This University trial also included a member of our International Business teaching team.

The Turnitin system produces reports which identify the percentage of other text used in an assignment, as well as a colour grading indicator for assignments which ranges from red (up to 100% copied) through orange, yellow, and green to blue. Preliminary results of this first trial involving 949 assignments over classes controlled by nine lecturers found around 9% of assignments falling in the 'bad' Turnitin yellow to red levels (25% to 100% reported copying). These results do not mean that all of these assignments were plagiarised or that the 91% falling in the 'good' green and blue levels did not contain examples of plagiarism, since the colour grading signifies only the amount of external sources used and does not identify whether these have been cited properly. It also cannot detect plagiarism which is not from web-based sources such as textbooks, although it will identify plagiarism of other student work which has been previously submitted to Turnitin.

At the same time that the University trial was being undertaken, our Department of Management allowed individual academics the choice of using Turnitin or continuing with their existing detection methods. Over thirty academics and associated tutors and administrative staff in the Department were given access to Turnitin. As a Department these academics teach approximately 800 Equivalent Full Time Students in a calendar year. A demonstration of the Turnitin system was advertised to all staff and given at a common break time reserved for staff meetings and research presentations. Taking the results of the one academic who took part in the main University trial and combining these with the results of two other staff that used the Departmental system, 1123 assignments were examined involving seven classes in the International Business sub discipline. With these business papers the level of 'bad' assignments jumped to 18.3% and the 'good' dropped to 81.7%. Other members of staff either did not use Turnitin or just used it to check 'suspect' assignments.

Our experience illustrates some of the benefits and problems associated with the various ways that Turnitin may be used. One colleague opted to use the university trial. Taking this approach he placed all the extra workload generated onto university administrative staff external to his Department. He did not actually discover many instances of what he termed 'serious plagiarism' and put this down to the psychological impact of Turnitin – that is, that having the compulsory use of plagiarism software properly publicised, students are aware beforehand what risks they run if they plagiarise.

Another member of staff and his Assistant Lecturer chose to have students submit on floppy disc which created a lot of extra work. Using this approach they submitted files to Turnitin, which meant that they had to pay close attention to naming conventions, working out which student assignment files were which and ensuring there were no administrative glitches that might cause one student to be credited with the work of another. The staff enrolled the students onto Turnitin individually using e-mail addresses from our Student Management System (SMS). Staff also had to worry about the risk of computer viruses on the floppy discs infecting office systems. They found the processes onerous and time consuming.

The final member of staff who used the software chose to enrol his students in bulk with Turnitin. One problem he experienced was that email addresses on SMS were not necessarily current or correctly spelt. He also had been late in deciding to use Turnitin and so the administrative guides - that must be prepared well in advance for students studying at a distance (extramurally) - did not contain information about Turnitin. However the Guides did signal the intent to use an electronic plagiarism checker. So when the help desk at Turnitin emailed the students with their passwords many deleted the email as junk mail. Others had their systems setup in such a way that the e-mail was sidelined to junk mail before the student could even read it. Encouraging students to use the system was another problem.

Once everything on the administrative side was in place, giving the students their own individual access to Turnitin worked really well. The students submitted their assignments themselves. This process takes only a couple of minutes, if that, and students receive a digital receipt from Turnitin which shows the date and time of receipt, as well as the content that has been uploaded.

Self-submission by students is the optimum method which has been found to date. Although we recommend self-submission there remains a question over student access to the Turnitin site. Some staff believe that students should not be given access to the Turnitin reports as this would allow them to see where they were being caught and simply allow them to devise other strategies to avoid detection. Others hold an opposing view believing that it is good for students to see how Turnitin demonstrates the sources of material. What we agree upon is that the option for allowing a number of submissions until you get your assignment 'correct' is not considered good pedagogy, at least amongst staff researching plagiarism and using plagiarism checkers at Massey University.

Although individually, each of the members of staff had applied different interpretations to what might constitute serious plagiarism resulting from the colour coding of assignments produced by Turnitin, we all agreed that we could not assume that all 'blue' or 'green' assignments were 'good' and those 'yellow', 'brown', 'orange' or 'red' were 'bad'. Further research and trialling of Turnitin is needed to examine differences between modes of teaching (internally versus distance), levels of papers (undergraduate versus postgraduate), country of origin of students (home versus international), and gender (male versus female). The empirical data we have as a result of our submissions to Turnitin and our University student databases provides us with a rich source of actual data on what students do as opposed to the mainly self-reporting of opinions by staff and students that is found in the literature (Cizek, 1999; Park, 2003). As Cizek states "International studies of cheating also share methodological similarities – weaknesses, actually – with studies conducted in the United States, in that the data are primarily self-report data, collected by means of anonymous surveys of high school or college students, that depend on the cooperation and honesty of volunteer respondents" (p. 89).

The real problems, which the staff using the software have all experienced, is framing the problem by deciding what levels and types of plagiarism warrant what penalties. The University has some guidelines in place. The Massey University Calendar (2004) does mention plagiarism "Copying or paraphrasing of another person's work, whether published or unpublished, without clearly acknowledging it, will be deemed dishonest. Any candidate found guilty of plagiarism will be liable to the penalties listed in regulation 13" (p. 28). The Calendar does not tell us what levels will be deemed to be dishonest and so how a person is actually found 'guilty'.

With Turnitin we have put the basic strategies to detect plagiarism from electronic sources in place and used this to supplement our existing approaches. These strategies are essentially reactive to the problem of plagiarism. Commitment to using Turnitin by all staff is now required and may come with time or mandating by the University. Recording of formal warnings to students and their rights to appeal decisions also requires more structure from the institutional level downwards.

## The Future

Our work in using the Turnitin software as an adjunct to existing forms of plagiarism checking, have brought to our attention that we have inadequate common understanding and responses on what constitutes plagiarism, such as what proportion of direct quoted work should be allowed in an assignment, and how much unattributed work is permissible before an accusation of plagiarism is made (for example staff who accept no plagiarism at all compared to others who may use five lines of text as the maximum allowable).

The implications of these variations on our practice should be of great concern both at the individual and at the institutional level which should promote the highest standards of scholarship among both staff and students. How can we effectively teach students about plagiarism if we ourselves cannot reach common agreement? The present system allows individual staff to set their own levels such that students receive inconsistent treatment across papers with some staff known not to use Turnitin, while others are relentless in their pursuit of academic dishonesty.

We have learnt that we need to spend even more time than at present explaining and demonstrating to students how to reference sources correctly as well as the importance of this in terms of internationally accepted academic practices of scholarship. Such explanations in Course Guides, in lectures and in seminars, still fail to reach some students who continue to submit unattributed work to Turnitin for plagiarism checking. In addition, we need to redesign our assessment procedures (including examinations) in order to reduce the opportunities for plagiarism.

The ethical questions of student honesty and personal integrity are ones that hitherto have remained largely unspoken but which will increasingly need to be made explicit in terms of acceptable university values and the academic culture which students need to respect. That this should be necessary is a reflection on the changing nature of present-day society.

At the institutional level, decisions have to be made as to the mandatory use of plagiarism-checking software. It is currently voluntary as it is seen as being only one way in which to detect plagiarism. However, the question of compulsory study skills courses at the start of a university education is being considered as essential in order to teach such subjects as library skills, writing of academic assignments, and the nature of scholarship.

The implications for students are that improved methods of detection make cheating a more time-consuming activity such that the point is reached where honest study takes less time than finding ways to avoid it.

It is almost inevitable that advances in technology will bring increasing amounts of evermore sophisticated cheating and corresponding resources aimed at its detection. It is also likely that academic staff will increase their use of teaching methods and forms of assessment which attempt to eliminate opportunities for plagiarism altogether. In the meantime, we will continue to struggle with problems that are brought into the academic environment from the 'real' world.

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