

POLICIES, TECHNOLOGY AND PROCESSES FOR PROMOTING ACADEMIC INTEGRITY: SOME AUSTRALASIAN PERSPECTIVES ON ACADEMIC INTEGRITY IN THE INTERNET AGE

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ABSTRACT

Many academics are using electronic tools to detect breaches of academic integrity such as plagiarism, but some students have identified techniques for avoiding detection. In this paper the authors evaluate some recent developments and review attempts to maintain standards of academic integrity at five tertiary institutions in Australia and New Zealand. They argue that a combination of education, detection and appropriate institutional policies and processes are needed to address what appears to be a growing problem.

1. INTRODUCTION

Academics in many countries are expressing growing concern about the apparent decline in academic integrity among tertiary students. This decline appears to be related to the profusion of resources available on the Internet, including websites which offer to provide academic essays (Born, 2003; Park, 2003).

The first part of the paper describes a range of approaches that educational institutions and individual academics can follow in order to educate staff and students about key aspects of academic integrity. These approaches include:

- Strongly emphasising the importance of acknowledging all sources of information that have been drawn on when writing academic documents.
- Advising students that their work will be subject to “originality checking”, whether electronic or manual or both.
- Suggesting techniques that can be used to avoid accidental plagiarism.

The second part of the paper identifies a number of techniques that institutions can use to detect plagiarism and other forms of cheating. These techniques include:

- Using electronic originality checkers.
- Looking for dramatic variations in grades .
- Looking for changes in writing style or quality within or between submitted work.
- Requiring students to give an oral explanation of some or all of their written work.

The third part of the paper outlines the types of institutional policies and processes that are most helpful in assisting staff and students to maintain standards of academic integrity. The authors conclude by stressing the equal importance of all three aspects: education, detection and institutional responses.

2. DISCUSSION

2.1 EDUCATION

It is clear from the experiences of all of the contributing institutions, that the changing nature of online processes and the ubiquity of digital content has strengthened the requirement for the re-emphasis of the values of academic integrity. The literature identifies the many causal factors that contribute to plagiarism, academic dishonesty and academic fraud (Carroll and Appleton, 2001) by students and staff, with the prime underlying solution being based on education of all members of the academic community.

We consider here, firstly, the elements of staff education introduced to promote academic integrity within the contributing Institutions. All the institutions have invested in staff education to some degree to support the changed assessment practices introduced by the web-based Turnitin “originality checking” service. It is evident that the availability of the Turnitin service has catalysed dialogue and debate within the academic staff community and has been an indirect driver for increased staff education on issues pertaining to academic integrity and assessment practice. The form of staff education varies from direct individual support through to online materials, as is presented below.

At Massey University, Turnitin training for staff is initiated through a one-on-one session with the Turnitin administrator. An important part of this direct support is a follow-up session on the Turnitin output from the first student assessment submissions, which involves the academic and the administrator separately interpreting the Turnitin outputs to ensure that only genuine acts of plagiarism detected by Turnitin are formally processed. This interaction also ratifies the academic’s skill in working with the software, and provides the basis for an informed expansion of the training function as Turnitin uptake increases.

In contrast to this individual approach, Macquarie University offers annual training sessions to all staff. These sessions are conducted by a professional software trainer, and facilitated by the Turnitin project manager to contextualise the training experience. Local support staff are encouraged to participate to strengthen awareness of the Turnitin service and promote collegiate on-training from the initial staff group. The University of Auckland provides workshops to staff that focus on addressing plagiarism through improved course design and assessment practice. Turnitin training at this point is mainly provided through an informal network of users that supplement the available online manuals, although the institutional administrator is available to offer one-to-one support if needed. Unitec runs workshops for staff that stress the importance of educating students about acknowledging sources and show how Turnitin may be used to detect plagiarism.

RMIT uses a combination of approaches to advance staff knowledge of academic integrity and capability with the Turnitin service. Significant online support resources are made available to staff on academic integrity, assessment re-design to minimise plagiarism, and the use of Turnitin. For Turnitin use, staff training begins with an initial workshop introducing the service to the teaching team, and is followed by targeted electronic advisories and a telephone-based administrative help service. Further training investment is limited by staff time availability, and only occurs if staff are concerned about their ability to work with, and interpret the output of, the software. Importantly staff may only use the Turnitin software if they provide electronically authorised agreement to abide by the University guidelines for the service. These guidelines require all RMIT staff to place Turnitin in an educative role with their students, inform all students and teaching team members of its use, and track the deployment of Turnitin in RMIT programs in a register of users and courses. Thus, Turnitin can be centrally managed with surety of alignment to university policy, workloads and responsibilities, and systematic quality assurance practices.

It is well recognised by educationalists that student education is the prime means of building a learning culture that respects and demonstrates academic integrity (Carroll and Appleton, 2000). Prior to licencing the Turnitin service, all of the five institutions had pre-existing programs and support initiatives to educate students on what constitutes plagiarism and on the associated risks. The introduction of the Turnitin service has served to focus attention on the issue of plagiarism and expand student educational programs addressing the expectation of academic integrity and the avoidance of plagiarism. These educational initiatives must be effective in a student community that is increasingly time-pressured and pays less attention to papers and traditional formal communication. Under such conditions, a significant component of the student experience with academic integrity will be derived from the learning culture created by staff. To that end, emphasis on staff education in building a culture of academic integrity must complement the education of students. Each institution has responded to the requirement of

student education in differing ways, and described below are the actions taken by the contributing institutions.

Massey University provides a significant array of publications to students on academic integrity and plagiarism avoidance, covering university expectations and presented in the following formats:

- study material for each student paper,
- faculty booklets;
- online student resources;
- material offered in student learning centre courses.

The degree of student engagement with this material has been judged as being insufficient to convey the complete educational message, and direct communication is provided using a number of different resources, including

- individual assistance from student learning centres;
- liaison staff offering assistance to extramural students;
- individual lecturers providing information during the delivery of some papers;
- study skills staff attached to papers to offer students specific assistance where needed.

Massey is also exploring how Turnitin may be used as a training aid for students by experimenting with having assignments submitted to Turnitin as educational experience rather than using Turnitin solely for detection and disciplinary reasons.

Auckland University has taken an approach which parallels Massey University in that students are provided with publications, handouts and resources with which the students are expected to proactively engage. It is also the students' responsibility to access the resources available to them such as library information skill courses and the Student Learning Centres, as well as directly asking for help from lecturers and tutors. The university has developed an online tutorial, (see: <http://qa.cecil.auckland.ac.nz:8000/>), designed for students to undertake as a prelude to submitting their work to Turnitin, with initial results of the pilot in the Business School showing that this element of student education is assisting the students in understanding the expectation of attribution in assessment (Callagher, Smith and Mitchell, 2004). Further research by academics in this school indicates that with the support education, students understand and are accepting of the Turnitin results (Mills, in progress).

Macquarie University has invested in a 'train-the-trainer' approach to facilitating student education on academic integrity. As described above, the academic staff are given the training and resourcing needed to directly answer inquiries from students. This includes an instruction sheet to give to students and information about the required assignment cover sheet. This information for students is also available from the centrally maintained and standards-compliant copyright website (see: www.copyright.mq.edu.au) It is expected that as the pool of Turnitin users grows at Macquarie more work will need to be undertaken to ensure that informed academic judgements are made on the interpretation of the Turnitin output.

RMIT University provides online education to its students via their academic integrity site (<http://www.rmit.edu.au/teachingandlearning/links/academicintegrity>), which includes definitions, relevant student policy and significant student resources on how to avoid plagiarism. As is common with other institutions RMIT widely distributes paper and electronic communication to students on plagiarism avoidance. Local student support education services on plagiarism avoidance are also available to students along with library and other information sessions. A number of schools within the university conduct education sessions on plagiarism avoidance for students. Currently students do not upload their own assessment into Turnitin, this option will be explored in groups where equity of assessment practice is assured, to expedite student education and better manage staff time overheads. Anecdotal feedback from staff using Turnitin indicates that there is a general lack of knowledge and understanding of academic integrity in incoming students, reflecting the varied backgrounds of contemporary university intakes and the differing expectations of educators. There has been evidence that information presentation alone does not change student behaviour and that the presence of detection technology

assists in educating students, by active feedback, on the relevant issues. These experiences reflect existing literature that stresses academic integrity is socially constructed knowledge (Payne and Nantz, 1994) and as such students must learn academic values (Hauptman, 2002).

The approach undertaken with student education at UNITEC is based on an awareness that prior to education on academic integrity, many students do not understand why academics place so much emphasis on correct and full attribution. Accordingly staff point out to students that violation of academic integrity can affect many, including (Joyce, 2004):

- society – graduates who have cheated in order to obtain their qualifications may not be competent;
- professions, institutions and departments – their reputations may be damaged by adverse publicity;
- students – their qualifications may be seen as suspect when plagiarism by fellow students is exposed;
- plagiarists – if they are caught, their future prospects may be greatly affected.

Similarly to other institutions, UNITEC has followed a process of clear delineation and distribution of the penalties for plagiarism, e.g. in student handbooks and on assessment documents. As an example of operating practice, one department uses the following scale of penalties for plagiarism (Joyce, 2004):

- Loss of marks (typically 5% to 10%) for a first minor transgression (eg one to three short sections of copied text with no citations).
- Zero marks for a first major transgression (more than three short sections of copied text with no citations or one or more long sections of copied text with no citations) or second minor transgression.
- Suspension or permanent exclusion for a second major transgression or third minor transgression (this involves a discipline committee hearing, whereas the two previous penalties can be imposed by the programme director).

Consistent with the recognised role of education in plagiarism management, in the first two cases, the programme director spends time with students on developing their understanding of correct attribution. The third case has not arisen with postgraduate students but has occurred with undergraduates. UNITEC has also identified shortfalls in the awareness of academic integrity by incoming students who may have experienced a culture of “locate, copy and paste”, and the need to develop them to the level to the “analyse, critique and synthesise” and academic writing that is expected at tertiary level.

2.2 DETECTION

Publications describing the levels of plagiarisms detected, as cited by Carroll (2000), have been confined mainly to projects exploring plagiarism based on self reporting, i.e surveys or interviews of students. The reader cannot help but get the impression that plagiarism is at almost epidemic levels. However there are few articles that have quantified the levels of copying detected from written material, using any of the electronic tools available.

Until recently, detection of plagiarism was confined to the use of manual methods of detection from textual sources or (for some) the use of google.com. Along with the proliferation of sources of electronic data available to students, there has also been a proliferation of a number of computer based programmes capable of detecting copy from electronic sources e.g. Copycatch[®], EVE2[®], Plagiserve[®], Turnitin[®] and others. A summary of the features of the various programmes available can be found on the Melbourne University web site (see Centre of the Study of Higher Education, 2003).

All five contributing institutions use Turnitin, which converts the written assignment, submitted electronically, into binary code and then clusters and maps this against the internet (currently 4.5 billion pages), previously submitted assignments (approximately 10 million) and the ProQuest database of electronic journals. A detailed ‘Originality Report’ is created instantaneously for each assignment. Each instance of copying within individual assignments is colour coded and included in a calculated cumulated percentage of the assignment copied from electronic sources. Instances of copy longer than approximately one line of text or eight words are colour coded and included in the calculation. Each class list is available to view using a colour coded similarity index that quantifies the level of copy detected in a semi-quantitative fashion. It must be emphasised that Turnitin does not differentiate

between acceptable and unacceptable copying. Thus perfect referencing or a quotation appears in the originality report as copy. It is therefore necessary for each originality report to be interpreted to determine the level of unacceptable copy.

Turnitin is not the perfect tool for detecting copying. It does not detect copy from textual material not found electronically e.g. older text books or non-electronic journals. It only detects copy against Latin script (ISO -8559-1) thus it will not detect copy from Chinese or Japanese character sets. It will not always detect copy from new, refreshed or recently modified web pages e.g. electronic newspaper editions. It is not suitable for detecting copy in assignments with non-textual material such as diagrams or music notation. Word substitution is also a mechanism that some students may be utilising in an attempt to avoid being detected although an experienced reader can usually detect those substituted words that often do not make sense or are not in context. Thus it is not the perfect tool for detecting copying but staff involved in a recent trial were unanimous in their support for the value it provides.

The level of copying detected from one participating university showed that of the 949 assignments submitted to Turnitin in Semester One, 2004, two assignments had red similarity indexes (75% – 100% copy), 12 had orange indexes (50% – 75% copy), 71 assignments had yellow indexes (25 – 50% copy) 778 assignments had green indexes (1 – 25% copy) and 86 reports had blue similarity indexes (less than 20 words copied). In some the yellow and orange indexed assignments, all of the copied text was adequately cited, however an assignment with 70% copy and only 30% original material would probably not receive a very high mark. One staff member involved in this trial looked in detail at the green reports for a particular paper and determined that although the level of copy was less than 25% there were still 18 of the 107 students in the paper with unacceptable levels of plagiarism. Nine of these students had minor problems and a further nine or approximately 10% of the green reports had what were considered to be moderate problems (based on criteria determined by the staff member).

Generally 10% of all assignments appear to show a similarity index of more than 25% copy although this can vary enormously across papers. Further investigation is required to determine the level of plagiarism and not just relying on the level of copying as per the originality report. The smaller detailed investigation described above shows that even those with less than 25% copy can contain unacceptable plagiarism. The most common type of unacceptable copying was direct cutting and pasting from the internet. In some cases large passages of material including entire paragraphs were used. The second most common type of copying was 'sham paraphrasing' i.e deliberately attempting to disguise words taken from other sources by adjusting one or two words and still not citing the original author. The third type involved copying from other sources, such as:

- a model answer;
- another student in the same class;
- an assignment submitted in a previous year;
- material submitted to, or obtained from, other institutions.

It is also thought by some of the staff involved that students have already reverted to copying from text books which will be not be detected directly unless they are available electronically. This was detected as copy between students, however on investigation they both appear to use the same secondary source. This will be the indirect mechanism by which copying of this type will increasingly be detected. As students learn how to avoid detection by electronic originality checkers, staff will need to make use of other (non-electronic) detection methods, such as

- looking for dramatic variations in grades;
- looking for changes in writing style or quality within or between submitted work;
- requiring students to give an oral explanation of some or all of their written work.

2.3 POLICIES

It is important that institutions ensure that electronic detection of plagiarism is in keeping with relevant policies. For example, one institution's use of Turnitin is captured in its 'Guidelines for the management of academic misconduct allegations', which state that "The University reserves the right to monitor any assessment material using computerized search tools". The legality of exporting students' intellectual property for permanent retention has been a common issue raised about the use of electronic detection methods, to which institutions have responded by developing clear guidelines on the role of Turnitin in

the context of ensuring quality learning and teaching and upholding academic integrity. The communication of such guidelines included:

- Developing web-based resources outlining the role of Turnitin and how it is used.
- Outlining use of Turnitin in course documentation, such as course outlines and prescriptions (examples of such statements are: “As well as handing in hard copies, we require ALL written assignments be submitted to Turnitin.com. This Internet site crosschecks assignments submitted by students against all Internet sites and assignments submitted by other students to the website.” “In 2004 Electronic Commerce Strategy will participate in a trial of Turnitin, anti-plagiarism software from turnitin.com. Each strategy plan will be submitted to Turnitin which will compare all plans with each other and with content on the Web, previously submitted assignments, journals and textbooks. If substantial duplication without attribution is found, then plagiarism will be assumed. Instructions for submitting assignments to Turnitin is provided on the WebCT site”).
- Adding statements to existing assignment coversheets certifying that the student agrees to having their assessment electronically reproduced, communicated and archived for the purpose of detecting plagiarism (for example: “I understand this assignment may undergo electronic detection for plagiarism and an anonymous copy of the assignment may be retained on the database and used to make comparisons with other assignments in the future”).
- Gaining staff agreement to abide by a number of guidelines, aimed at placing Turnitin in an educational role, for example:
 - There is full disclosure of the use of this software to all students in the courses in which Turnitin is used.
 - Upon detection of non-original work with the software, the responsible academic will inform the student that their assessable work must be original, provide the student with information on how to avoid plagiarism, and require that the work be resubmitted within a limited time.
 - There is scope for variability in the number of assessment resubmissions acceptable within a given program, with the determination to be at the discretion of the Head of School, in conjunction with the relevant course and program coordinators.
 - Any action on student plagiarism must be in full alignment with the institutional plagiarism policy, with output from Turnitin available as evidence only, and not a singular determinant in the judgement of the plagiarism hearing.

(acceptance of these guidelines is tracked in a register and electronic sign-off required before the creation of a Turnitin account for an academic).

2.4 PROCESSES

With Turnitin, it is possible to have individual departmental licenses or institution-wide licenses (which allow Turnitin to be used in all programmes and on different campus locations). At several institutions, use of Turnitin began with a single department conducting a trial, at others staff were invited to participate in an institution-wide trial. Attracting participants to join the trials required staff to perceive value in Turnitin. At four of the institutions, Deans and/or Academic Heads invited staff to participate on a voluntary basis. At the other institution, eight courses were specifically selected and a further two joined at the request of interested teaching staff. Information for staff on the role of Turnitin and the purpose of the trial was communicated by via email. Students were informed by their lecturers, with reference to web-based information and course documents illustrated above. The trial results (which were generally positive) were reported to such groups as the institution’s Ethics Committee, or an Assessment Party on Plagiarism.

Time taken to ratify trial processes and/or review results with the appropriate institutional bodies, and the availability of information for students, even to those not participating in the trial, were key to avoiding negative student feedback. Most students were comfortable with the use of Turnitin, some suggesting that catching “cheats” created a level playing field for honest students. Others acknowledged that Turnitin helped them identify gaps in their own knowledge about academic integrity. A small number of students were quite hesitant about Turnitin, in particular those concerned that their attempts to be honest were not sufficient. Some students reported a preference to be able to pre-check assignments before making final submissions. Very few technical issues were reported by students, and were predominantly confined to those who were not computer literate.

Staff reported that Turnitin acted as a strong deterrent for most students. The exception to this was students struggling in other aspects of their studies and adopting an instrumental approach to learning. Many staff felt that Turnitin had increased student awareness of plagiarism, and this was evidenced in changing student behaviors, such as improved referencing practices and lower borrowing and recycling of material. In one institution, a Department that in Semester 1, 2003 had reported manually finding 15 assignments containing plagiarism, found only 2 in the same subject for Semester 2. This was attributed by the Department Head to the warning given to students that Turnitin may be used. Both class sizes were around 300. Staff also reported that Turnitin had improved their detection of plagiarism, with some commenting on their own increased awareness of the problem.

The majority of staff were satisfied with the support provided to themselves and to students, and felt that Turnitin has the potential to improve academic integrity. General consensus was Turnitin did not decrease the amount of time spent marking, rather it changed how time was used from finding plagiarism toward interpreting Turnitin's colour coding and counseling plagiarists. Minimal technical issues were reported. Those raised included the time taken to upload files, time taken to manage repeat submissions, and difficulties experienced when submitting large files. Concerns about the reliability of originality reports included low levels of comparison with electronic data bases and print books, requiring secondary citation to be identified. In addition concerns about impact of Turnitin usage on institutional brand and the contribution of student intellectual property of database were raised.

3. CONCLUSIONS

After conducting various trials, all five institutions will be using institution-wide licences in 2005. This simplifies administration, allowing Turnitin to be managed in full alignment to the organizational structure of the institution, and supports established quality assurance processes and management. Cases of other institutions taking out a licence and not using it have been reported, it would seem because the process was not managed or planned at an appropriate level. The successful implementation of Turnitin at our institutions has been characterized by institutional endorsement of the education-detection-policy approach, backed up by a suitable level of support and training.

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