

Making the case for multiple submissions to Turnitin

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Abstract

In 2006 Cranfield University adopted Turnitin as its primary coursework collection and plagiarism checking mechanism. One year later, the University Senate voted to ban the use of the multiple submissions facility it offered on the suspicion that it may provide students with opportunities to manipulate their work and “beat the system”. Students would instead receive just one demonstration of the originality reporting system to illustrate that aspect of the coursework assessment process, but would not gain access to any information it provided in relation to their submissions thereafter.

A policy change of this magnitude was worrying since there was no evidence to support the suggestion that Turnitin had been subverted in this way. Not only did it limit the value of Turnitin as a formative tool but it also appeared to contradict the university’s obligation to instill a sense of personal responsibility and academic integrity in its students.

This paper describes the case being constructed in an attempt to reverse this decision. It will discuss potential reasons for and the impact of such a policy change. It will present an analysis of the data collected from the Turnitin system in order to identify any significant trends in plagiarism at the university, as well as anecdotal evidence uncovered in the course of this investigation which indicates ways in which the system might be circumvented. Finally this paper will describe how the multiple submissions mechanism should form part of a coherent strategy for plagiarism prevention (rather than be excluded from it).

Background

At the July 2007 University Senate meeting, a recommendation was made by the Cranfield University Teaching Committee (CUTC) to restrict the way in which the Turnitin plagiarism detection software should be used with respect to the summative assessment of student work. Specifically, "...with the exception of a formative assessment at the start of a course, students should not be permitted to make multiple submissions to Turnitin UK when submitting work. The formative assessment would familiarise students with Turnitin, after which they would submit each assessment just once" (Cranfield University, 2007). This recommendation makes it clear that the use of the mechanism which allows students to submit draft versions of their coursework to Turnitin prior to the deadline for assessment will be prohibited. Reasons for prohibiting the continued use of this mechanism were not recorded but it is assumed that this decision was made based on concerns that students may try to subvert the system and use the originality reporting mechanism to successfully plagiarise the work of others.

One of the questions posed by the Third International Plagiarism Conference is, "Are issues of authenticity and plagiarism destroying or requiring us to rethink traditional beliefs about the educational experience?" It is possible that uncertainty about the implications of new technology like Turnitin and its impact on the aforementioned "traditional beliefs" may have prompted the CUTC recommendation. This paper has been written to appeal against the decision to prohibit multiple submissions to Turnitin and to illustrate why the problem of plagiarism cannot be overcome simply by restricting the way tools designed to facilitate plagiarism detection are used.

Plagiarism and the Internet Age

The Internet granted millions of users unfettered access to a vast array of information. In so doing, it circumvented many of the safeguards designed to maintain the integrity and ownership of intellectual property. The immediate availability of the original work of millions of individuals caused a major shift in attitude regarding access and ownership. The ease with which copyright could be infringed (intentionally or otherwise) distorted the boundary between what was permissible and what was not. As Carroll (2007, page 23) puts it, "Digitalising text means anyone can use it, manipulate it and seem to 'own' it".

The ability to freely digitise and distribute copyrighted material emerged so quickly that many of those industries which generate income not from tangible goods but from the intrinsic value of the artistic and intellectual efforts of others could do little more than try to reduce their exposure to its damaging effects. Even now, media companies are fighting expensive and protracted legal battles as a result of their failing to evolve quickly enough to protect their intellectual property (the copyright infringement case between Viacom and YouTube (BBC, 2007) is a typical example of this). Such an upheaval in the world of publishing

can rightly be described as a paradigm shift: in some cases, the mechanisms by which certain industries and organisations previously generated revenue were replaced almost overnight. The effect of this shift has been no less dramatic for the education sector. A veritable encyclopaedia of information on virtually every subject ever taught is now just a few clicks away, often available in forms which are ripe for reuse.

It could be argued that knowledge remains something which can only be gained through honest toil but, for some, it has become indistinguishable from information which is easy to acquire. The arrival of the Internet put certain established educational practices under pressure and has revealed some to be inadequate for (or, perhaps more accurately, poorly executed in) the Internet Age. Where subject information was previously limited to a familiar collection of publications held in the on-campus library, it can no longer be assumed that the teacher will be conversant with more than a tiny fraction of the resources now available to the student. This makes it more difficult to detect plagiarised work, and the teacher must increasingly rely on a combination of tools and techniques to establish the veracity of student work. This may also suggest that traditional assessment practices should be rethought in order to adapt to rapidly changing circumstances.

Evidence of the impact of Turnitin at Cranfield University

The web-based TurnitinUK service was made available for the purposes of evaluation in November 2005 to various groups across Cranfield University which were engaged in postgraduate-level teaching. It was accessible only by academics via <http://submit.ac.uk> (rather than integrated into a Virtual Learning Environment (VLE) or other University system) for a period of approximately 18 months, during which time approximately 3000 submissions were made to it. In November 2007, basic usage data was extracted from it to establish whether there were any trends regarding the originality of student work which might suggest that plagiarism was a cause for concern. Due to the simplistic way in which data was presented, it was possible only to identify which originality “band” each submission fell into. Briefly summarising this data:

- 4.8% of submissions received an originality score between 75% and 100% (i.e. a very large proportion of duplicated material was detected in those submissions)
- 2.7% of submissions received an originality score between 50% and 74%
- 10.1% of submissions received an originality score between 25% and 49%
- 69.6% of submissions received an originality score between 0% and 24% (i.e. a small proportion of duplicated material was detected in those submissions).

In September 2007, the Defence College of Management and Technology (the campus of Cranfield University at Shrivenham (near Swindon, Wilts.)) integrated a slightly different version of Turnitin into its newly-acquired VLE. This system was deployed to allow students to submit their work directly to Turnitin as well as to check the resulting originality report if they so wished. As before, this version of Turnitin records originality scores for submitted work but the composition of the data gathered had been changed. To explain, it records the exact originality score for each submission (rather than merely indicating the band it falls into) as well as the number of submissions made by each student for any given assessment. This means that the usage habits of students can be scrutinised more closely and particular attention can be paid to submissions which appear to have been revised many times (which could indicate that plagiarised material has been progressively disguised, as assumed by CUTC).

Usage data generated between September 2007 and April 2008 was extracted from the system and, once clearly identified test and “dummy” submissions had been discarded, data on 914 separate items remained. That data indicated the originality score for each item and the number of times it had been uploaded, allowing an average originality score (16.41%) and average number of submissions per item (1.18) to be calculated.

Because the two versions of Turnitin generated non-identical data, all that could be usefully concluded from it was that there was no clear indication that plagiarism was prevalent or that allowing students to make multiple submissions resulted in a noticeable increase in plagiarism. In fact, it would appear that, from the average number of submissions per item, students are largely unaware that they may use the system in this way.

Reactions to Turnitin

CUTC is not the only voice in the education sector recommending that restrictions be placed on the way in which Turnitin is deployed. Shortly after the committee made its recommendation, Haigh and Meddings published a report entitled “Using Turnitin Plagiarism Detection Tool To Promote Academic Integrity” which surveyed 55 student midwives in order to analyse their experiences of Turnitin. This investigation was based on the assumption that “...student plagiarism is often a problem of students misunderstanding what is required of them rather than being dishonest” (Haigh and Meddings, 2007, page 2). The students were interviewed and gave responses to a series of questions which considered different aspects of Turnitin and the way it was deployed. For example, regarding the interpretation of Turnitin originality reports, students reported difficulties such as:

“It said 17% and I thought well what does that mean?” (Ibid, page 6)

With respect to the sources indicated by Turnitin following a submission: “I referenced it but it’s come back from some other source as well, so is that plagiarism?” (Ibid.)

Haigh and Meddings questioned student perceptions of “academic integrity”, eliciting responses such as:

“... I thought I need to make sure that I have [put a quotation in my own words], so just make a few changes in the words.” (Ibid, page 7)

“I wrote a lot of essays at A level but you didn’t really have to reference” (Ibid, page 8)

“If you use the term academic integrity, then it wouldn’t make people stop and think. But if you use the word plagiarism ... then you would make sure that your references are correct” (Ibid.)

These responses do not indicate a clear intention to maliciously plagiarise but rather seem to suggest a lack of awareness of the rules which govern how sources of information may be used. Haigh and Meddings also noted several student opinions which suggested that, with experience, the use of plagiarism checking tools could be highly instructive:

“Once you have got your feedback from it and you are aware of how it does work, then you are aware of how a plagiarised essay will come up so in that sense you can learn from it” (Ibid.)

“I think that I understand a lot more when I am writing an essay and I am using references and I am backing up with evidence... because I’ve got to be able to interpret what I am reading to reference it properly and not copy it ... So it is a benefit to you as it makes you understand your subject a lot more.” (Ibid, page 9)

“I don’t think it’s something that you can learn from day one, it’s like, professional growth” (Ibid, page 10)

Haigh and Meddings suggest that undergraduate students may lack the academic maturity to honestly and correctly cite the source of their work, preferring instead to use the Turnitin originality report to modify quotations to in order to make them their own. They observe that, “To some extent paraphrasing and playing with the ideas of others can be seen as a step on the way to developing good writing skills” (Ibid.). But they then conclude: “However in order to avoid assisting students to deliberately manipulate the work of others, particularly fellow students, it may be advisable to avoid access to Turnitin reports in advance of assignment deadlines” (Ibid.). This begs the question, when is the appropriate moment to allow students to decide for themselves how to utilise the work of others? If it is not at undergraduate level, surely it should be

at postgraduate level (if for no other reason than to adhere to the Masters (M) level descriptors defined by the Quality Assurance Agency for Higher Education (QAA))? As defined by the QAA (2001), M level study is intended to promote “conceptual understanding that enables the student to evaluate critically current research and advanced scholarship in the discipline”. How can a student achieve this goal if they are not encouraged to acquire the skills necessary to judge the merits of the work of others? It may be that Turnitin is the only device they will encounter which explicitly demonstrates the impact of incorrect citation on their work.

Whilst Turnitin may seem to offer the student opportunities to flout the rules, there is actually very little evidence that deliberate plagiarism is commonplace. However, Haigh and Meddings (2007, page 11) still reach the same conclusion as CUTC: “We feel that for the first written assignment (perhaps an early formative essay) students should submit electronically via Turnitin and should have access to their personal report. This report could be used as a focus of discussion re referencing and plagiarism in a dedicated module, or with a personal tutor. It will enable students to appreciate what the tool can do and may prevent future temptations to plagiarise.” They go on to recommend that all subsequent assignments should be submitted to Turnitin but that originality reports should not be made available to the students to eliminate the opportunity to manipulate work prior to submission. However, their conclusions indicate not that there is an overwhelming desire to disguise plagiarism but rather a lack of understanding of the purpose of the information generated by Turnitin: “Our focus group data suggests that the ambiguity of these reports can cause unnecessary anxiety for some students. Moreover the information provided by Turnitin contributes very little to the development of accurate referencing skills; for example it is more likely to link the work to a citation by another student than to provide the primary source.” (Ibid.)

Whilst this last point is not in question, it does not diminish the fundamental issue of familiarisation and training. If a student (or indeed any user) is to benefit from adopting a new system, they must not only know how to interpret its outputs but also understand the actions it performs. In the author's experience, the most common reason for one student's work referencing another is that the source in question is not present in the Turnitin database in its original form. It cannot be assumed that every resource ever written will be accurately captured and correctly assimilated by the system – that is not the primary purpose of Turnitin.

Beating the system

The Haigh and Meddings report focuses on just one way in which Turnitin can be deceived: disguising plagiarism by manipulating the text of a submission based on the results of an originality report. The Turnitin multiple submission mechanism was also perceived by CUTC to be a sufficiently serious threat to academic integrity to discontinue its use but, in fact, there are several ways in

which the protection offered by the system might be reduced, irrespective of whether multiple submissions are banned or not.

Clearly there will always be limitations associated with automated plagiarism detection systems, just as there are with traditional manual methods. When using either, a balance must be struck between being able to accommodate a range of submissions and resources and being sufficiently rigorous to produce valid and repeatable results. Focussing on just one limitation of a system without considering the context in which it is intended to operate will always distort perceptions of that system. By reviewing several identified weaknesses of Turnitin, the issue of allowing students to repeatedly submit drafts of their work can be seen in a wider context in order to illustrate why it is better to devise a strategy to embrace the system's strengths and mitigate its weaknesses rather than fixate on a single shortcoming and significantly limit the usefulness of a potentially valuable tool as a result.

The following vignettes are intended to illustrate ways in which the student might attempt to defeat the system, as well as to indicate how Turnitin users might minimise the chances of plagiarism in such circumstances:

Vignette 1

In order to quickly ascertain how many unattributed citations a submission contains, the teacher may enable the “exclude quoted” option, thereby de-emphasising all strings of words highlighted by the originality report which are written in quotation marks. Knowing this, the student encloses plagiarised passages in white-coloured quotation marks to fool both the system (which will remove those sections from the originality report) and the naked eye (by matching the font colour to the background colour of the screen or page).

How can this outcome be avoided?

The teacher does not use the “exclude quoted” facility and instead opts to review the complete, unfiltered originality report together with a visual inspection of the original document to verify whether quotations have been correctly cited.

Vignette 2

The student plagiarises passages from a non-electronic source which is not listed in the Library catalogue and which has not been previously cited by the teacher. Since the source may not yet be included in the Turnitin database, the chances of being caught are small.

How can this outcome be avoided?

Both students and teachers are trained to recognise that Turnitin should be regarded only as a tool to assist in the detection of plagiarism. It is designed to be used in tandem with (rather than entirely replace) traditional measures for assessing academic integrity (such as identifying abrupt changes in written structure and style).

Vignette 3

Rather than constructing a bibliography manually, the student submits a draft of their work and constructs a list of citations from the results of the originality report in order to avoid accusations of plagiarism.

How can this outcome be avoided?

Since the student is not trying to pass quoted material off as their own work, this approach is not illegal. However, the teacher should examine the bibliography for suspicious or obscure references (for example, sources which have little or no obvious association with the subject being examined or which are actually references to other Turnitin assignments (which are not readily available to the student)).

Vignette 4

Having included plagiarised material, the student electronically encrypts their assignment prior to submission in order to make the text non-machine readable whilst retaining a normal visual appearance. The document cannot be usefully assessed with Turnitin and, since it contains little or no text which can be read by the system, could result in a very low originality score. This may, in turn, reduce the chances of the work being closely scrutinised by a busy teacher who has to mark numerous assignments and whose marking strategy is based on inspecting only those submissions receiving high originality scores.

How can this outcome be avoided?

The university ensures that the rules which govern the permissible format and style of assignment submissions clearly state that only machine-readable documents will be accepted. The teacher inspects all originality reports, paying special attention to those which carry unexpectedly low word counts.

Vignette 5

The student (either for genuine reasons or for the purposes of deception) submits work which contains material which is exempt from inclusion in the Turnitin database (for example, a report which contains data gathered from their workplace might be considered to be too commercially sensitive to be submitted to a third party system and would, as a result, avoid electronic verification).

How can this outcome be avoided?

The teacher designs the assessment to avoid reliance on sensitive material, offering guidance on how to replace it with “dummy” data where necessary. Where this is not possible, the student separates their assignment into two parts: the main report (which will be submitted to Turnitin) and the annex containing the sensitive data (which will not be submitted to Turnitin). In institutions where this occurrence is commonplace, an alternative plagiarism detection system which can be operated in a secure environment could be acquired to establish the integrity of sensitive documents.

Vignette 6

In order to disguise plagiarism, the student employs the technique of “article spinning”. That is, replacing words or phrases plagiarised from other sources with synonyms, either manually or automatically with the aid of software. (This technique was originally devised as a means to manipulate the ranking of websites on search engines. If search engines detected the presence of material plagiarised from other websites the ranking would be reduced, so “spinning” the plagiarised material might avoid this outcome.)

How can this outcome be avoided?

As noted in Wikipedia, this technique is not yet sufficiently advanced to pose a truly credible threat: “Although article spinning may, at least for now, fool the search engines, it produces pages that are of poor quality for humans to read” (Wikimedia Foundation Inc., 2008). Therefore, the presence of incongruous words or phrases (or, at least, words or phrases which seem excessively elaborate when describing the subject in question) is likely to indicate that a submission has been “spun”, and the teacher should be vigilant for such telltale signs. If collusion occurs and several submissions are “spun” from a single document, it is quite likely that the structure and layout of each submission will be noticeably similar (for example, identical errors may be present in all versions of the document.)

Certain other steps could be taken to avoid this outcome:

- Train the student to correctly cite material to ensure that they are aware of the rules which govern this activity and are not uncomfortable using other sources.
- Demonstrate why attempting to disguise plagiarism may actually entail more effort than writing the assignment themselves.
- Where multiple submissions to Turnitin are allowed, check the total number of submissions made by each student (indicated simply as “Submitted” on the originality report for their work). Whilst 2 or 3

submissions might be expected, significantly more might indicate that originality reports have been used to disguise plagiarised material.

Rethinking our approach to plagiarism

The fundamental aim of this paper was to question the decision to discontinue the use of the Turnitin multiple submission mechanism. It cannot be denied that this system introduces new opportunities and risks for both plagiarism and plagiarism detection but it also forces us to reconsider how we approach the issue of academic integrity. Should this system replace all previous means of deterring plagiarism or should it work alongside them? And can we be sure that limiting its functionality will help students to understand the importance of correct citation and recognise the contribution this can make to their own learning? Whilst available evidence suggests that certain features of this system could be used to disguise plagiarism, it does not support the assumption that students will use the system to further their academic career at any cost.

None of the preceding vignettes would be avoided merely by discontinuing the use of the Turnitin multiple submission mechanism. Almost all of them do, however, reinforce the idea that Turnitin is just one tool out of many which could be employed to tackle plagiarism. Understanding not only how to use this system but also what its limitations are is an important part of deciding how to deploy it. Its very presence reveals potential areas of weakness in established practices and processes which may have been previously overlooked. In this respect, Haigh and Meddings report one particularly relevant student insight:

“I don’t think that people realise that there are these tools and think that they submit some mates work from the year before and get away with it” (2007, page 8).

If assessments remain unchanged year after year, it is hardly surprising that students might be tempted to take advantage. Whilst Turnitin is capable of catching those who do, it will never single-handedly eradicate plagiarism. A plagiarism minimisation strategy should adopt a range of measures and tackle the problem on several fronts. It should reinforce positive messages about utilising the work of others rather than exist only as a punitive measure (which may simply deter students from using any sources at all). Above all, it should react to evidence that plagiarism has taken place rather than try to predict how systems such as Turnitin might be subverted.

Much has already been written regarding ways to minimise plagiarism. In addition to the Turnitin-specific actions described in the vignettes above, there are several techniques which can be employed to design assessments which offer few (if any) opportunities to plagiarise. The Joint Information Systems Committee (JISC) Internet Plagiarism Advisory Service published an information sheet entitled “Reducing plagiarism through assessment design” which

recommends several ways of making existing assessment methods less vulnerable to plagiarism, including:

“Asking students to submit work-in-progress reports, review notes, drafts or revisions are all strategies that will help students to manage their time more effectively and avoid any last minute panics that might lead to plagiarism” (Northumbria Learning Ltd., 2007)

“Adding context to an assignment by inviting students to draw on their own experience or select a personally relevant research topic within a theme, or specific framework will encourage original work.” (Ibid.)

“Design assessments that move beyond asking students to find the ‘right answer’ to requiring them to analyse, evaluate and synthesise the work of others” (Ibid.)

“Changing elements of the assessment task each year or specifying particular types of resources that must be included in the analysis reduce the possibility of submission of a paper downloaded from an essaybank” (Ibid.)

However plagiarism is addressed, it is better to roll measures out slowly to avoid overwhelming students who may already be nervous. Carroll (2007, page 31) suggests discussing plagiarism openly in order to dispel myths: “One important way to reassure those adhering to regulations and to deter those considering breaking them is to encourage informed discussion with informed teachers about what the real worries might be.” Allowing students to make multiple submissions to Turnitin prior to an assignment deadline is another way to increase their familiarity with the rules of citation. If they understand how their work is judged and the systems used to judge it, they will be able to make informed choices about the value of the sources they use and the contribution they make to their learning. As Haigh and Meddings discovered, the concept of academic integrity is not lost on those students who are given a chance to reflect on it:

“...being able to reference and reference correctly is also a beneficial way of learning. I think that I understand a lot more when I am writing an essay and I am using references and I am backing up with evidence... because I've got to be able to interpret what I am reading to reference it properly and not copy it...” (2007, page 7).

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