

# **Plagiarism Management: Improving Public Health Students' Academic Writing Skills**

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## **Abstract**

There does seem to be a fundamental agreement that plagiarism has become a “serious and endemic problem” (Hart & Friesner, 2004; p89). Despite HE institutions providing students with clear guidelines as to what plagiarism is there is a body of literature that suggests that simply informing students about plagiarism is not enough (Barrett & Malcolm, 2006; Stefani & Carroll, 2001; PAS, no date). Consensus seems to be that, in the first instance, students are taught about the rules surrounding plagiarism and then once they have this knowledge they should be given the opportunity to complete discipline specific tasks to enable them to apply what has been taught. Turnitin provides this opportunity as the very nature of this software allows the student to see exactly where they have incorrectly cited or referenced and affords them the opportunity to amend their practice accordingly. When considering key experiential learning theories, for example Kolb’s Cycle (Kolb, 1984), it can be argued that this approach make good academic sense as students are afforded the opportunity to learn by ‘doing’. They are then able to reflect on, and learn from, the experience and perhaps more importantly, are able to experiment with what they have learnt by linking both theory and practice.

Within the Masters in Public Health course, at the University of Bedfordshire, the teaching team have adopted Turnitin as part of their standard operation and would like to share some of their experiences, both positive and negative, of using it in this context. The experiences gained during the first part of the semester would be useful for other colleagues considering a school-wide, or programme wide, deployment of this type of practice. Some examples include: how to work with students to improve practice; supporting students with disabilities; and issues that new team members have faced when the tool was rolled out programme-wide.

Feedback from students indicates Turnitin's implementation has been successful on a number of levels. A key benefit for students is the ease with which feedback is obtained from the system. The Public Health team now have a range of inventive methods for dealing with student feedback and building confidence. The most important message is the emphasis by students on practical experience: a hands on approach, from a students' perspective, is much easier to comprehend and understand than methods traditionally employed.

The staff feel Turnitin has provided a tool that has enabled them to manage plagiarism in two ways:

- 1) providing students with a safe environment for developing referencing and paraphrasing skills
- 2) offering a degree of quality assurance for assignments

Two questions now exist for future development:

- 1) can Turnitin provide a useful diagnostic tool for new arrivals?
- 2) can GradeMark work as an effective method of online feedback for distance learning students?

## **Keywords**

Plagiarism detection Public Health e-Learning

## **Main Body**

In the most fundamental sense possible plagiarism is at total odds with the notions of fairness and academic practice. Staff and students alike often respond with a standard definition when asked how to describe the act of plagiarising. The Oxford English Dictionary presents a definition which is generally synonymous with students' and lecturers' definitions:

“The action or practice of taking someone else's work, idea, etc., and passing it off as one's own; literary theft.”

But, how can we determine if an idea is truly original? The very nature of academic work presents a dichotomy in this respect. Academic writing involves taking other peoples' words and altering them until they become different from the original source. Of course we ensure

that the original ideas are credited to their owners. For students this can seem confusing, and sometimes a process that students feel should not be given appropriate effort. Worst still students sometimes fail to see how some of their actions can lead to the act of plagiarising; Marshall and Garry's (2005; p464) research confirms these notions in a very detailed analysis. The suggestion is that students seem to be of the mindset that "provided the copying is indirect or of elements that are not visible, it is less serious than direct copying of phrases". Perhaps it is the fact that the act of paraphrasing (or writing it in your own words is the term we try to use) can also be a difficult target for non-native English speakers to fully understand, let alone grasp to the extent UK institutions require. It is this point that raises serious questions about the nature of how students are taught the value of the written word and their understanding of plagiarism.

Copying and pasting large chunks of text from the Internet, as well as purchasing complete essays, is now extremely easy and as a direct result little opportunity is provided for learning to occur. Although the growth in electronic text is recognised as being one of the key reasons for plagiarism (Williams, 2002; Higher Education & Research Opportunities in the United Kingdom, 2004) there are many other factors that need to be considered. Dordoy (2002) identified 'getting a better grade' and 'poor time management' as being the two commonest reasons given by students for plagiarising work. However, whatever the reasons given, Higher Education institutions in the UK have placed plagiarism high on the agenda and two approaches are now commonly employed to combat it. The first is providing the students with clear guidelines about the institutions procedures (including the action that will be taken should plagiarism be detected) and the second is to "fight technology with technology" and invest in plagiarism software packages (Hart & Friesner, 2004, p92). However, Levin (2003) suggests that academics are "exceedingly twitchy", and "in the grip of moral panic", when it comes to plagiarism. He likens the growth of the anti-plagiarism industry in the United Kingdom to a "witch hunt" and argues that the HE system of learning forces students and academics to plagiarise. Barrett & Malcolm (2006) take this one step further and debate the value of getting all students to submit a piece of work through an electronic plagiarism detector, such as Turnitin®. The very nature of this software allows the student to see exactly where they have incorrectly cited or referenced and affords them the opportunity to amend their practice accordingly. When considering key experiential learning theories, for example Kolb's Cycle (Kolb, 1984) such approaches make good academic sense as students are afforded the opportunity to learn by 'doing'. They are then able to reflect on, and learn from, the experience and perhaps more importantly, are able to experiment with what they have learnt by linking both theory and practice.

The Public Health course at the University of Bedfordshire has what could be described as a unique demographic consisting of large numbers of overseas students. This represents an excellent opportunity for cultural exchange and experience for our overseas students. But with such advantages we find that students sometimes have difficulties adapting to the UK's academic standards. However we should bear in mind Park's (2004) description of "deliberate plagiarisers" as attempting to take a chance in the hope the work will be examined by a benign tutor. Park defines the key elements of a system to dissuade would be plagiarisers as needing five key elements; these can be summarised as applying an approach which is obvious and applied in a consistent manner.

The University also introduced a new approach to developing its curriculum (CRe8 – Curriculum Review 2008). Several new ideas regarding student engagement and interaction have been placed at the forefront of academic development. With Turnitin® several opportunities for development presented themselves:

### **Personalised Learning**

Students can submit work in a formative fashion into the Turnitin® system; tutors can use either existing examples, or anonymous examples from the class to demonstrate the university's requirements for acceptable academic practice. Students can also examine and reflect on their own work to see if their practice is effective.

### **Employability**

Many of our degree courses lead to employment where ethics form the heart of operational procedures, and this is especially the case for public health students. Therefore we can promote the ideals of writing in an academic context: being responsible for correctly attributing other authors' ideas; working with other students to produce group-work; and meeting the challenge to produce original work.

### **Assessment**

Students' work from previous cohorts can be shown to new cohorts; poor practice exhibited by previous groups can be discussed to help shape the new cohort's learning.

Students' work can be marked and commented upon online. The results of this are instantly available to students who can view feedback online. A rich range of feedback can be delivered to students: a standardised palette of comments, annotations and online

grading are available. The system is available wherever a member of staff, or student, can gain access to BREO (BlackBoard).

Such developments highlight the need for students to be in large part responsible for their own learning (Macdonald and Carroll (2006)). However, if we expect students to be proficient in the practices of referencing and citation we need to give them the tools to develop these skills. To quote Aristotle: "What we have to learn to do, we learn by doing." This is the basis for the development of Turnitin® within the Public Health course. Instead of taking an approach which catches students once they have plagiarised, students are invited to experiment with academic writing. The Public Health team suggest that the solution to better engage and understand students' academic writing skills (with specific respect to plagiarism) is a mix of personal responsibility on the students' part and academic engagement. Our view was formed from our own experiences and evidence from the wider academic community.

### **A very brief primer on the operation of Turnitin®**

On a simplistic level Turnitin® detects text which bears a direct, or close similarity to information from other sources (the internet, electronic journals or past students' papers). In many cases students have a tendency to copy sources of text either verbatim, or to copy sections of text making a limited number of changes. It is important to indicate that Turnitin® is not per-se a plagiarism detection service, it is designed to provide evidence of incorrect, or undesirable, activity. We cannot stress enough the importance of a human element when examining a student's assignment. Such views are supported by other authors who are subject to further discussion later in this paper.

There are many different ways in which Turnitin® can be implemented for a university or even individual departments: integrated plug-ins for a particular VLE; opening an account with Turnitin® (for UK staff this would be [www.submit.ac.uk](http://www.submit.ac.uk)). Within the University of Bedfordshire the former method is used; a plug-in for our BlackBoard system provides a method of organising students' assignments and classes. Tutors are able to configure individual assignments to their requirements within a module. Once an assignment has been added and activated, tutors can review all of the classes' submissions through a single interface. McKeever (2006) provides a good summary of the types of techniques used within plagiarism detection systems. For the purposes of simplicity it is best to consider Turnitin® as utilising a form of text matching algorithm, the matches need not be exact (similar chunks of sentences, or word substitutions can still be detected). For each submission a value called a "Similarity index" is generated; this provides an indicator of how much information can be matched, or linked to external sources (other students' assignments, electronic journals and

archived web pages). Students and lecturers can examine the sources which Turnitin® considers to be similar; these are provided in a split window arrangement (with an assignment shown beside the original content).

For the Public Health team, generally speaking ‘high scoring’ (high similarity index) assignments (>15-20%) are examined in detail to determine the nature of the matched content. Some matches are the result of false positives generated by Turnitin®, mistakes by students or poor academic practice. However, it is not the responsibility of the software to determine if a submission should be examined in more detail, this is a matter for an individual tutor.

### **A brief review of selected sector-wide activities**

We have provided a brief discussion of some sector wide activities and ideas that are synonymous with our own experiences.

Perhaps stereotypically overseas students are often seen as being more prone to plagiarising. Introna et al (2003) provide an analysis of overseas students’ attitudes and understanding of plagiarism. Parallels can be drawn between this research and our own experiences, specifically the student demographic in Public Health is mainly African and Asian based. In many cases the act of plagiarism is usually explained by either poor English skills (namely the ability to re-write something in a students own words), or the practice being accepted by home institutions. Our own observations and experiences suggest that our students have a degree of difficulty grasping the requirements of good academic practice. Introna’s report highlights specific groups of students and the types of issue they face. With this in mind our default approach is to assume that our students have a limited knowledge of plagiarism and this forms a starting point for building their skills up. In contrast Ellery (2008) examines the problem of plagiarism from a pedagogic perspective within a South African university. The work discovered to be plagiarised demonstrated some typical hallmarks which we have discovered ourselves: changes in the style of writing, alterations to the font style within the document and passages of text which did not seem to fit with the surrounding text. However, Ellery could not attribute ethnicity, language or gender as being statistically significant single-standing factors to indicate the likelihood of plagiarism problems. Such a conclusion is in some respects different to the generalisation that particular groups of students are more prone to plagiarise. From the Public Health team’s perspective all students are given the same opportunities to improve their skills and knowledge. We move from dealing with general issues to developing those students who may have more specific needs. In a similar context McGowan (2005) introduces the notion of “academic apprenticeship” for developing

students' skills. From our own perspective we interpret this as being lecturers actively engaging students and developing a context specific sense of the acceptable practices in UK academia. A standard response highlighted by McGowan suggests that lecturers are likely to refer students to secondary language or study skills support for further help and development. This raises a question of lecturers' support of students; how involved should lecturers be in the process of developing students' skills? Clearly there is a danger of overloading lecturers' time, but is there a middle ground that can be reached allowing students to develop and lecturers to provide adequate guidance? Covic and Jones (2008) present a similar idea: providing students with detailed feedback and formative submission opportunities. Students were provided with the opportunity to resubmit their essays if they failed at the first attempt. A potential solution suggests itself in the form of providing front loaded support for students using formative assessment opportunities or skill development sessions. Or at the very least allowing students to experiment and develop academic skills with some form of tutor guidance and support. From these examples the next consideration is how could a system be used to help students, and remove some of the pressure from lecturers?

Dahl (2007) presented students with the opportunity to examine their own similarity reports generated by the Turnitin® system. The author seeks to suggest that a "one-dimensional" methodology based on pure enforcement does not help the students understand plagiarism any better. Carroll (2005) also supports the notion that pure detection alone will probably overload any administrative system. Brick (2007) initially used Turnitin® to examine students' assignments in a detection only fashion; the student group had no opportunities for formative resubmission. The single submission methodology led to a significant increase in the number of students being subject to some form of disciplinary action. Due to the number of students involved it was decided that the development of a formative method of submission was more desirable.

A common misconception amongst our staff is that Turnitin® can become the decisive decision maker for identifying cases of plagiarism. The misconception extends to the extent that staff see the "Similarity index" value generated by Turnitin® as a key indicator of wrongdoing on a students' part. However, this is not a view supported by Clarke and Lancaster (2007) (when describing an approach by Culwin and Lancaster) suggest that systems such as Turnitin® should be used as places for collating information for lecturers to review material. Detecting plagiarism clearly must involve a human element, as plagiarism may involve more than just text, it can involve ideas as well. Weyland (2007) suggests that taking someone else's "proposition" may not be as simple as taking someone else's words. There is a burden of proof to be met when initiating action against a student in a case of

plagiarism. The available evidence should show that one individual has copied a “proposition” in some form. Therefore it is reasonable to suggest that subject experts’ knowledge is required to examine students’ work. Before the introduction of Turnitin® the process of electronically detecting plagiarism could involve the use of internet search engines, such as Google, to detect potentially plagiarised work. In particular circumstances this method is effective, but not all students tend to copy materials verbatim. Where students do not copy text word-for-word finding matching text with Google is very difficult.

In summary it seems that the community is moving very much in the direction of plagiarism education as opposed to pure detection. Brick’s (2007) situation is one the Public Health team would clearly seek to avoid, not least because it fails to square with our curriculum development (CRe8), but because of the overloading of administration. It would appear that providing students with some form of pre-emptive education and then re-education after an initial assessment would be more desirable. Taking Clarke and Lancaster’s (2007) suggestion about the need for a human element it is important to stress that we should not seek to remove lecturers and other experts from the evidencing and decision making process. Ellery’s (2008) comments deserve due regard as a final thought: rules must at some point come into play regarding plagiarism, but that within the first year it is far too early for such overbearing measures to be employed.

### **Exploring the use of Turnitin® within the Public Health program and developing methods to manage plagiarism**

A key issue for our students is the development of what is considered to be rigorous and good academic practice. In previous years students had been provided with lectures and workshops detailing the nature of plagiarism dealing with topics such as how could plagiarism be avoided; what are the consequences of plagiarism; why plagiarism is unacceptable formed the basis of discussion. These discussions sought to avoid the need to undertake time-expensive procedures for dealing with students who plagiarised materials.

The team decided that the practice of allowing students to resubmit work would be a sensible first step towards understanding the types of plagiarism problems our students exhibit in their assessments, thereby avoiding the problems identified by Brick (2007). The methodology is quite simple: students are allowed to resubmit work into the Turnitin® system, and the reports which are available class-wide for staff are available on an individual basis for students. In this sense we are trying to develop the notions of personal responsibility and individual self-critical analysis of academic practice within the cohort. Typically at the inception of a course students are provided with information and details of the nature and consequences of



plagiarism. Demonstrating Turnitin® added a very different dimension to this practice. Instead of providing what is, to a student's mindset, a very abstract set of rules and procedures the Turnitin® system was used to bring these guidelines to life. We utilised this approach after examining the work of Badge (2007) at the University of Leicester.

Two typical examples of poor practice that lecturers frequently encounter are poor secondary referencing practice, poor paraphrasing and copying chunks of text from other sources. To understand the nature of the problem it is beneficial to examine a pair of simple, yet demonstrative, examples.

Figure 1 provides an excerpt from an originality report. Interpreting the meaning of the coloured sections is very simple. In this case a student has copied a piece of material from a journal (Nursing Standard) the details of which are visible on the top right hand corner of the screen shot. The left hand pane shows the student's assignment, whilst the right shows the original source. Within the left hand pane, the emboldened text is a direct match to the original content.

The screenshot displays a Turnitin originality report interface. On the left, a pane shows the student's assignment text. A section of text is highlighted in green and bolded, indicating a direct match. This text reads: "diabetes. Type 1 diabetes is a common cause of chronic disease in young people and accounts for approximately 10 per cent of diabetes worldwide (Zimmet et al 2001). Its results from autoimmune beta cell destruction causing insulin deficiency and must be treated with insulin injections to maintain life. Life expectancy is reduced with acute complications, such as diabetic ketoacidosis which is the biggest cause of death under the age of 30 years (Laing et al 1999). Excess mortality due to cardiovascular and cerebrovascular disease compared with the general population has been reported in people with type 1 diabetes of all ages (Laing et al 2003)." Below this, another section of text is visible, discussing Type 2 diabetes. On the right, a pane shows the original source text, which is identical to the highlighted text in the student's assignment. At the top right, a match box indicates a "5% match (publications)" from a source: "Wallymahmed, Maureen. 'Insulin therapy in the management of type 1 and type 2 diabetes.(learning zone: CONTINUING PROFESSION', Nursing Standard, Oct 18 2006 Issue". An arrow points from the match box to the original source text.

Figure 1 – an example of verbatim copying

skilful interviewer can follow up ideas, probe responses and investigate motives and feelings, which the questionnaire can never do. The way in which a response is made (the tone of the voice, facial expression, hesitation, etc.), can provide information that a written response would conceal. Weaknesses Interviews are time consuming, interviewing

a relatively small number of people. It is a highly subjective technique and therefore there is always the danger of bias. Moser and Kalton(1971) describe the survey interview as a conversation between interviewer and respondent with the purpose of eliciting certain information from the respondent.

Cohen (1976) states interviewing is an activity requiring careful preparation, much patience and considerable practice if the eventual reward is to be worth while.

Questions that were posed in the face-to-face interviews

9 1% match (publications)  
Acumen PI- Title: The qualities of the interviewer, not his sex, race and personal history, were the important\* - Discuss., Name: mamani, Date: 2003-01-17

next match: [ ] [ ]

deeper research. But there are many disadvantages when we use the method of interview in social research. Interviews are time-consuming, and so in a 100-hour project you will be able to interview only

a relatively small number of people. It is a highly subjective technique and therefore there is always the danger of bias.[2][2] Moser and Kalton (1971: 271) describe the survey interview as `a conversation between interviewer and respondent with purpose of eliciting certain information from respondent`.

This, they continue, might appear a straightforward matter, but the attainment of successful interview is much more complex than this statement might suggest.[3][3] The importance of interviewers' selection As interview happened between two persons, the personality of the interviewers might highly affect the quality of interview. That is also what we should discuss in this essay. Interaction now is not only structured by the questions, but by personal feelings.[4][4] Basically, everybody has his/her personality, temper, emotion and different ways of dealing with the same thing. Although we can through

Figure 2 – another example of verbatim copying. Note this time the student has altered the original references and that several other pieces of text within the left hand pane have been highlighted.

In both examples the Turnitin® system has highlighted the relevant sections of material. This is useful in two ways: demonstrating to students what kinds of poor practice can be highlighted by the Turnitin® system when tutors examine assignments; and the kinds of practice which students could identify within their own work. Such practices need to be identified by tutors and shared in some fashion with the group. We instituted a process that examined the various elements of detection, good academic practice and helping students to understand plagiarism together. The diagram below shows some the different tensions we had to resolve - these are not only student oriented, there are several staff based sections.

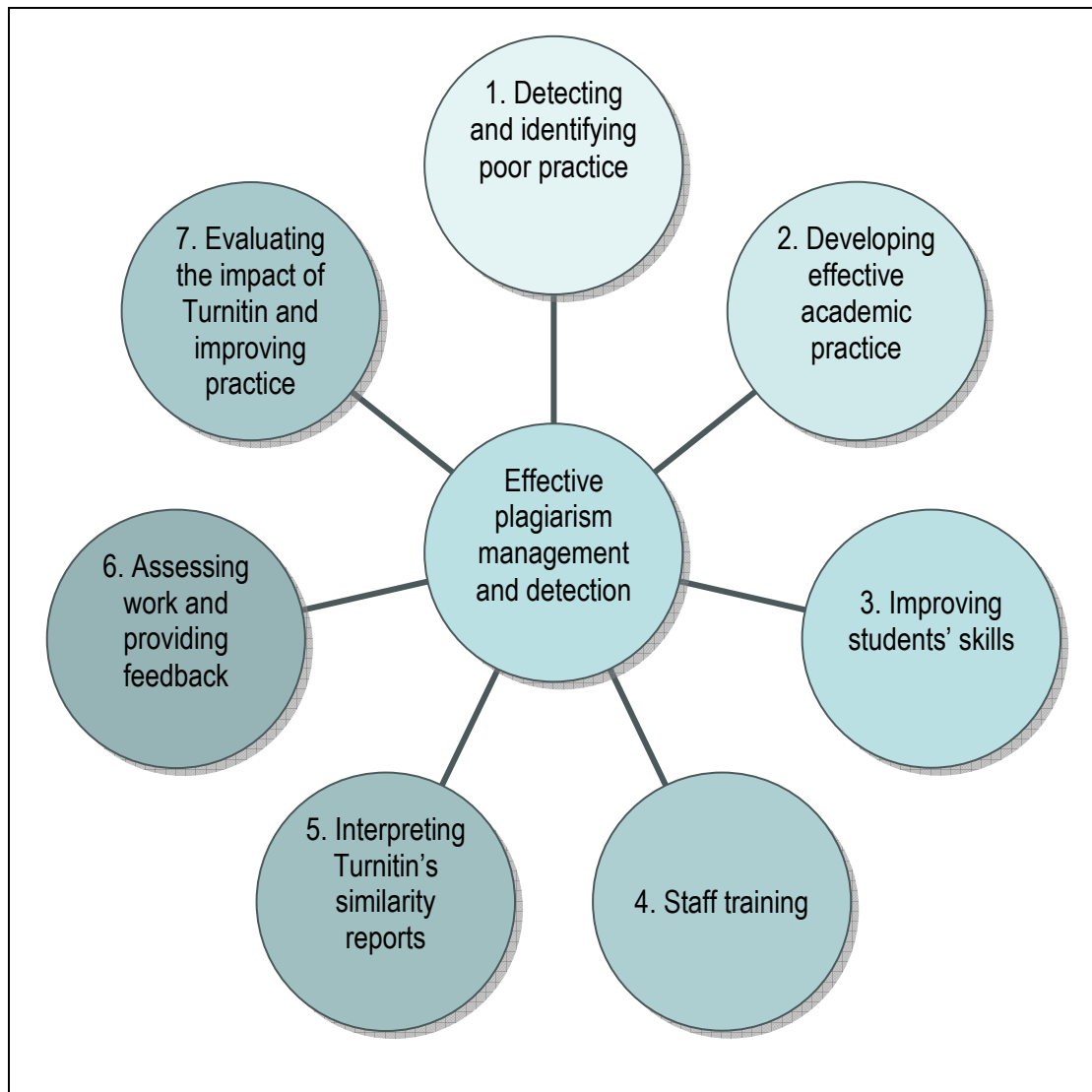


Figure 3 – a list of the various tensions we discovered whilst working with Turnitin

A summary of the issues we identified (Figure 3)

#### 1. Detecting and identifying poor practice

The course tutors provided students with a standard in-house developed presentation which detailed the kinds of poor practice Turnitin would detect; what the consequences were for those caught; and how the students could get access to the system to make submissions. The second stage of this approach was a discussion predicated on the contents of the presentation. Students were encouraged to discuss, participate and challenge the ideas demonstrated during the presentation. In addition we asked students to identify areas in their own practice which were similar to those discussed; had they used secondary referencing in an assignment before, did they copy text from a webpage and forget to cite it and how did they know a source was valid. Essentially we wanted the students to better understand the nature of plagiarism and

how they could avoid it, but also to reflect on their own practice before starting to work with the Turnitin® system. For reference the presentation includes:

- ◆ the method to submit an assignment
  - ◆ using the BREO Turnitin® assignment areas
  - ◆ marking the references and bibliography sections appropriately
- ◆ the feedback provided by the Turnitin® system;
- ◆ a reminder that lecturers can see the same screen as the students, and will therefore be able to spot any untoward practice;
- ◆ the fact that Turnitin® checks a large number of different sources;
- ◆ practices considered unacceptable and acceptable;
- ◆ correct use of quotations from other sources;
- ◆ penalties if students are caught;
- ◆ advice and guidance for improving skills.

The presentation was built in conjunction with the another department within the University's Business School, and was based on the ideas presented at [plagiarism.org](http://www.plagiarism.org) (<http://www.plagiarism.org>) which presents some rather interesting examples which staff and students alike can relate to. For example: "The Potluck Paper", "The writer tries to disguise plagiarism by copying from several different sources, tweaking the sentences to make them fit together while retaining most of the original phrasing." Such examples may seem obvious, but we feel important factor is getting the message across to students that such practices can, and will be picked up by the Turnitin® system.

## 2. Developing academic practice

To develop students understanding of plagiarism we instituted a series of informal lecturer based interventions (Pike 2007). The language and notions of a different type of intervention can be found in a study discussed earlier (Ellery 2008); in this case they take the form of full tutorial programmes. From a practical standpoint this provided us with an opportunity to discuss progress and problems with students after the initial discussions. The interventions took two fairly standard forms: firstly, an in class discussion regarding general principles of plagiarism; and where required a more detailed individual discussion with students. The interventions in this case refer to discussions and demonstrations made to the whole cohort; they are not designed to be fixed in time rather the lecturer can choose to make suggestions and promote a model of continuous feedback. Figure 3 presents the process diagrammatically.

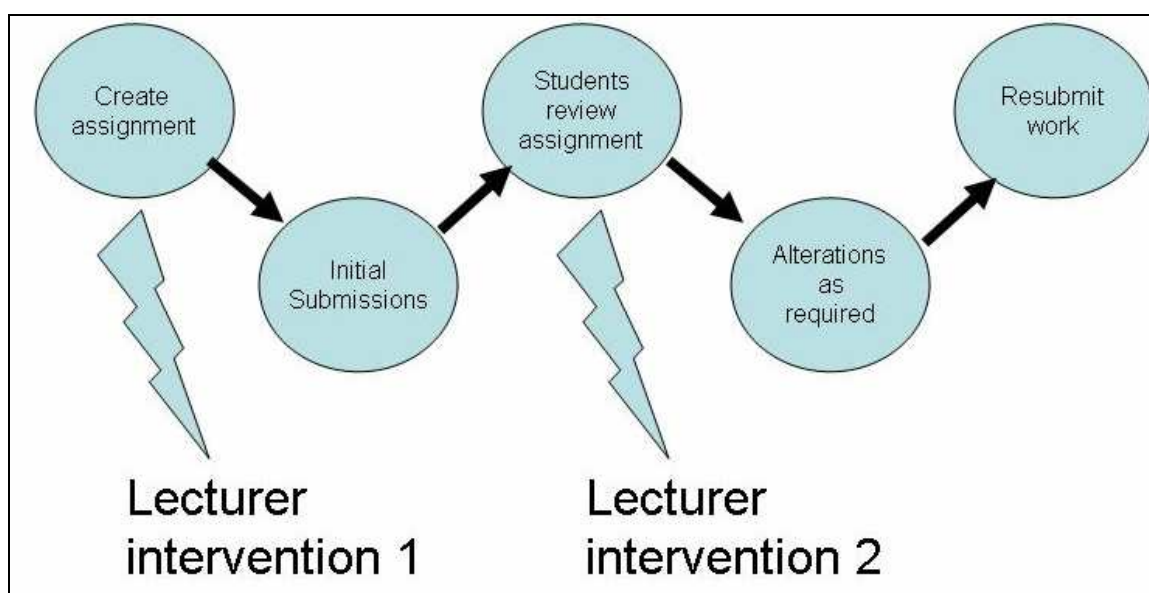


Figure 3 – a diagrammatic representation which helps students and lecturers engage with the process of plagiarism detection.

General examples of the types of points highlighted to students during the interventions included:

“I’ve noticed a number of you are using secondary referencing.....”

“A number of students have been copying work from xyz.com.....”

“Make sure your references are clearly marked.....”

“Make sure when you use quotation marks that the exact text is given.....”

“Some of you seem to be using sections of the case study within your assignment; there is no need to do this as these parts will be removed from your overall word-count.....”

“I’ve noticed that a number of you are using xyz.com’s website. This is not a reliable source....”

“A few of you seem to have problems using quotation marks - make sure you check...”

“I noted an instance where a student had copied information from a free essay site.....”

“Changing a few words in a paragraph doesn’t constitute “writing it in your own words....”

### 3. Improving students’ skills

Within the University (and like many other universities) students have access to a central study support services function. Initially the lecturing team tried to resolve students’ skill deficiencies locally; where this was not possible students were referred to our main study support services.

### 4. Staff training

As we began to understand the typical issues that staff were encountering with submissions from the new groups the information was piped into informal staff training. Our aim was to share examples of good and bad practice (from students) and methods which could be used to help students.

### 5. Interpreting Turnitin®’s similarity reports

Interpretation has proven to be the most difficult step in the whole of the implementation process. To put this into context, imagine asking ten academic staff for a definition of plagiarism; such definitions are liable to share common features: failure to reference an idea, copying without citation or providing no citation for an idea which belongs to another author. However a system such as Turnitin®, the ability to detect copying and poor paraphrasing is vastly improved. The question we then encountered was the notion of what constitutes

plagiarism: a sentence, a paragraph, a poorly paraphrased paragraph or the incorrect use of quotes? Or as Badge (2007; p438) explains “Thresholds are difficult to define absolutely- when does stupidity become cheating?” Has a case of plagiarism been identified or one of academic incompetence? Intention is perhaps the axiom of this point, as the evidence would suggest the mere fact that a student has acted improperly is enough to pursue a claim of plagiarism. Sutherland-Smith (2005) found during a survey of lecturers’ attitudes to plagiarism that some staff consider any act of plagiarism as intentional; students are repeatedly made aware of University regulations and should follow them. It is quite clear for anyone that simply copying material is wrong. However, such a view fails to link in with the University’s educational paradigms. For a first offence, ideally each student should be given the opportunity to learn from and reflect upon the experience.

Many staff had the initial perception that a high similarity index is directly attributable to plagiarism, and subsequently referred to the reported number as a ‘plagiarism score’. For a range of reasons this is not the right approach. Firstly, the assignment type can affect the score from a student’s assignment. Secondly, students can make mistakes when submitting assignments; typical examples of this include: submission of unnecessary front sheets (in some cases the assignment tasks); and a failure to mark the references section of their document appropriately. We have tried to summarise some very general observations from cross-university activities in figure 4.

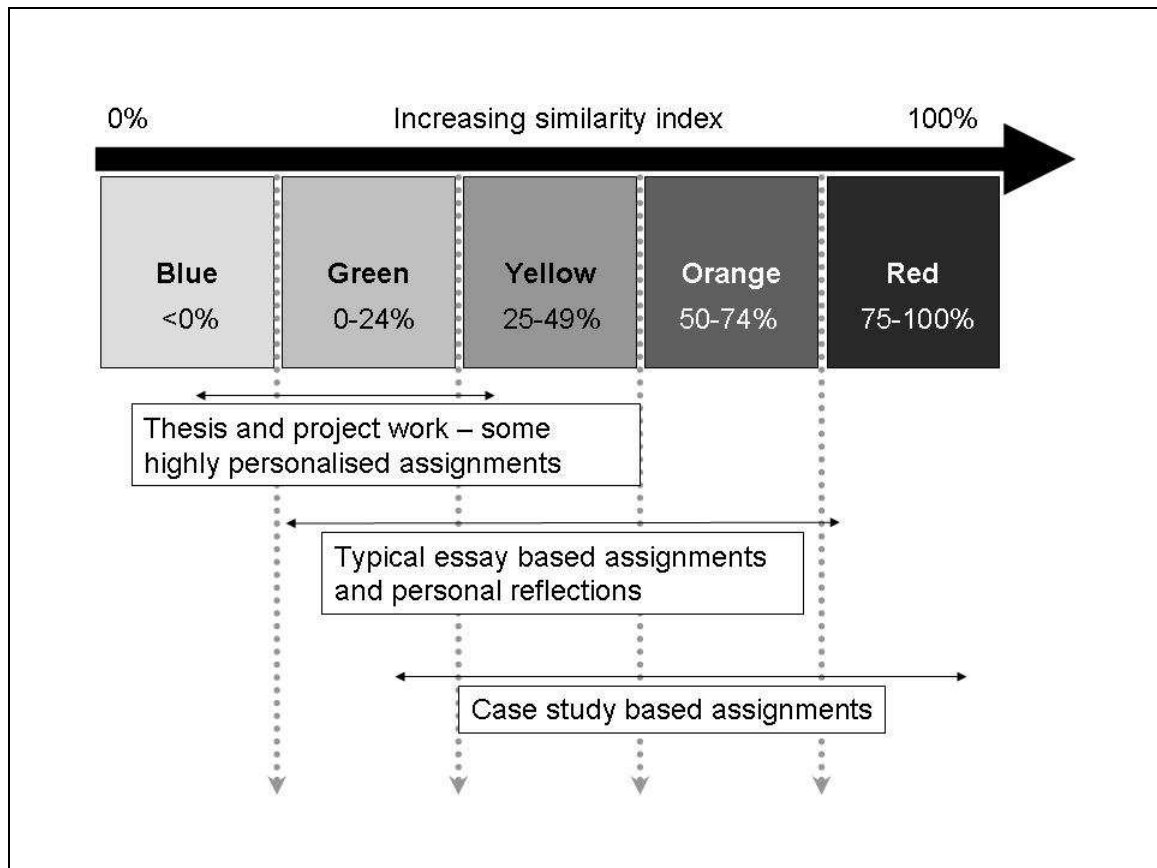


Figure 4 – a very generalised view of how similarity indexes vary by assignment types.

Figure 4 is in no way meant to provide a precise definition it is merely a guide. We found case study based assignments appear to have a tendency to present much higher similarity indexes than a thesis would; one of the main reasons for this is weaker assignments tend to regurgitate chunks of the case studies to bolster the overall word count. When comparing assignments within a class (as Turnitin® does) a false positive results which increases the similarity index.

We found that similar to other Dhal's (2007) study students had some difficulties interpreting the similarity reports. To this end we strongly urged students to submit work, even if it was in very early draft form, into the digital drop-boxes at the first opportunity before the due date. Students who submitted work on, or just before, the deadline date tended to panic at the sight of similarity index and the reports that Turnitin® generated. Many of the problems could be linked to accidental practice: not highlighting the references section properly, or including an assignment front-sheet (which tends to inflate the similarity index).



## 6. Assessing work and providing feedback

Some of the lecturing team preferred to mark paper copies of students' work. There is a feature within Turnitin® which allows staff to download copies of all students' submissions in the form of a zip file. In the main work students' assessments are marked in using traditional paper methods. However, further information about developments of our use of the GradeMark system within Turnitin® is available from the future work section of this paper.

## 7. Evaluating the impact of Turnitin® and improving practice

How can we improve our practice and move forward is often a question posed at the end of a process. Feedback and reflection are the staple methodology of many student assignments, so it is perhaps appropriate that the same methodology applies with our use of Turnitin®. We have started to gather evidence from existing students' assignments. More detailed analysis of the types of poor practice (or in some cases plagiarism) has provided information we can use to inform next year's cohort. Interestingly the same methodology could be applied equally to any subject. The intelligence gathered is then used in the first intervention; so instead of a general discussion about plagiarism with general examples (which may not be Specific to Public Health) students are able to see real and contextualised examples of poor practice. Figure 5 expresses the above in diagrammatic form.

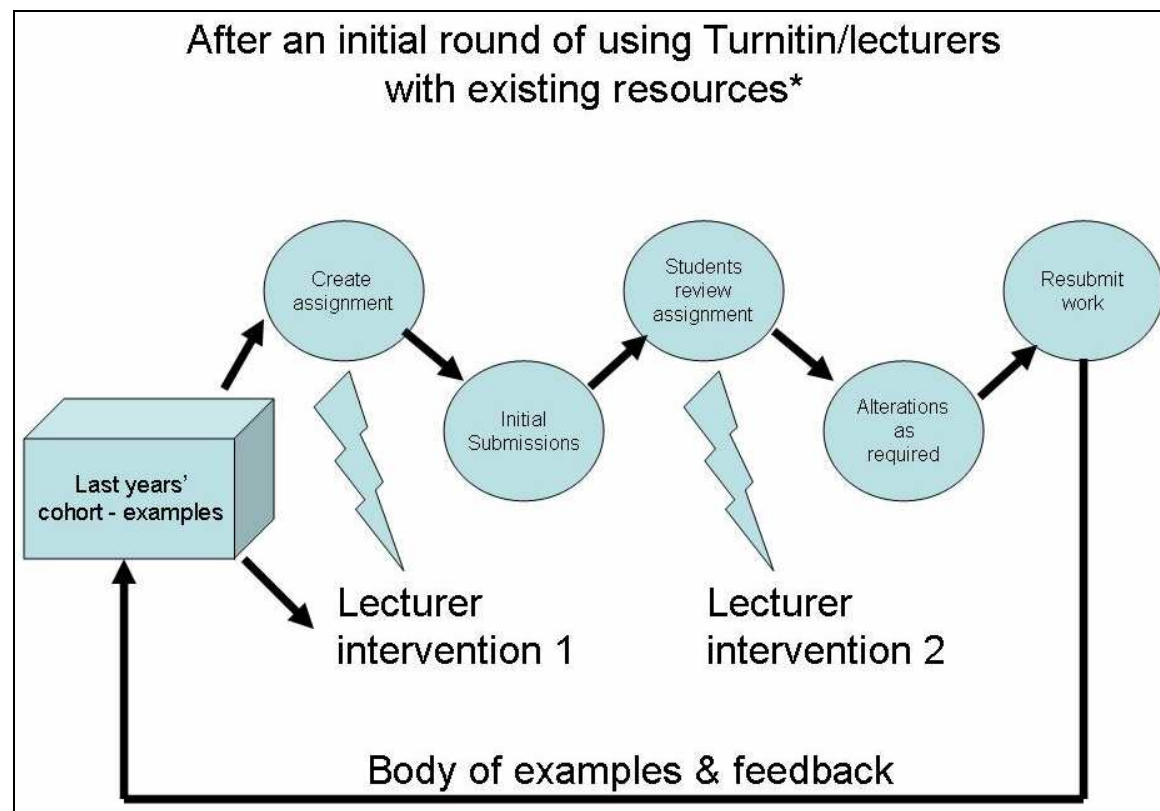


Figure 5 – once lecturers have a bank of resources these can be used to create specific examples of good and bad practice to inform incoming cohorts. (Pike (2007))

## **Students' views of the Turnitin® system**

It is useful to draw some comparisons between students' experiences and that of the wider sector. Savage (2006) gives a very comprehensive overview of the kinds of issues and questions raised by students. We found several of our students posed similar questions, and had similar issues. During demonstrations we collected some information regarding students' reactions to the Turnitin® system. Existing students (those already part of a degree programme) objected strongly to having Turnitin® 'foisted' upon them. The students said they found it unfair that the system was introduced later on in their course, whereas it should have been the norm much earlier. Concerns were expressed as to the nature of the need for checking, and it was perceived as a lack of trust on the lecturers' part. Reference was made by the students to other year groups they associated with; particularly the idea that other groups of students did not have to submit their work into the Turnitin® system. The Public Health students found this inequitable. However, we found that our students' attitudes to the system changed very quickly once we explained they would be provided with formative access to the system. In many cases the use of the system prompted discussions in the class and prompted students to seek advice from lecturers regarding good academic practice. One of the lecturing team described Turnitin® as "shocking the students into reflecting on their referencing and academic writing practices". An interesting piece of feedback that may be of interest to those members of the Higher Education community who work with students with disabilities such as dyslexia; one of our students used the Turnitin® system to confirm that she had paraphrased properly. In this particular case the student had trouble rearranging and using words, and Turnitin® provided a simple method to ensure her practice was suitable.

## **Summary and conclusions**

Overall the staff feel that Turnitin® has begun the process of promoting effective academic practice. When using the system to examine assignments staff are provided with a degree of reassurance that an assignment has been checked and there are no obvious signs of plagiarism. In essence we have saved lecturers from performing what are fundamental checks of students' assignments. In terms of Clarke and Lancaster (2007) we have provided the initial collation and checking for lecturing staff. Really our objective has been to demonstrate to students that the more simple forms plagiarism can be easily detected and dealt with, but this alone seems a harsh response to the problem. We should not discount the idea of allowing students to experiment and to develop their skills. After using Turnitin® in such a formative fashion, what can be learnt, and how can we feedback what we have learnt to improve the next cohort's experience?

Perhaps the answer lies in the way we deal with the information from our first trial. If we view plagiarism management in two ways we can draw some distinctions, our suggestion is twofold: tactical – making changes to on the ground practice; strategic – feeding back general issues which lecturers have discovered back to staff dealing with students on a daily basis. Figure 6 provides the above in diagrammatic form.

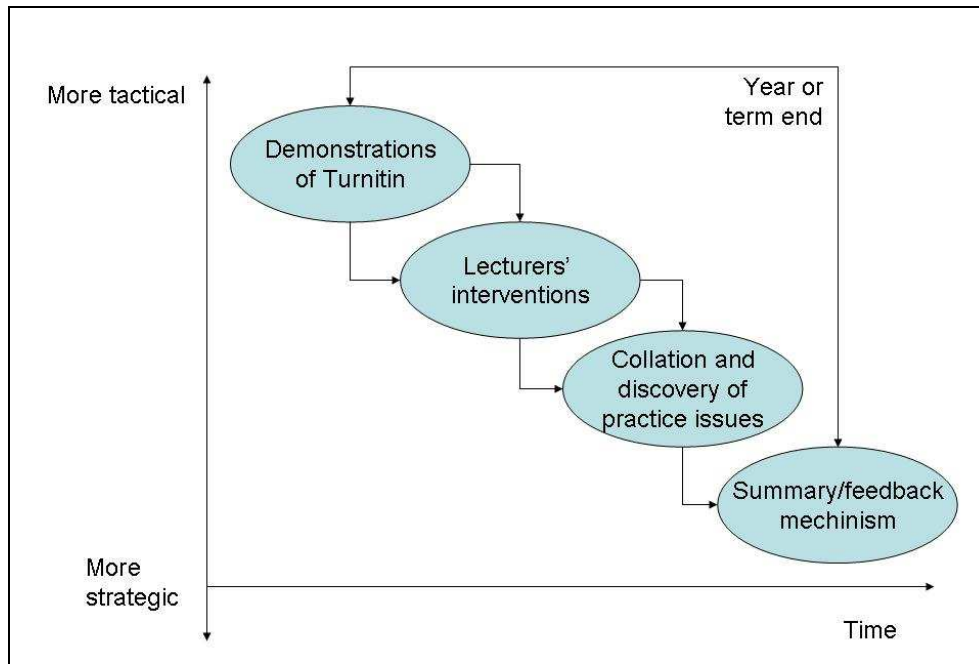


Figure 6 – developing plagiarism management

Turnitin® system. On one hand, staff feel that providing formative access precludes students from being assessed properly; academic writing is a skill which needs to be developed, and skills need to be assessed. Is it correct to provide a safety net (Covic and Jones (2008)) for students to keep making mistakes, what will happen when our students move on from our courses and into industry? There are two forms of response to this: on one hand we would assume, or rather hope that students would move away from the need to use the Turnitin® system as a safety net; on the other hand we need to address the process of assessment, we set assignments in a summative fashion to test students' skills. To address the first part of the argument this would require monitoring and further study of the activity of individual students. However, it is probably safe to assume that most of the students would self-improve their skills enough to move away from the need to constantly check their assignments. From a summative assessment perspective this situation is not ideal. Should there be a point where students no longer have the resubmission option available to them? We think that the answer is yes, but not for the first year of operation (for a project of this type). It is important to

collect and collate staff and students' experiences from the first year's operation; the types of poor academic practice identified can then be highlighted during the initial weeks of activity.

In terms of future development, could the Turnitin® system provide a viable option to provide some form of diagnostic testing? Realistically there are good grounds for promoting diagnostic testing to ensure students get the very best from our educational system: students could produce some form of short formative essay to assess their skills; lecturers could use the results from such an assessment to direct students to further support within the university. Sivasubramaniam (2006) suggests that short workshops may be a good method of developing students understanding. However, similar to the sole use of Turnitin® the sole use of workshops is probably not enough. Interestingly, overseas students in Sivasubramaniam's study could identify the scenarios where plagiarism was occurring, but their ability to apply this knowledge to their own work did not appear to be improved. Perhaps in terms of Kolb (1984) it is better for students to experience the guidelines we operate within by actualising their learning. Further work needs to be completed within our own area to see if workshops followed by experimentation provide the best value solution for our students. It is quite clear from Dahl's (2007) work that students have trouble interpreting reports; speaking purely in terms of scale, our student cohort was relatively small (~40 students). The method of personalisation we used would probably not scale particularly well for much more larger groups.

Overall the fundamental message is one of student-lecturer interaction. We feel that this has the deepest value for developing good academic practice. Lecturers should seek to lead students by example. For those staff who have experimented and examined the detection facilities within Turnitin® it is clear that it can provide a solution to some of the issues of plagiarism. However, a solution that only offers detection is at odds with several of our own forward-moving principles (CRe8) and that of sector wide developments.

### **Using online marking**

The GradeMark feature of Turnitin® presents several interesting opportunities for developing online feedback and marking. If we think in terms of using Turnitin® formatively, or in a diagnostic fashion GradeMark could provide a method to electronically record the feedback provided for a student. Key affordances include: a permanent online record of a student's assignment; the ability to share the marking information with an external examiner (or other tutors); the direct link to the plagiarism detection system; and the possibility of a second marker being able review comments on a student's assignment.

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