Issues of quality assurance in the management of plagiarism in blended learning environments

Conference or Workshop Item

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Abstract

Increasing access to and availability of electronic resources presents students with a rich library of opportunities for independent study. But students also find themselves in the confusing territory of how they should best use these resources within their assessment activities. Likewise, teaching institutions are faced with the problems of plagiarism and collusion, and the challenges of educating, deterring, detecting, and dealing with breaches of policy in a fair and consistent way across all disciplines.

This paper examines issues of quality assurance in the management of plagiarism by discussing the following questions:

- How can effective automated plagiarism detection services be introduced and managed across the institution?
- What teaching and assessment practices can be adopted to deter plagiarism?
- What part should collusion and plagiarism detection tools play in educating and deterring students?
- What are appropriate penalties for plagiarism and collusion and how can these be applied consistently across disciplines?

Drawing together three distinct strands of research, in both distance and campus based institutions, the authors discuss how practice and policy have evolved in recent years in an attempt to reduce the incidence of plagiarism and collusion. The paper will illustrate this evolution by reporting on recent developments in assessment strategy, detection tools, and policy within two UK HE Institutions: The UK Open University and Manchester Metropolitan University.

Keywords: quality assurance, collusion, plagiarism, assessment, policy

Introduction

A number of recent papers indicate that there is a rising trend in the incidence of detected plagiarism (Park, 2003; Marsden et al., 2005; and Jones, 2006), but this literature also highlights that the phenomenon is not new. Bower's (1964) study (cited in Marsden et al., 2005) reports 82% of students admitting to some form of cheating on written assignments. Neither is this pattern unique to the English speaking world. Forester (2006) reported similar

behaviour amongst postgraduate students in French Business Schools and Park (2003) cites findings from Finland.

What has changed is the environment in which institutions of higher and further education (HEIs) find themselves. Since 1997 the Quality Assurance Agency for Higher Education of the UK (QAA) has been charged with the mission to:

"... safeguard the public interest in sound standards of higher education qualifications and to inform and encourage continuous improvement in the management of the quality of higher education." (QAA, 2006a)

This the Agency achieves through a combination of national qualification frameworks, subject benchmarks, codes of practice, and institutional reviews, which ensure academic standards across the UK. The key beneficiaries of these standards are the consumers of the services (students) and the consumers of the products (employers) of the higher education sector.

The spectre of cheating raises two concerns for students. The first is that some students will be awarded qualifications that they have not earned and the second is that honest students are being penalised for failing to produce the same quality of work as those who cheat. Employers rely on institutions to ensure that the graduates they employ have the appropriate levels of knowledge and skills suggested by the award the student has received.

The UK higher education sector's income for the 2004/5 academic year was approximately £18,000 million and universities employed some 109,625 full-time and 51,030 part-time staff. During this same period 673,775 undergraduate and 175,165 postgraduate students were registered for study (HESA, 2006). Of these 115,085 undergraduates and 45,440 postgraduates were designated as international students (UKCOSA, 2006). If consumers were to lose confidence in the higher education system, the consequences would be disastrous.

Unfortunately approaches towards cheating, and plagiarism in particular, have been inconsistent. Some advocates propose addressing the issue through the education of students, some through the redesign of assessments, with yet others relying on technological solutions to capture miscreants. It is only recently that a few strong voices have taken a broader 'quality assurance' perspective that advocates a holistic approach (Macdonald and Carroll, 2006; Park, 2004).

A QA perspective requires that higher education institutions address four areas of concern. The first is to create an institutional infrastructure that provides appropriate tools, processes, and policies. The second is to enact controls that manage the people and processes and reviews performance targets. The third is to develop competencies such that peoples' knowledge, skills, and experience are developed through appropriate training. The fourth is to nurture an institutional culture of personnel integrity, confidence, and motivation in relation to quality assurance.

To help to address the first of these, many institutions have signed up to the Joint Information Systems Committee (JISC) Plagiarism Advisory Service (PAS), which consists largely of the turnitinUK electronic plagiarism detection software from iParadigms, but also comes with ancillary services such as useful guidance and advice that facilitate a more holistic approach to tackling the plagiarism problem. This service has not been without its critics, for example Culwin (2004) and Purdy (2005), who have raised objections to the proprietary nature of the software, the technological limitations of the current detection algorithm, the legal ramifications concerning copyright, data protection and privacy, and its questionable ethical and moral stance. However its large document base and managed service currently make it the de facto standard amongst HEIs in the UK.

The experience we relate in this paper provides strong evidence in support of a holistic, QA approach; examining the role of the various players in order to highlight what each could bring to such a solution. The first case study draws on work undertaken at Manchester Metropolitan University (MMU) using the JISC-PAS, whilst the second draws on work at the Open University of the United Kingdom (UKOU).

Detection technology

Detecting collusion or plagiarism has been described in terms of a four-stage process requiring the 'collection' of source materials, a 'comparison' of the materials to detect similarities, 'confirmation' of detected similarities to exclude false-positives, and an 'investigation' of the remaining similarities to determine if misconduct has occurred (Culwin and Lancaster, 2001).

A practical system involves more stages as illustrated in Figure 1, which shows the flow diagram for the collusion and plagiarism detection service employed at UKOU. The service has been designed as a batch process that operates unattended. The starting point is the electronic submission of assignments by students using a proprietary Web-based service. Given the time span over which students submit their work, all assignments for a course are aggregated into a single archive prior to processing, but are immediately forwarded to the students own 'tutor' for grading.

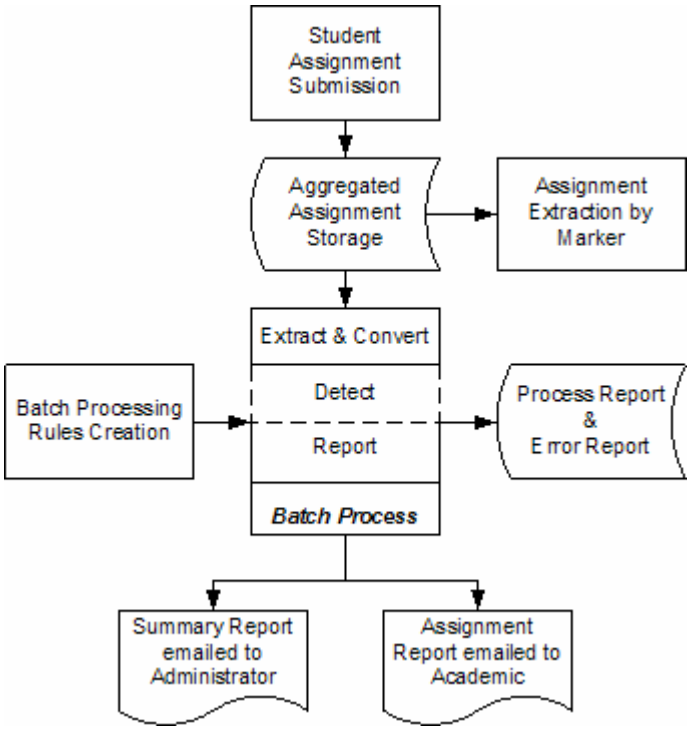

Figure 1 Flow diagram for collusion and plagiarism detection at UKOU

'Extract and Convert' refers to the stage at which the text is extracted from word processor files (e.g Microsoft Word) or converted from other file formats (e.g Open Office). Given the inconsistent way in which students package documents for electronic submission, this stage is crucial to ensure that all possible text is collected. Extracting the text from assignments with an average file size of 93 kilobytes takes about half a second, whereas 20 kilobyte files can be processed at the rate of 6 per second. The service is currently able to extract the text from 99.5% of the files submitted. The few failures that remain are usually the result of the

student password protecting the document, which prohibits the extract of the text. Fortunately for the students concerned the document can still be read and graded.

Similarity detection is undertaken by CopyCatch, but any suitable detection engine could be used and in fact trials have been conducted using WinCopyFind. To detect collusion each submitted assignment is compared to every other assignment, whilst to detect plagiarism each assignment is compared against a set of 'reference documents' provided by the responsible academic. The processing load is determined by the size of common vocabulary and number of file pairs to be checked for similarity; 50 assignments create 1225 file-pairs, whilst 100 assignments produce 4950 file-pairs. Recent tests indicate that a batch of 1938 assignments (1,876,953 file-pairs) can be processed for similarity in around 10 minutes, or approximately 3000 file comparisons per second.

In order to manage the scale of the 'confirmation' and 'investigation' stages, the detection engine focuses on those file-pairs whose similarity falls in the tail of the distribution of all file-pairs. The statistics and a colour-coded mark-up of the assignment text is used to create a report that is emailed directly to the responsible academic.

The service provides an audit trail of all the courses, assignments, and reports that are processed, together with error logs at each stage of extraction and conversion. Further details of the service can be found in (Heap and Woolls, 2006).

Why the current emphasis on ICTs is failing

Manchester Metropolitan University

An examination of the Manchester Metropolitan University Business School (MMUBS) case study (Martin et al., 2006) reveals a different strategy, but one that was also developed and driven forward by a small band of technology enthusiasts. In this instance a 3D framework, following in the footsteps of Park (2004) and Carroll (2004), was utilised to provide a structure that emphasised *deterring, detecting* and *dealing appropriately* with cut-and-paste plagiarism.

At MMUBS the reasons for attacking the specific problem of cut-and-paste plagiarism with the help of technology tools were three-fold. Firstly, in terms of academic misconduct, direct copying of another's work without acknowledgement was seen as more serious than rephrasing without citation, or mis-referencing, an original article. Second, from a pedagogical standpoint, copying using cut-and-paste was seen as much less rewarding learning experience for students than the rephrasing and critique of existing sources with or without correct referencing. Third, the electronic detection tools available to augment the tutor's expert judgement regarding plagiarised materials were able to highlight instances of cut-and-paste, but not other types of plagiarism and as such structured this approach.

MMUBS case studies in both plagiarism prevention and blended learning (Stubbs et al 2006) stress the importance however of not relying technology to *determine* an institution's method but instead to *structure* their approach. For example a triangulated qualitative and quantitative study analysis showed that students found the JISC PAS effective in *deterring* and *detecting* plagiarism, but that this perception could be significantly enhanced or diminished depending on how the service was presented as part of a more holistic approach to plagiarism. A small number of students were also committed to exposing the end-to-end limitations of the service, particularly when there was a requirement to submit both paper and electronic versions of assessment material. Even electronic-only submissions could be 'tweaked' in such a way so to avoid plagiarism detection by converting tables to images or other types of embedded object. There was a clear warning that relying solely on the JISC PAS as a kind of universal panacea was to be avoided and rather it be used as a useful tool,

with known limitations, as part of a broader set of plagiarism strategies. Certainly from a purely technological standpoint until a digital watermarking feature or similar is introduced to ensure authenticity between paper and electronic assignment submissions, and the comparison algorithm is enhanced to cater for images and other similar document objects, the service should be used not as a primary means of detection but rather to augment a tutor's expert judgement.

UK Open University

UKOU currently processes some 750,000 assessment items each year, comprising a mixture of essays, reports, and projects. Until recently the detection of collusion and plagiarism relied exclusively on the skill and knowledge of individual markers, but amid the growing concerns of 'misconduct', the Exams Office initiated an investigation into the development of an automated detection service that can be operated consistently across the institution. Early discussions to use JISC-PAS indicated that the service could not cope with the number of assessment items envisaged and a proprietary solution would be necessary.

Experience using the detection software is illustrated by its role in a high-population second level course: *T209 Information and Communication Technologies: people and interactions*. The typical student profile for this course is male (about 80%), aged 30 – 39 (about 45%), with some previous experience studying with the UKOU (about 88%). The course consists of five taught modules each assessed by a tutor-marked assignment (TMA), and a final project module that requires students to write a report for a particular audience and purpose covering certain aspects of a specified technology that has not been taught in the course. To gain the background knowledge needed, students are provided with one or two 'priming' papers which they must augment by carrying out independent research. This is done mainly through Internet searching, though a very few students will also use books and journals. The report produced is submitted as the end-of-course assessment (ECA), which is marked by a script marker who is not the student's own tutor.

Since 2003, every ECA has been subjected to three separate checks for plagiarism. One check is made by the student's own tutor who is asked to give an opinion on whether the work is the student's own. This judgement is based on the TMAs the tutor has marked and on any other interaction between the student and tutor. Another check is made by the script marker who looks for changes of style, vocabulary, technical level and use of English, which may indicate copied sections. The script marker is also well-placed to recognise content from the popular sources (such as HowStuffWorks and Wikipedia) and technical papers that students are likely to use in their background research. Neither the tutor nor the script marker is asked to provide evidence of plagiarism, but only to flag their suspicions. These flagged scripts are passed to the course examination board whose task it is to determine whether a suspect script does, in fact, include unattributed text from secondary sources – either verbatim or lightly plagiarised. This is done using Google as a plagiarism detection service (Purdy, 2004).

The third check uses the CopyCatch detection engine, which tests for collusion amongst the student cohort or for matches against reference documents provided by a responsible academic. Any script exceeding a predetermined threshold of matched text is referred to the examination board for further checking. CopyCatch does not perform a Web search, so the sources that students are likely to use must first be identified and captured. Thus the effectiveness of the software is highly dependent on the ability of the responsible academic to identify likely third party sources.

Suspected plagiarism is flagged, therefore, either by software checking (CopyCatch) or by human checking (tutor and scriptmarker), with some scripts being identified by both checks. Table 1 provides statistics of ECA scripts that were flagged for suspected plagiarism over the

last three years and those subsequently referred for disciplinary action due to unattributed quoting or light paraphrasing from secondary sources. Some of this information is illustrated graphically in Figure 2 where the unbracketed figures indicate suspect scripts and the bracketed figures indicate actual detected plagiarism.

Table 1 Suspected and detected plagiarism in 2004 to 2006

	2004	**2005**	**2006**
Total number of ECA scripts submitted	995	797	608
Number of suspect scripts identified solely by software	16	43	18
Suspect scripts identified by software expressed as a percentage of total scripts submitted	1.6%	5.4%	3.0%
Number of suspect scripts identified solely by humans	81	39	62
Suspect scripts identified by software expressed as a percentage of total scripts submitted	8.1%	4.9%	10.2%
Number of suspect scripts identified jointly by software and humans	3	6	11
Suspect scripts identified jointly by software and humans expressed as a percentage of total scripts submitted	0.3%	0.7%	1.8%
Number of solely software identified suspects referred for disciplinary action	8	14	1
Solely software identified suspects referred for disciplinary action expressed as a percentage of those flagged by this route	50%	32.5%	5.5%
Number of solely human identified suspects referred for disciplinary action	17	9	20
Solely human identified suspects referred for disciplinary action expressed as a percentage of those flagged by this route	20.1%	23.1%	32.3%
Number of software/human jointly identified suspects referred for disciplinary action	2	6	7
Software/human jointly identified suspects referred for disciplinary action expressed as a percentage of those flagged by this route	66.7%	66.7%	63.6%
Percentage of marked ECA scripts requiring disciplinary action	2.7%	3.6%	4.6%

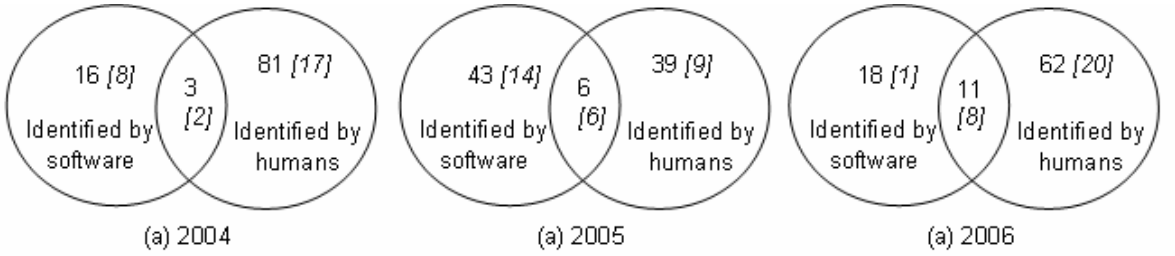

Figure 2 Suspected and detected plagiarism in 2004 to 2006

There are two important points to note from the figures in Table 1. The first is that plagiarism detection software is fallible (Purdy, 2004, p12). The CopyCatch check produced a high proportion of false positives that required human resources to eliminate. The second is that, though the suspect scripts identified by humans produced more false positives than the software detection method, they contributed substantially to the overall quality assurance by identifying plagiarised scripts that were not picked up using CopyCatch route. The two systems appear to complement each other, neither being fully effective by its self.

How might we succeed?

Our experience demonstrates clearly that technology does not provide a solution; it can be fooled fairly easily, it can only assess the similarity between the text that it is given, and it cannot distinguish between proper citations or plagiarism. Its demonstrable advantages are that it provides a consistent approach for an institution, can be scaled to cope with large cohorts, and can detect problems involving multiple markers (Lyon et.al., 2004).

Viewed as a quality assurance problem, the HE sector needs to assess the contribution of each player in the process and develop their competencies. The players we have considered include: the teacher (those who establish student behaviour), the student, the Exam Board (implementing policy and penalties), the Institution, and the QAA.

The Teacher's role

Manchester Metropolitan University

Methods at MMUBS that formed part of a holistic approach to tackling plagiarism included assessment redesign in line with recognized good practice (Carroll and Appleton, 2001; Eskins, 2004) that tested application rather than explanation and were staged so to help time foster good time management skills and break down a last-minute submission culture. Assessment briefs also clearly highlighted plagiarism sanctions that reinforced institutional tariffs, and ongoing education at *tutorial* and *lecture* level helped students recognize plagiarism and how to avoid it. This was reinforced by a written collective agreement of a shared definition of plagiarism in the manner of Swales and Feak (1994) that spelt out what constituted cut-and-paste plagiarism and stressed that small syntactical citation and referencing mistakes did not carry the same penalty as verbatim copying. In line with most other institutions all students were of course required to sign an individual acknowledgement that all the work they had submitted was their own and that all other work had been correctly referenced.

Tutors continually impressed upon students that a personal understanding of the work was required in order to gain at least a pass mark and that this understanding would be tested at a viva if necessary. Students submitted their work directly to the JISC PAS service and could therefore see that sophisticated tools were indeed being used to check their work. The students were shown examples of the plagiarism service in action and this had the unanticipated consequence of heightening anxieties of some students regarding unfair accusations of plagiarism, but at all times tutors stressed that they were in control of the process and no-one would be accused of plagiarism solely on the basis of the reports from the JISC service. It was seen as vital that plagiarism sanctions that were hidden away in a student handbook were made as visible as possible and this was best delivered by those closest to the students whilst at university.

This relationship of trust between tutor and student was a key element in the success of the case study. Regular and personal face-to-face communication from those who set assignments, assisted students in achieving the desired learning outcomes, and graded their work was seen as fundamental to ensuring that the correct message regarding plagiarism as an academic malpractice came across. This important social aspect ensured that the technology tools were seen in the correct perspective by both tutors and students alike and that much effort was made to avoid the discourse of conflict (Purdy, 2005) that characterizes much of the plagiarism debate. Instead we focused on reframing our dialogue with students as one of upholding academic integrity and quality and that this was of benefit not only to the institution, but also to the students in terms of the value of their degree and their employment opportunities thereafter.

Open University - T209 approach

The standard UKOU course model is one where a course and its assessment is designed, written, and managed by the course team. Primary contact between the institution and the student takes place through the tutor who supports the student, marks their TMAs and provides them with feedback.

Though the T209 course team feels that the nature of the ECA is one that is not effective at discouraging plagiarism, the design of the course and the role of the ECA (which tests a student's ability to research and present an unfamiliar topic in technology) means that fundamental changes in the assessment are not viable. The 2006 ECA included, for the first time, a question which required students to identify and comment on two of the web sites they used in building up their own knowledge. It was hoped that encouraging them to identify two of their sources in this way would discourage the use of unattributed quotations or close paraphrasing. The increase in the percentage of 2006 scripts being referred for disciplinary action (Table 1) indicates that this was not the case and that the change in assessment had no impact.

The first assignment in the forthcoming presentation (2007) will include a question requiring students to examine three sections of text that hypothetical authors have prepared on a specific aspect of technology using a supplied reference source. Students will be asked to make a judgement on whether each of the samples is an example of unacceptable paraphrasing. It is hoped that this approach will serve two purposes. The first is to promote students' active engagement with issues of academic integrity. The second is to prevent them from claiming ignorance of acceptable practice (as has been the case in the past) should they subsequently be referred for disciplinary action due to plagiarism in the form of light paraphrasing.

Given the experience of the T209 course team to date, when a new course is written to replace the existing one, very careful consideration will accompany the design of assessment so as to discourage plagiarism (Carroll, 2002).

The Student's Role

There is an extensive literature that explores why students 'cheat' (Park, 2003; Marsden et al., 2004; and Graham and Leung, 2004) with the most frequently cited causes as 'not having enough time', 'fear of failure', and 'inauthentic assignments'. However, there is an equally vocal camp that argues that many acts of plagiarism are 'unintentional' and are "associated with poor academic practice stemming from ignorance or misunderstanding of requirements" (Harvey and Robson, 2004).

Open University

In the development stage of the course, the T209 course team took account of the students' need for academic skills development. Guidance on referencing was included at the start of the course and at various points later. This took the form of stating the 'rules' for referencing and appropriate use of quotations, and providing examples of good practice. Opportunities were provided in two of the continuous assessment assignments for students to practice and receive tutor feedback on their quoting and referencing skills. It therefore came as a surprise when 2.0% of the submitted ECA scripts were found to include unattributed copied text that was of sufficient extent to warrant disciplinary action. In the second and third years of presentation, the guidance was made more explicit and was considerably strengthened. A section was added giving advice on what constitutes acceptable paraphrasing, and a plagiarism statement was included with assignment questions. Despite these measures,

detected plagiarism has risen steadily between 2004 and 2006. This increase may, in part, be due to more efficient detection methods, through better use of plagiarism detection software, and the accumulation of experience. However, the evidence indicates that instances of plagiarism are increasing, despite the course team's efforts to discourage it. This appears to endorse the view that "plagiarism is doubtless common and getting more so" (Park 2003 p471) and also raises the question of the effectiveness of spending increasing staff time on detection without also focussing on deterrence (Carroll, 2004).

Examination Board's Role

Within the UK the Examination Board is the academic body responsible for setting standards and implementing disciplinary policy. Such a board may be convened for each course, or more commonly for each award. Decisions may require ratification by a higher academic authority, but its decisions are generally sacrosanct. The Board is therefore central to the goal of consistent interpretation and implementation of QA policy. Unfortunately these Boards also deliberate in secret and any evidence that might be gleaned is anecdotal. The picture that does emerge is one of inconsistency with different rules applied across the institution, within a Faculty, and within a Department. This is clearly an area for urgent review.

UKOU also devolves academic decisions to a course Exam Board, but all disciplinary matters, not just academic ones, are dealt with by the Central Disciplinary Committee (CDC). Cases of cheating are regarded as serious offences and students are invited to attend a hearing at which they can explain what they have done. The academic's role is to provide evidence of 'questionable conduct', since the members of the committee will in all probability have little knowledge of the subject matter. Whilst a central committee model helps to ensure consistency of policy, the growth in disciplinary cases in recent years has lead to a review of this process and the future may see a two-tier disciplinary process with only the most serious and persistent offenders referred to the CDC.

Institution's Role

The most frequently citied issues related to HE institutions is their failure to adequately inform students of policy and to enter a dialogue regarding assessment practice and policy. A recent study by Jones (2006) highlights the differences between the definitions of plagiarism as a form of academic misconduct and the academic policies established to deal with such breaches.

Baroness Deech (2006), the Independent Adjudicator for Higher Education, has stated "It is important for universities and colleges to have coherent policies and procedures in place, which are rolled out across the institution, and to ensure that approaches to prevention, detection and discipline are applied consistently across courses."

Manchester Metropolitan University

The institutional policy at MMU (Manchester Metropolitan University, 2006) spells out the penalties for plagiarism at undergraduate level thus:

Offences occurring in Stage 1/Year 0:

- "For a first offence where the plagiarism is not extensive (i.e. does not represent more than 20% of the element of assessment) – a written warning and a maximum mark of 40% for the element."
- "For a first offence where the plagiarism is extensive (i.e. greater than 20% of the

element of assessment) – a written warning and a mark of 0 for the element."

- "For a second offence in any Unit within the same programme of study – a further warning and a mark of 0 for the element of assessment in which the second offence occurred."
- "For a third offence in any Unit within the same programme of study – failure in the Unit in which the offence occurred."
- "For any subsequent offence anywhere within the same programme of study – failure of the Stage."

Offences occurring at Stages 2 & 3 or Final Stage assessment:

- "Where there is no previous plagiarism offence record in any Stage and the plagiarism represents not more than 20% of the element of assessment – a maximum mark of 40% for the element of assessment."
- "Where there is no previous plagiarism offence record and the plagiarism represents more than 20% of the element of assessment – a mark of 0. Where there is a previous plagiarism offence record – failure in the Unit concerned."
- "Where the student has already been penalised for plagiarism in the same Stage, failure of the Stage."

Although these penalties are in line with those of other UK HEIs, some have argued that in certain circumstances these penalties may not pose a high enough risk for those students who see plagiarism as a "rational choice" (Woessner, 2004) when weighing up the risk/reward ratio. In the MMUBS case we were bound by this tariff, but we understood that students may not be fully aware of the penalties and that perhaps the message could be communicated in a language closer to their own. With that in mind this institutional policy was communicated to students in various forms via the student handbook, the university web site, induction lectures and various notice boards. In addition to these by far the most effective medium for conveying the message that plagiarism was taken seriously was tutor-to-student communication, and even more importantly student-to-student communication. This student-to-student communication was often observed to take place face-to-face on campus, but increasingly students made of text messaging and email to communicate both horizontally across the year and vertically to subsequent years that plagiarism was being taken seriously. This communication did of course tend to be focused on the subset of course offerings that formed part of the case study and it is highly likely that students developed an understanding of which units within a department, and institution, took plagiarism more seriously than others.

From a quality perspective this is less than ideal, but we see it as part of the necessary tension that forms between enthusiastic innovators and institutional policy makers. In order to shape institutional policy, enthusiasts have to undertake action research and disseminate their findings. This research invariably sees some students treated differently from others with regards to plagiarism assessment, but professional integrity attempts to ensure that students are not penalised unfairly. We do wish to see the use of electronic detection tools as part of a holistic approach to plagiarism institutionalised in order to ensure the equitable treatment of students, but we do not with to see tutors removed from the process of *educating*, *deterring*, *detecting*, and *dealing appropriately with* plagiarism instances. This appears to be a trend in some institutions towards the use of academic conduct officers (Macdonald and Carroll, 2006) and we view this with some caution. The findings from the MMUBS case study indicate that those best to make professional judgements concerning plagiarism are those who set and mark students' work. And, crucially, the message that defines the meaning of plagiarism and what is deemed unacceptable academic practice must be delivered by those closest to the students in order for it to be most effective.

Open University

Policy for UKOU students is disseminated through the "Policy on Plagiarism" document available via the University's website. The policy states:

> "If you submit an assignment that contains work that is not your own, without indicating this to the marker (acknowledging your sources), you are committing 'plagiarism'. This might occur in an assignment when
>
> - Using a choice phrase or sentence that you have come across.
> - Copying word-for-word directly from a text.
> - Paraphrasing the words from a text very closely.
> - Using text downloaded from the internet.
> - Borrowing statistics or assembled facts from another person or source.
> - Copying or downloading figures, photographs, pictures or diagrams without acknowledging your sources.
> - Copying from the notes or essays of a fellow student.
> - Copying from your own notes, on a text, tutorial, video or lecture, that contains direct quotations.
>
> Plagiarism may occur inadvertently due to inexperience. So read carefully all the course specific study advice that you receive in your mailings, especially statements concerning plagiarism and how to reference your sources."

From 2007, most Open University students will have the opportunity to submit their assignments electronically, and for many this mode of submission will be a requirement rather than an option. This will create enhanced opportunities for quality assurance through the use of the University's chosen plagiarism checking software, CopyCatch, but will also require the University to have robust procedures in place to deal with the additional checking, processing and inevitable disciplinary action. In response to this, the University has set up a project review team to examine current policies and procedures and to make recommendations for the future. The main points from these recommendations are briefly detailed below.

- Establish a team of experienced academics working with faculties whose role will be to advise on the development of good practice and the application of plagiarism policy, and to consider plagiarism cases and apply appropriate penalties
- Establish a coherent development of study skills which will help students to understand and avoid plagiarism. These should include self study induction material, such as Epigeum's interactive course 'Avoiding Plagiarism' (Epigeum, 2005).
- Fully integrate the use of plagiarism detecting software (such as CopyCatch) into the assignment processing system so that it is used consistently rather than as a stand-alone option, ensuring that all submitted assignments are routinely scanned.
- Formulate and apply a standard set of actions and penalties for dealing with plagiarism cases that will apply across the university.
- Create a system for recording all instances of plagiarism and the action taken to deal with it.

Adoption of these recommendations will strengthen quality assurance in a number of ways. Working together, an academic team with the primary responsibility for addressing plagiarism issues will be able to encourage consistency in approach across the institution and

disseminate national and global developments and evolving practice (Carroll, 2004). By requiring and recording students' participation in appropriate study skills development, all students will be fully aware of their own responsibility for good academic conduct. Though the full integration of plagiarism detecting software should not on its own be seen as an adequate deterrent to plagiarism, its systematic use will make a significant contribution in identifying student mal-practice throughout the institution. The establishment of standard actions, penalties, and recording procedures will ensure that such mal-practice is dealt with fairly and consistently with a clear audit-trail.

QAA

As the national authority responsible for quality assurance of UK higher education the QAA has a major part to play in ensuring the development of consistent policies across all HEIs. The Code of Practice for the year 2000 (QAA, 2000) stated that institutions should have in place "...definitions of academic misconduct in respect of assessment such as plagiarism..." and "effective mechanisms to deal with breaches of assessment regulations." However we should note that the 2006 edition has further references that point towards a more holistic approach. These are: "raise awareness of staff about the importance of designing assessments that minimise opportunities for plagiarism and other forms of unfair practice" and "accepted and acceptable forms of academic referencing and citation and advice which promotes good academic practice, for example, making clear the need to avoid any suspicion of plagiarism". Further evidence of the QAA's concerns is apparent from the inclusion of statements regarding plagiarism within the most recent Academic Subject Reviews.

Conclusions

The research we have undertaken adds strong support to the case for a holistic approach to the issues of plagiarism and collusion, and for HEIs to adopt basic QA principles in relation to infrastructure, management, competencies, and culture. Within this framework policies must be seen to be fair, comprehensive, and consistently applied at all levels of an institution.

JISC PAS has done much to raise awareness of the issues through its support of public resources, research, conferences, and workshops, not just the provision of tools. However, keeping abreast of all these developments adds to teachers workloads at a time when most HEIs are subject to changes in markets, curriculum, and management.

It is also clear that there is also much work to do in educating students. Acceptable practice needs to be communicated clearly and this is best achieved through direct contact with teachers and other students; not left to policy documents that leave room for interpretation and misunderstanding. The penalties must also be perceived to be commensurate with the crime so as to negate the sense of 'it's worth the risk'.

For the future there remain many questions of 'rights'. Do students retain any rights to their work and their rights to privacy? What rights do institutions have to retain copies of assignments and for how long, and what rights do they have to pass this on to a commercial organisation? No doubt some answers will have to await judicial review and legislation. If the plagiarism discourse continues to be one characterised by conflict then the outcome of these 'battles' will prove influential in shaping the way institutions approach the management of student plagiarism in the future. However we would rather see the ongoing plagiarism debate reframed as one that emphasises the role of plagiarism *education, deterrence, detection, and dealings* as a crucial component of quality assurance, and that it is impressed upon students that they remain key beneficiaries of the upholding of these standards in HEIs.

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