

Introduction

It is generally acknowledged that the incidence of plagiarism is increasing, a situation exacerbated by the ready availability of a variety of information sources via the internet (e.g. see Taylor 2003; Stoney and McMahon 2004; Devlin 2006). In fact Stoney and McMahon (2004: 2) describe plagiarism “as a battleground, where a war is waged between students and institutions, and played out using all of the means afforded by contemporary digital technologies”. On the one hand, students turn to the web as a primary, familiar and convenient information source, the use of which might lead to intentional or unintentional plagiarism, while institutions are increasing investment in digital detection capabilities, such as Turnitin software, as a defence.

Traditional approaches for tackling plagiarism reflect two distinct philosophies: either educate the students by providing and reinforcing information about correct citation and referencing, acceptable collaboration and so on; or catch and punish behaviour deemed unacceptable (Taylor 2003; Hart & Freisner 2004). Taylor (2003) and Macdonald and Carroll (2006) note that both approaches carry the implicit assumption that the responsibility for avoiding plagiarism is the student’s, and whenever a problem is encountered, the blame rests with the student rather than with faculty or the institution. However, commentators are beginning to make calls for educators to consider pedagogy and assessment design as a key means of reducing the likelihood of plagiarism (e.g. Stoney and McMahon 2004; Hart and Freisner 2004; McGowan 2005; Macdonald and Carroll 2006; N-Learning 2009; Hughes 2009).

Despite the growing interest in assessment design, Hughes (2009: 554) describes the literature on assessment task design and plagiarism minimisation as “surprisingly light”. The purpose of this paper is to contribute to this area of the literature by focussing on attitudes and practices regarding assessment design and plagiarism. The specific aims of this study are:

- to determine whether beliefs about why students plagiarise, and the extent of the problem, appear to underpin attitudes and actions regarding response strategies;
- to document actual practices regarding assessment (and other) strategies in one university to assess the range and extent of existing responses;
- to identify which strategies faculty see as being more (or less) effective in reducing the likelihood of plagiarism; and
- to identify the key impediments to implementing innovative assessment strategies.

Strategies to reduce plagiarism

In 2000, the Australian Government established the Australian Universities Teaching Committee (AUTC) with the brief to identify emerging issues in teaching and learning across Australian universities (ALTC 2009). In 2002, the Centre for Study for Higher Education (CSHE) for the AUTC completed and reported on the findings of a major project investigating the ideas and strategies that lead to quality in student assessment (James, McInnis & Devlin 2002). One part of the report considered approaches to minimise plagiarism and recommended a four-part strategy comprising:

1. a collaborative effort at all levels from the individual staff member through to the institutional and policy level to counter plagiarism;
2. educating students appropriately;
3. designing assessment such that the possibility of plagiarism is minimised; and

4. implementing highly visible detection and monitoring procedures accompanied by appropriate punitive measures (James, McInnis & Devlin 2002: 37).

The first arm of the strategy reflects a philosophy of sharing the responsibility for countering plagiarism across the student, the individual faculty member and the institution. Macdonald and Carroll (2006) argue that such a holistic approach is essential to countering the complex problem of plagiarism, a view echoed by Devlin (2006), Pickard (2006), Pittman-Munke and Berghoef (2008) and East (2009). The second arm reflects the traditional “educate” approach of providing information about appropriate behaviour, teaching necessary skills and communicating expectations as to what is acceptable and what is not. The CSHE (2002) outlines 36 strategies to minimise plagiarism, of which six relate to educating students and communicating expectations. Items here include creating a culture of honesty, teaching skills of summarising, critical analysis, referencing and citation, and warning about theft of unprotected work. The fourth arm of the AUTC/CSHE approach is reflective of the “catch and punish” philosophy. It relates to detection and deterrents, and the visibility of efforts related to monitoring and punishment. Eight of the CSHE’s (2002) minimisation strategies fall into this area, and include such items as: requiring electronic submission, educating yourself about electronic sources that students might find attractive, using coversheets, and enforcing deterrence penalties.

The remaining part of the four-part strategy relates to assessment design, encouraging innovative assessment practices that reduce the likelihood of plagiarism and/or the opportunities for it to occur. The remainder of the CSHE’s (2002) minimisation strategies relate to assessment. A review of the literature suggests that approaches can be categorised into three broad groups, reflecting the “what”, the “how” and the “when” of assessment. “What” issues relate to both the question focus and to the specific aspects of the entire assignment process that are assessed. A very common and basic recommendation is to change the questions asked from year to year (Brown 2001; Taylor 2003; Alam 2004; Hart & Friesner 2004). Further, these questions should set out clear expectations and require higher order thinking rather than mere data collection and descriptive reporting (Stefani & Carroll 2001; Olt 2002; Taylor 2003; Hart & Friesner 2004).

Many commentators suggest that there should be greater focus on the process that students go through to produce the final assessment piece rather than on the final piece itself (e.g. Olt 2002; Born 2003; Hart & Friesner 2004). This can be achieved by allocating marks for various stages of the process that need to be undertaken to complete the assessment task, requiring students to submit a log of their research process or evidence of various parts of it such as first drafts, lists of sources identified and the process used to identify them, developed outlines, subsequent drafts and so on (Walker 1998; Stefani & Carroll 2001; Olt 2002; Zobel & Hamilton 2002; Born 2003; Taylor 2003; Alam 2004; Darab 2006; Hughes 2009).

The “how” of assessment encompasses innovative modes that are less prone to plagiarism as they are less likely to be able to be purchased, copied or faked. Examples include creative poster presentations, mind maps, gaming, annotated bibliographies, and the use of technology through Weblogs, Wikis, electronic portfolios and the like (e.g. Carroll 2002; Bassendowski & Salgado 2005; Hughes

2009). In-class contributions, activities and tests might be used more often to undertake assessment (Born 2003, Alam 2004). Where more traditional assessment tasks are retained, they can be supplemented with oral assessments (Stoney and McMahon 2004; Hughes 2009).

The “when” relates to timing, although there is a lack of consensus regarding assessment frequency and plagiarism mitigation. For example, Born (2003) suggestion that assessment tasks should be set more frequently is consistent with Olt (2002) who recommends that a series of smaller sequential tasks be used. The underlying logic is that it may be more difficult for students to persuade others to assist them, or to be able to afford to purchase assistance, when the number of tasks is large and where they are interdependent. Conversely, Alam (2004) recommends that the amount of assessment be reduced to avoid plagiarism activity that stems from time pressure and poor time management.

The research questions

This paper is concerned particularly with aspects of innovative assessment design as a strategy to minimise plagiarism, within the context of the broader range of strategies that underpin a holistic approach to counteracting plagiarism. Reflecting the three operational arms of the four-part approach advocated by AUTC/CSHE (James, McInnis & Devlin 2002), (educate and communicate expectations, visibly monitor and penalise plagiarism, and assessment design), the first three research questions are:

RQ1: Which of a range of strategies aimed at educating students and making expectations clear are:

- i used
- ii considered effective
- iii are likely to be used in the future?

RQ2: Which of a range of strategies aimed at visibly monitoring, detecting and responding to incidences of plagiarism are:

- i used
- ii considered effective
- iii are likely to be used in the future?

RQ3: Which of a range of strategies aimed at designing assessment to minimise opportunities for plagiarism are:

- i used
- ii considered effective
- iii are likely to be used in the future?

Two further research questions address whether there are relationships between assessment strategies used and perceptions about the underlying causes of plagiarism, and between the use of strategy use and possible impediments to its adoption:

RQ4: Is the propensity to adopt a particular assessment strategy correlated with beliefs held as to why students plagiarise?

RQ5: Is the propensity to adopt a particular assessment strategy correlated with attitudes about potentials factors that might impede attempts to redesign assessment to minimise opportunities for plagiarism?

Research Method

A questionnaire instrument was developed to be administered to academic teaching staff across the five faculties that make up the University of Tasmania. It commenced with the definition of plagiarism that is made available on the University's web site (University of Tasmania 2010), namely:

the stealing or passing off as one's own (the idea or words of another); use (a created production) without crediting the source; to commit literary theft; present as new and original an idea or product derived from an existing source (Webster's Third New International Dictionary of the English Language, Unabridged, p. 1728).

This was followed by six sets of questions. The first set pertained to the reasons students plagiarise. Drawing from Park (2003) and Hart and Friesner (2004) a list of eight potential reasons were provided to respondents who were asked to indicate the extent of their agreement as to whether the item was a likely reason for plagiarism. The specific items are presented in Table Eight in the next section. In all cases throughout the questionnaire where extent of agreement with a statement was sought, the following fully anchored scale was used:

- 1 = Strongly Disagree
- 2 = Disagree
- 3 = Neutral
- 4 = Agree
- 5 = Strongly Agree.

Sets two, three and four contained, respectively, plagiarism minimisation strategies that might be adopted to: educate and communicate expectations; visibly monitor detect and respond to plagiarism, and design assessment tasks to minimise opportunities for plagiarism. These items were drawn from CSHE's (2002) list of strategies to minimise plagiarism, a link to which is provided on the University of Tasmania's web page of staff resources regarding academic integrity. In each case respondents were asked whether or not they currently implement the strategy and also to indicate the extent of their agreement as to whether the strategy would be effective and whether they would be likely to use it in the future. The specific items are reported in Tables Two - Four.

Set five listed nine factors that might impede attempts to redesign assessment in order to minimise opportunities for plagiarism. These items drew on discussion by Devlin (2003), Stoney and McMahon (2004), Bretag (2005), and Hughes (2009) as well as on anecdotal observations of the researchers. The items are reported in Table Ten, and again, respondents were asked to indicate the extent to which they agreed that each was a barrier to assessment redesign. The final part of the questionnaire collected demographic data.

The questionnaire was pilot tested by three academic staff members from the Faculty of Business and minor ordering and wording refinements were made before it was mailed in hard copy to 774 academic staff members at the University of Tasmania. This number represented all staff identified as being in one of the five faculties at the University and who had teaching responsibilities as part of their role. Research institutes and research-only staff were not surveyed. The final instrument is available from the authors on request.

Results and discussion

One hundred and seventy five usable responses were received, representing a response rate of 22.6 per cent. Respondents typically were experienced academics, with 65 per cent indicating that they had been employed in the tertiary sector for more than five years. Only 12 per cent reported that they had less than two years of experience. As shown in Table One, respondents covered the full range of academic levels and came from all faculties across the university.

Table One: Academic level and discipline area of respondents

Academic Level	Proportion of respondents	Faculty	Proportion of respondents	Proportion of University
Professor	5.4	Arts	21.9	21.3
Associate Professor	7.7	Business	12.9	8.7
Senior Lecturer	20.2	Education	11.8	8.7
Lecturer	45.8	Health Science	22.9	28.1
Associate :Lecturer	16.7	Law	1.8	3.2
Other	4.2	Science, Engineering and Technology	28.8	30.0
	100.0			100.0

Research Questions One, Two and Three related to whether or not respondents used a particular strategy and to their beliefs about effectiveness and use in the future. As reported in Table Two, all of the strategies associated with educating and communicating expectations about plagiarism were used. However, only three of the six strategies were more likely to be used than not used. These strategies were: creating a climate of involvement and interest rather than one of detection and punishment; teach skills of critical analysis and building an argument; and teach skills of referencing and citation. Respondents were significantly less likely than more likely to warn students of the possibility of their work being stolen or copied if left on university computers

Similarly, as indicated in Table Three, all strategies aimed at visibly monitoring, detecting and responding to incidences of plagiarism. However only two of the seven strategies were more likely than not to be used: supporting the use of deterrence penalties and the use of coversheets. In the context of the University of Tasmania, these are relatively easy strategies to implement at the individual faculty member level. It is a University requirement that students use a standard-form signed coversheet, for which an electronic pro-forma is available, when submitting assignments. Similarly deterrence penalties are the responsibility of the Head of School or a Disciplinary Committee, depending on the nature of the offence, and

individual staff level involvement in determining penalties is minimal once the case of suspected plagiarism has been reported. Conversely, the two strategies that were significantly less likely to be used would require specific effort on the part in the individuals using them. These were: educate yourself about electronic options available and attractive to students in your discipline and use a search engine to help find the sites students are likely to find.

Table Two: Strategies aimed at educating and communicating expectations

Strategy	Per cent of respondents currently using	Average agreement score on effectiveness (/ 5)	Average agreement score on future use (/ 5)
Create a climate of involvement and interest rather than one of detection and punishment	70% [†]	3.65 [*]	3.76 [*]
Warn students of the possibility of their work/programs/files being stolen/copied if left on the hard disks of university computers	24% ^{††}	3.33 [*]	3.18
Teach the skills of summarising and paraphrasing	54%	4.17 ^{**}	3.78 [*]
Teach skills of critical analysis and building an argument	75% [†]	4.29 ^{**}	4.12 [*]
Teach the skills of referencing and citation	81% [†]	4.35 ^{**}	4.28 ^{**}
Include mini-assignments that require students to demonstrate skills in summarising, paraphrasing, critical analysis, argumentation, referencing and/or citation	56%	4.11 [*]	3.63 [*]

[†] significantly greater than 50% ($p < 0.05$) ^{††} significantly less than 50% ($p < 0.05$)

^{*}significantly above the neutral point of 3 ($p < 0.05$); ^{**}significantly above the agree point of 4 ($p < 0.05$)

Of the nine strategies concerned with designing assessment to minimise opportunities for plagiarism, five were more than less likely to be used. These were:

- Change the assessment tasks from year to year
- Avoid assignments that ask students simply to collect, describe and present information
- Use essay/assignment topics that integrate theory and examples or use personal experience
- Assess work produced in class, (oral or written); and
- Ask students to make an oral presentation as part of the assessment of written assignments.

Conversely, three strategies were less likely to be used, namely:

- Require stages of the work to be submitted, such as first drafts, lists of sources identified and the process used to identify them and allocate marks for the various stages

- Minimise the number of assessment tasks; and
- Collect an annotated bibliography before the submission is due.

The strategy of using alternatives to the standard essay, such as case studies, poster presentations, Wikis or Weblogs, was equally likely to be used as not used.

Table Three: Strategies aimed at visibly monitoring, detecting and responding to incidences of plagiarism

Strategy	Per cent of respondents currently using	Average agreement score on effectiveness (/ 5)	Average agreement score on future use (/ 5)
Require all students to submit essays and assignments electronically, while making students aware of the plagiarism checking software that exists	44%	3.93*	3.66*
Support the use of deterrence penalties	66% [†]	3.99*	3.91*
Request that all work outside of examinations be submitted with a cover sheet defining plagiarism and requiring the student's signature	87% [†]	3.53*	4.14*
Publicise information about penalties imposed when plagiarism is found	43%	3.90*	3.96*
Educate yourself about electronic options available and attractive to students in your discipline	38% ^{††}	3.54*	3.77*
Use a search engine to help find the sites students are likely to find	37% ^{††}	3.39*	3.22*
Demonstrate to your students your awareness of electronic resources available to them	47%	3.69*	3.58*

[†] significantly greater than 50% ($p < 0.05$) ^{††} significantly less than 50% ($p < 0.05$)

* significantly above the neutral point of 3 ($p < 0.05$); ** significantly above the agree point of 4 ($p < 0.05$)

The information in Tables Two, Three and Four indicates that with the exception of the last two strategies related to assessment, respondents felt that all strategies would be effective in counteracting plagiarism, with each receiving an average score significantly above the neutral point of three on the five point scale. In terms of effectiveness, the top five ranked strategies were:

1. Teach the skills of referencing and citation (4.35)
2. Teach skills of critical analysis and building an argument (4.29)
3. Use essay/assignment topics that integrate theory and examples or use personal experience (4.22)
4. Change the assessment tasks from year to year (4.21)
5. Include mini-assignments that require students to demonstrate skills in summarising, paraphrasing, critical analysis, argumentation, referencing and/or citation (4.11)

The first two items relate to education and communication and the next two to assessment, but there was no statistically significant difference in the scores assigned to these top four. The final item, although grouped with the items on education and communication, also has elements of assessment in that it relates to setting assignments specifically related to combating plagiarism. Thus, a tentative conclusion that might be drawn from the data is that respondents consider educational and communication strategies and assessment design approaches as equally effective counter-plagiarism strategies and that any holistic approach should include elements of both.

Not surprisingly, in every case there was significant positive correlation between use of a strategy and perceptions about its effectiveness, as indicated by Kendall's tau (not individually reported). The correlation ranged between 0.22 and 0.39 for use and effectiveness of education and communication strategies, between 0.19 and 0.47 for visibility strategies and between 0.40 and 0.64 for assessment strategies. Thus there appears to be strongest translation of potentially effective strategies into actual strategies in the case of assessment choices in that the more effective a strategy was felt to be, the more likely it also was that it was enacted, and vice versa.

Table Four: Strategies to design assessment to minimise opportunities for plagiarism

Strategy	Per cent of respondents currently using	Average agreement score on effectiveness (/ 5)	Average agreement score on future use (/ 5)
Change the assessment tasks from year to year	79% [†]	4.21 ^{**}	4.19 [*]
Avoid assignments that ask students simply to collect, describe and present information	80% [†]	4.07 [*]	4.07 [*]
Use essay/assignment topics that integrate theory and examples or use personal experience	79% [†]	4.22 ^{**}	4.18 [*]
Use alternatives to the standard essay, such as case studies, poster presentations, Wikis or Weblogs	54%	3.63 [*]	3.56 [*]
Assess work produced in class, (oral or written)	59% [†]	3.94 [*]	3.76 [*]
Ask students to make an oral presentation as part of the assessment of written assignments	59% [†]	3.91 [*]	3.74 [*]
Require stages of the work to be submitted, such as first drafts, lists of sources identified and the process used to identify them and allocate marks for the various stages	26% ^{††}	3.37 [*]	2.87
Minimise the number of assessment tasks	35% ^{††}	2.83	2.79 ^{***}
Collect an annotated bibliography before the submission is due	8% ^{††}	2.82 [*]	2.48 ^{***}

[†] significantly greater than 50% ($p < 0.05$) ^{††} significantly less than 50% ($p < 0.05$)

^{*} significantly above the neutral point of 3 ($p < 0.05$) ^{**} significantly above the agree point of 4 ($p < 0.05$)

^{***} significantly below the neutral point of 3 ($p < 0.05$)

The data on likely future use indicate that all but four of the strategies were likely to be implemented. Respondents were neutral about warning students in the future about the potential theft of unprotected work and also about requiring stages of assessed work to be submitted with marks allocated to stages undergone in completing the required piece of assessment. Respondents were significantly less likely to implement two of the assessment strategies in the future, namely, minimising the number of assessment tasks and collecting an annotated bibliography before submission date. While correlations between effectiveness and assessment strategies were strongest overall, fewer strategies from this set are likely to be implemented in the future. This might suggest that inaction reflects a belief that implementation would not be effective, and not that there exist any specific impediments to action.

As with the relationship between effectiveness and current use, there was consistent positive correlation between perceptions about effectiveness and likelihood that a strategy would be used in the future. The correlation ranged between 0.54 and 0.72 for future use and effectiveness of education and communication strategies, between 0.50 and 0.85 for visibility strategies and between 0.49 and 0.75 for assessment strategies. The magnitude of the correlation between effectiveness and future use for each strategy was consistently higher than that of the correlation between current use and effectiveness, and in the case of the educate and communicate and visibility strategies, it was around double. This might reflect two things: first that some respondents may have been unaware of some of the strategies that might be implemented and/or for those whose effectiveness is known, there exists some impediment to their current use. Tables Five, Six and Seven show the ranks for the three sets of strategies, respectively, on current use, effectiveness and likely future use. Whilst some ranks are relatively consistent others are not, suggesting that implementation decisions might be driven by ease of use factors and barriers to implementation, rather than views on effectiveness.

Table Five: Ranking of strategies aimed at educating and communicating expectations

Strategy	Ranks on Use	Rank on Effectiveness	Rank on future use
Create a climate of involvement and interest rather than one of detection and punishment	3	5	4
Warn students of the possibility of their work/programs/files being stolen/copied if left on the hard disks of university computers	6	6	6
Teach the skills of summarising and paraphrasing	4	3	3
Teach skills of critical analysis and building an argument	2	2	2
Teach the skills of referencing and citation	1	1	1
Include mini-assignments that require students to demonstrate skills in summarising, paraphrasing, critical analysis, argumentation, referencing and/or citation	5	4	5

Table Six: Ranking of strategies aimed at visibly monitoring, detecting and responding to incidences of plagiarism

Strategy	Ranks on Use	Rank on Effectiveness	Rank on future use
Require all students to submit essays and assignments electronically, while making students aware of the plagiarism checking software that exists	4	2	5
Support the use of deterrence penalties	2	1	3
Request that all work outside of examinations be submitted with a cover sheet defining plagiarism and requiring the student's signature	1	6	1
Publicise information about penalties imposed when plagiarism is found	5	3	2
Educate yourself about electronic options available and attractive to students in your discipline	6	5	4
Use a search engine to help find the sites students are likely to find	7	7	7
Demonstrate to your students your awareness of electronic resources available to them	3	4	6

Table Seven Ranking of strategies to design assessment to minimise opportunities for plagiarism

Strategy	Ranks on Use	Rank on Effectiveness	Rank on future use
Change the assessment tasks from year to year	=2	2	1
Avoid assignments that ask students simply to collect, describe and present information	1	3	3
Use essay/assignment topics that integrate theory and examples or use personal experience	=2	1	2
Use alternatives to the standard essay, such as case studies, poster presentations, Wikis or Weblogs	6	6	6
Assess work produced in class, (oral or written)	=4	4	4
Ask students to make an oral presentation as part of the assessment of written assignments	=4	5	5
Require stages of the work to be submitted, such as first drafts, lists of sources identified and the process used to identify them and allocate marks for the various stages	8	7	7
Minimise the number of assessment tasks	7	8	9
Collect an annotated bibliography before the submission is due	9	9	8

Research Question Four regarded whether the propensity to adopt a particular assessment strategy correlated with beliefs held as to why students plagiarise. Respondents were asked to score eight possible reasons why students plagiarise. The items, ranked in order of the extent of agreement that the item was a cause, are presented in Table Eight. For all items except for the belief that the University does not treat plagiarism as a serious offence, stated agreement with the reason is significantly above the neutral point of three on the five point agreement scale.

Table Eight: Extent of agreement with reasons why students plagiarise

Reason for plagiarising	Agreement score (/ 5)
Easy access to material via the internet	4.39
A desire to achieve a better mark	3.99
Poor time management	3.90
Students believe that the risk of detection is low	3.87
A lack of understanding of what plagiarism actually is	3.78
Students do not consider plagiarism to be a serious offence	3.45
Students believe that the penalties for plagiarism are not very heavy so it is worth the risk	3.19
Students believe that the University does not treat plagiarism as a serious offence	3.10

There was significant positive correlation between use of three assessment strategies and specific beliefs about why students plagiarise and two significant negative correlations and these correlations might reflect some logically intuitive underlying rationales, as shown in Table Nine. Interestingly, four of the five in the Table ranked in the bottom four on use and effectiveness and two ranked below the neutral point for effectiveness. This might suggest that, although their use may be in the minority and their effectiveness doubted by the majority, where they are used, it is because those implementing them are responding proactively to the beliefs about the underlying causes of plagiarism. Conversely, the more popular strategies are implemented despite any clear correlation between their use and beliefs about the causes of plagiarism that were assessed here. This may mean that causes other than those popularly identified in the literature drive their use, or that particular strategies are undertaken as entrenched practices in the accepted culture, not necessarily guided by a cause and effect logic.

The final research question asked whether the propensity to adopt a particular assessment strategy correlated with attitudes about potential factors that might impede attempts to redesign assessment to minimise opportunities for plagiarism. Respondents' attitudes about impediments to action are documented in Table Ten, ranked in order of the degree to which each is perceived to be an impediment. As the table shows, of the list provided, only three potential impediments ranked significantly above the neutral point. These were insufficient time, insufficient resources and support, and inadequate training.

Five items scored significantly below the neutral point suggesting that respondents disagreed that these were impediments. These items were:

- Student Teaching and Learning Evaluations (SETLs) are likely to be negatively impacted
- Students will view the unit as less attractive
- The rigour of assessment will decline
- The quality of learning outcomes will be diminished
- External stakeholders expect traditional forms of assessment.

Table Nine: Assessment strategies that correlate with reasons why students plagiarise

Strategy use	Positively correlated with belief that students plagiarise due to:	Possible interpretation
Use alternatives to the standard essay, such as case studies, poster presentations, Wikis or Weblogs	A lack of understanding of what plagiarism actually is	Reflects a desire to assist students avoid unintentional plagiarism arising from misunderstanding by setting tasks where “accidental” plagiarism is far less likely to occur
Require stages of the work to be submitted, such as first drafts, lists of sources identified and the process used to identify them and allocate marks for the various stages	Poor time management	Identifying multiple stages of a tasks and having these stages submitted for assessment helps students manage time better and avoid last minute pressure that might induce plagiarism
Collect an annotated bibliography before the submission is due	Easy access to material via the internet	Whilst material might be easily available, requiring an annotated bibliography reduces its usefulness as students will need to read the sources they claim to have used
	Negatively correlated with belief that students plagiarise due to:	
Change the assessment tasks from year to year	Students do not consider plagiarism to be a serious offence	Unclear
Minimise the number of assessment tasks	A desire to achieve a better mark	Give more assessment as the more that is required the harder it might be to find others prepare to assist with plagiarism, particularly if this is costly

In only two cases was there a significant negative correlation between a perceived impediment and use of an assessment strategy. The first occurred between insufficient time, and asking students to make oral presentations; and the second between insufficient time, and avoiding assignments that ask students simply to collect, describe and present information. However, despite being below the neutral point, there were instances where impediments were associated with reduced use of a strategy. This occurred particularly with the strategy of using alternatives to the standard essay which was significantly negatively correlated with concerns that student evaluations are likely to be negatively impacted, and that external stakeholders expect traditional forms of assessment. Thus the data provide some limited evidence that plagiarism reduction efforts may be inhibited by factors related to both resources and to the perceptions of others. Further, while not all significant impediments correlated with specific strategies, there is a general perception that lack of resources, support and training are impediments to implementing assessment strategies that might reduce the incidence of plagiarism.

Table Ten: Impediments to implementing plagiarism reduction strategies

Impediment	Agreement score (/ 5)
Insufficient time	3.93*
Insufficient resources and support	3.57*
Inadequate training	3.30*
Lack of interest from higher levels within the university	3.06
SETL evaluations are likely to be negatively impacted	2.72**
Students will view the unit as less attractive	2.62**
External stakeholders expect traditional forms of assessment	2.60**
The rigour of assessment will decline	2.19**
The quality of learning outcomes will be diminished	2.13**

*significantly above the neutral point of 3 ($p < 0.05$);

**significantly below the neutral point of 3 ($p < 0.05$)

Concluding comments

This survey research provides a census of contemporary practice and perceptions in one university that provide insights on which both individuals and institutions might reflect to develop more proactive and holistic plagiarism strategies. The results suggest that respondents see strategies aimed both at educating and communicating expectations and with designing assessment tasks to minimise opportunities for plagiarism as important elements of plagiarism reduction attempts. This is consistent with calls for a more holistic approach to the management of plagiarism. The data further reveal that some of the strategies recommend by CSHE (2002) are less likely to be implemented, particularly those that are perceived to be relatively less effective. However, there is a supporting literature that suggests that all of the strategies ought to be effective. Thus, if the literature is correct, educative approaches may be necessary to raise awareness of the potential that such strategies offer.

Further, there was often no clear alignment between views as to why students plagiarise and the plagiarism reduction strategies used. This may be indicative of perpetuating entrenched practices rather than a pro-active plagiarism reduction strategy that is underpinned by any clear cause and effect logic. Finally, a range of significant impediments to the implementation of assessment-driven strategies to reduce plagiarism were identified, some of which did appear to bear a direct relationship to the propensity to implement a particular strategy. Institutions might benefit from a focus on these impediments, whether perceived or real, to foster a holistic, proactive approach to implementing effective measure to reduce instances of plagiarism.

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