Effective practice in preventing and detecting academic fraud

Recent events in the media have highlighted concerns felt across the world with the types of assessment services being offered to students over the internet[1].

It is not uncommon for students to seek out the support and assistance of others when completing an assessment. However, where these support and assistance activities shift into commissioned exercises that impinge upon the integrity of a student's own work, this can negatively impact on the validity of what has actually been achieved by that student.

Government agencies, tertiary education providers and students have a responsibility for ensuring New Zealand's international reputation as a provider of high quality tertiary education is maintained. In a global environment, this responsibility becomes even more important.

Introduction

In May 2013, the New Zealand Qualifications Authority (NZQA) sought information from all non-university tertiary education providers[2] about "processes in place to detect cheating/fraudulent activities". Universities New Zealand also sought comment from universities and the Academic Quality Agency for New Zealand Universities, and provided NZQA with information based on analysis of international practice.

NZQA has developed this effective practice guide to capture initiatives and make reference to what organisations are doing, or could be doing, to address issues of academic fraud (cheating). The guide gives suggestions on how cheating can be prevented and detected, but it is not intended as a check-list. The suggestions were collated from providers, related research[3] and NZQA's existing website advice on strategies to ensure authenticity[4].

Each education provider is responsible for the integrity of its assessments, and should implement practices that are appropriate to the individual context of that organisation.

The scope of this guide

Most analyses of the issue of academic fraud separate **prevention**, **detection**, **investigation** and **outcomes**.

Prevention and detection, and investigation and outcomes have obvious connections. Some providers have comprehensive policy documents that cover all four processes, including practices staff are expected to follow to prevent and detect academic fraud.

This guide addresses prevention and detection of cheating through documented and systematised practices[5]. It suggests a variety of strategies, from which providers can select the practices most suitable to their teaching style, class sizes and assessment objectives.

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[1] For example: http://www.timeshighereducation.co.uk/news/lack-of-guidance-on-foreign-students-use-of-proofreaders/2006507.article and http://chronicle.com/article/High-Tech-Cheating-on-Homework/64857/

[2] "Non-university tertiary education providers" refers to, in this instance, institutes of technology and polytechnics, wānanga, and private training establishments.

[3] For example: Victoria University of Wellington and Ako Aotearoa, (2010), *Tertiary Assessment and Higher Education Student Outcomes: Policy, practice and research* http://akoaotearoa.ac.nz/ako-aotearoa/ako-aotearoa/resources/pages/tertiary-assessment-higher-education-student-outcomes-poli and the *Australian Integrity Standards Project: Aligning Policy and Practice in Australian Universities 2010-12* http://aisp.apfei.edu.au/

[4] See: http://www.nzqa.govt.nz key word: "Authenticity"

[5] This guide does not address investigation and outcomes. Policies and procedures that stipulate how a provider deals with accusations of academic fraud appear to be well covered by internal quality systems of tertiary education providers.

Policy for designing assessments

The *Tertiary Assessment and Higher Education Student Outcomes* publication[6] notes that the key functions and purposes for assessment are to: provide feedback on learning, measure learning, and ensure accountability. In this publication, the policy aspects of assessment are summarised as:

- Manageability and utility – activities associated with assessment, such as timing, managing feedback to students, and tracking student progress.
- Validity – assessments are clear and fit-for-purpose, fairly sample the objectives and content of the course, and use appropriate marking criteria.
- Equity – ensuring students are treated fairly and equitably across different types of delivery and courses with consideration to issues of culture, language, disability and so on.
- Integrity – preventing, detecting, and managing cheating, and the use of internal and external moderation.

The function and purposes of assessment drive the policy for assessment. A provider's overarching assessment design policy should consider how instances of cheating by students can be prevented or detected. While this effective practice guide focuses on the "integrity" aspect, the need to prevent and detect cheating is one of a number of important considerations in assessment design.

Effective practice – prevention

The process of preventing fraudulent/dishonest assessment practice (cheating) involves raising student awareness and consciousness of the relationship integrity has to the validity of assessment, deterring behaviour, and minimising opportunities for dishonesty.

The first step in preventing dishonesty is raising student consciousness

Before students are assessed it is important they understand the need for honesty and integrity.

Provide students with written information outlining expectations, policies, procedures and consequences of plagiarism and cheating. Include in the student code of conduct, student handbook, specific programme documents, etc. This should be done before and during enrolment and at the start of each course/programme. In some cases, this material should be translated into other languages.

Reiterate expectations, policies, procedures and consequences at meetings with groups of students. This should be done at the start of each course/programme and when assessment tasks are set. Include a discussion about the organisation's reputation. If it is known that cheating is not tolerated, the organisation will gain a reputation as a demanding place to gain qualifications and each graduate will benefit from high standards put in place by the organisation and its reputation for doing so.

Require students to sign a declaration that all work is original to the student, authentic, and free of plagiarism. Declarations will not prevent dishonesty but they remind students of expectations and consequences. In some cases, this material should be translated into other languages.

Furthermore, detail on the security of controlled and supervised assessments is not provided. Again, most providers have comprehensive documented practices for the supervision/invigilation of tests and examinations, and the practice is widely understood.

[6] Victoria University of Wellington and Ako Aotearoa, (2010), *Tertiary Assessment and Higher Education Student Outcomes: Policy, practice and research*.

Discuss the ethics and expectations of the vocations students will be entering on graduation. In most work roles, it is crucial that employees are actually competent, and that their certification has been achieved through genuine learning and authentic assessment (e.g. dentistry, plumbing, teaching). Professions like law and medicine have obvious codes of behaviour and ethics, but other industries (e.g. design) operate on the assumption that an individual's work is their own.

Practices to actively prevent cheating

Preparing students for assessment can deter students who are tempted to cheat. Assessments that are well designed and administered will minimise opportunities for cheating.

Provide information and tutorials on how to reference and acknowledge sources and resources. Ensure students understand what is meant by plagiarism and how to avoid being accused of it. Some providers have licences for referencing software (e.g. Endnote). In some cases, this material should be translated into other languages. As students submit initial assignments, tutors can monitor references and acknowledgements and provide advice or direct students to attend tutorials.

Provide information and tutorials on how to carry out study and research relevant to the course/programme, and how to write assignments. Inexperienced students may resort to cheating because they do not know how to undertake their own research or lack the skills or confidence needed to write assignments (academic writing).

Explain to students the measures used to identify plagiarism and cheating. Students need to know that the organisation takes cheating very seriously and has processes to detect dishonesty, which could result in disciplinary action. If students understand how likely they are to be caught they are less likely to push ethical boundaries. For example, knowing written assignments will be checked by screening software should discourage simple pasting from the internet.

- Make it clear to students that their tutors know them well enough to notice any cheating. This requires tutors to understand each student's attitudes, writing style, capabilities and level of confidence. Students are more likely to think they can get away with dishonesty if they are treated impersonally and feel anonymous.
- Set aside time for one-to-one sessions with all students. These sessions signal to students that their tutors know them well. They can also provide evidence of each student's ability and progress. Document outcomes.

Equip tutors to "triangulate" evidence from a range of sources so they can notice irregularities. Some of this evidence can be from formative and summative assessments, and some from informal ongoing observations. If this pattern is established in advance, any tutor suspicions can be backed up with readily available evidence.

- Have a mix of assessment methods. "Uncontrolled" assessments (due by a set date, but completed under no set environment or time conditions) can be used in tandem with "controlled" assessments. Written assignments can be followed by oral presentations. Many providers include written supervised testing largely to verify authenticity of other assessment evidence. Some use both open- and closed-book testing where plagiarism is a concern.
- Build in cross-checking assessment events on the same content – e.g. submitted assessments along with brief written testing and live presentations or one-to-one interviews (even where there is no suspicion of cheating). As well as alerting tutors to possible cheating, these assessment events can provide useful supplementary evidence that a student understands the content. These sorts of events can also make assessment fairer – students

who do not write well (or at length) might reveal deeper understanding when talking about a topic.

- If appropriate, make success in at least one supervised test or examination a condition of success in a programme – e.g. written tests in classrooms or tutorials, one-to-one questioning in on-job training sessions. Not practicable in some tertiary environments, but properly invigilated in-house assessment is inherently more secure and provides authentic samples of student work for comparison if cheating is suspected in subsequent assessments. Even if dishonesty is not identified in other assessments, this requirement can help to ensure that students who rely on cheating are unlikely to be successful in the course.

Written assignments completed in students' own time provide significant opportunity for cheating. Practices described under *Detection* (below) assist in identifying cheating, but a well-designed assignment can reduce opportunities to cheat.

- Set assignments that are as specific as possible, preferably requiring students to use unique data, case studies or situations. Where students are employed, real life workplace situations can be useful.
- Limit the length of time students have access to assessment topics. If they have limited time to complete a task (within appropriate bounds) they have limited opportunity to cheat. Students need to know their assessment schedule but details of some assignments can be announced when they need to start on the assignment. Announcing tasks too far in advance gives students more time to access material that is not their own.
- Build in checkpoints that students know of in advance. These can be brief discussions or brief written reports on activities completed so far. Tutors can monitor the progress of research and writing. Document and file this information.
- Require students to prepare presentations as they write extended assignments. This is, in effect, a dual assignment with material delivered in two media. It should be obvious (especially if questions are encouraged) to identify any discrepancies between knowledge demonstrated in writing and speaking.
- In some programmes it is possible to require that some major assignments are undertaken in class. Some providers require that research is carried out only on the provider's computers – students use unique passwords and internet access can be monitored. This approach is obviously unsuitable for some assignments. Where tasks take more than one classroom session, work can be collected (or saved) at the end of each session and any material brought into the next session checked. This is also an equity measure – students who do not have good study conditions at home are not disadvantaged, and staff can advise inexperienced students on research methods.
- Handwritten assignments (probably completed in class) can be useful to benchmark a student's style, etc. Some small providers use this approach for selected assignments. This can also be helpful to inexperienced students and those who are unfamiliar with computers or with poor keyboard skills.

One-to-one oral assessment can be as efficient as written testing. While one-to-one sessions sound time-consuming, they can take less time than setting and supervising a test and then marking written scripts.

Require students to submit "portfolios" of work. Seeing a collection of a student's work within the one portfolio will make inconsistencies obvious. It also enables managers/tutors to set tasks that rely on personal situations, unique data, etc. Portfolios can be used instead of or in addition to separate assignments.

Vary (or rotate) assessment tasks from year-to-year and course-to-course. One of the most common forms of cheating involves submitting work produced by students in previous courses. Relatively subtle changes to assessment tasks can be enough to alert markers to cheating. Case studies, contexts, data sets and actual items can be changed while

assessing the same outcomes. Some providers have alternative forms of a test and decide which to use on the day.

Online testing can have built-in safeguards. Providers that use online assessments continually re-order tasks – some even have software that can identify patterns of answers for individual students. Some IT providers randomly generate test items on a just-in-time basis. Some providers, who require students to complete tasks on a computer, supply the assessment task on paper, to reduce the chance of in-house assessment files being accessed.

Keep marked assessments locked away. Tutors can ensure that students do not have access to previous marked work – this also provides samples of student work for comparison if cheating is suspected in subsequent assessments.

Insist on rigorous attestations from employers, supervisors, etc for assessments carried out in the workplace. Specify aspects tutors need assurance about – authenticity of work, ability to perform in a range of situations, etc.

Work in a group leading to individual assessment. Strategies are needed to ensure that assessments resulting from group activities reflect the performance of individual students, not the ideas of the stronger members of the group:

- Ensure a proportion of any group assessment reflects individual contributions.
- Set the assessment task after group work has been completed
- Design individual assessment tasks to allow (and even require) each student to offer a particular perspective on the topic.
- Make it clear which aspects of a topic will be completed by the group, and what each individual must submit.
- It can be useful to truncate group activities before groups start to draw conclusions that could be elicited in individual assessments.

Effective practice – detection

Actively detecting and exploring suspicions

Detection should be carried out as a matter of course – active detection alerts tutors that students might have cheated. Tutors should not rely entirely on familiarity with students to arouse suspicions. If tutors do have suspicions, they need techniques to help them take a closer look.

Document whole-organisation detection practices that all staff are expected to implement. Individual tutors should not be left to devise their own approaches. A provider might offer guidance for academic staff on 'what is not cheating', especially in group or tutorial work. Another provider may use a flowchart and written 'script' for staff needing to confront students they suspect of cheating.

Require tutors to record the anti-cheating measures they have taken when they write up their evaluation of a course/programme. This raises staff awareness and allows managers to check that whole-organisation anti-cheating systems and practices are being implemented. Ultimately, the organisation relies on practices implemented by individual tutors to minimise cheating.

Encourage tutors to get to know each student so well that they immediately notice any changes/irregularities in individual student responses/performance. Most providers see changes/irregularities in student responses/performance to be a primary detection tool,

and some equip staff with strategies to do so systematically. This 'pedagogical approach' ensures tutors know about each student's understanding of concepts, writing style, ability to organise ideas, etc. Teaching is about helping students to make progress – tutors cannot do that if they do not know what level students are at. (Some tutors consider they are not teaching well if they do not know their students are cheating.)

- Look for "grade shifts" – unexplained discrepancies between levels of performance in different assessments could indicate dishonest behaviour.
- Attendance issues and participation in class discussion and activities can be key indicators – a student who shows little engagement but submits quality work could arouse suspicions.
- The number of students dealt with by each tutor can be an issue – tutors with fewer than 20 students report no problems in developing familiarity with individuals, but some say classes as large as 35 are manageable[7]. Other strategies are used for larger groups, including having one tutor mark all assignments or the same section in all assignments.
- Use content matching software to validate the authorship of written assignments. Programmmes mentioned by providers include *Turnitin*, *Viper* and *plagscan*. Some tutors enter sections of text into a general internet search engine or use websites such as http://plagiarism.net/ or http://plagiarism-detect.com or http://smallseotools.com/plagiarism-checker/.
- Note the limitations of content matching programmes. Most software programmes can help identify plagiarism from public sources, but not plagiarism from other students or other forms of cheating, such as "ghostwriting".
- Content matching software may be integrated with in-house student management software (e.g. Moodle) to provide seamless information. It is important to train staff and students in using these tools.

In practical assessments, especially on short courses, assess each student in isolation where possible. This is especially relevant if students have been preparing or practising in groups or observing the tutor. Set assessment tasks that are not exactly the same as those demonstrated by the tutor. If students simply need to repeat the assessor's methods they can superficially adjust their performance to suit. (This is more like mimicry than cheating, but it does mean that students can perform in ways that are not entirely authentic.)

Make the most of evidence from formative assessments. Some of these should be completed under supervised conditions so tutors have samples of each student's work they know is authentic. Markers can compare work in summative assessments with evidence from formative assessments.

- Keep a file of student work from formative assessments and/or the tutor's notes/marks. Relatively informal formative assessments can be properly conducted and results documented. Any evidence, even informally collected, can be helpful if there are later suspicions of cheating.
- Conduct brief 'spot tests'. Tutors use tests and quizzes to reinforce and recap learning but this practice will be more useful later for comparing/contrasting the improvement of students. Spontaneous spot testing (e.g. an informal quiz) could be more appropriate with some programmes/groups but even in these cases information about individual students could be noted.

Written assignments completed in students' own time. See suggestions on setting assessment tasks in *Preventing* (above). Additional strategies include:

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[7] Shon, P. C. H., (2006) *How College Students Cheat On In-Class Examinations: Creativity, Strain, and Techniques of Innovation,* Ann Arbor, MI: MPublishing, University of Michigan Library

- Requiring students to submit planning notes, worksheets, raw data records, drafts and study/research notes with final assignments, or ask to see them from time to time as assignments are being completed.
- Requiring students to keep a journal, recording their activities and their thinking as they work toward a finished assignment.
- Interviewing each student after assignments have been submitted – tutors can compare the student's oral responses with work produced in uncontrolled situations.
- Using content matching software (as above).

Marking (making assessment decisions):

- Be familiar with sources students use. If tutors/markers know about websites and other resources students are likely to refer to, they can spot cheating, especially plagiarism.
- Ideally, have all work marked by tutors who are familiar with students. Where large numbers are involved, some providers have each question/item marked by only one marker.
- Make sure all work is marked by the same tutor. Even if they do not know the students well, markers will be able to notice suspicious patterns and repetition. This should also apply to on-job assessments, assignment and group work.
- Be suspicious if student work does not align with the topic set (questions asked). If students seem to be focusing on a different topic, either across the whole assignment or within sections, they could be using work from other students, engaging a 'ghostwriter' or plagiarising sections of work.
- Be alert to signs of 'ghostwriting'. Indicators include breadth of research, writing style, used of generic terms not specifically related to the topic, spelling or terminology not normally used in New Zealand, referencing, formatting or essay construction a student has not demonstrated previously.
- Keep a central file of all electronically-submitted work – markers will be able to compare work from later assessments.
- Ensure that on-job evidence of performance is attested by a responsible senior person – emphasise the importance of the information they are signing off. There may be a tension between getting attestation from a senior person and making sure that person is absolutely sure of the student's performance. The person attesting might need to confirm from co-workers that data collection was authentic.

Set up a system for 'whistle-blowers'. Students who become aware that other students are cheating are likely to disapprove or have a sense of injustice. Emails to senior managers can provide a confidential channel for student complaints about dishonesty. One provider uses a major accounting firm.