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Adaptability of academic integrity procedures and practices in the COVID-19-accelerated transition to online assessment

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The COVID-19 pandemic brought unexpected disruptions to educational practices, forcing universities to deliver lectures, tutorials, exams, and other assessments online. Academics and program managers reacted swiftly to adapt their education programs, managing a crisis that could have harmed Australia's education system. Academic staff rapidly addressed the immediate requirements of delivering classes online, upskilling their digital competencies to continue with minimal disadvantage to students. A perceived problem arising from the need to move to online assessment is an increase in violations of academic integrity. Due to the speed with which the changes took place, there have not necessarily been corresponding changes in the policies and procedures that govern and guide teaching and assessment practices, related to academic integrity. A crisis can open an opportunity for innovation, and this study is a work in progress to investigate how things were done differently to uphold academic integrity in computing courses at Australian universities.

Keywords: academic integrity, computing education, online assessment, COVID-19

Introduction and background

In 2020, due to the COVID-19 pandemic, universities around the world became unable to assess students' learning in traditional invigilated exam settings: face-to-face contact and physical exam sittings were suddenly impossible. In this emergency, where alternative ways of assessment were not readily available or not deemed suitable, many universities opted for online assessments, including online exams. Unfortunately, many online exams were invigilated insufficiently or not at all and were effectively open book and open discussion. As a result, there have been many reports of widespread cheating in online exams (Dendir & Maxwell, 2020), where students have taken the opportunity to access resources or to seek direct help from others either physically present or online. There have been reports of students posting questions during exams to online contract tutoring and/or cheating sites, where requests can be submitted and possibly answered even within the short duration of an online exam (Lancaster & Cotarlan, 2021). In other cases, another person may have completed the entire exam for the student (Reedy, Pfitzner, Rook, & Ellis, 2021).

There are a number of strategies to reduce cheating in exams. For example, Simon (2005) explains a system for watermarking distinct copies of exams, and Fenwick (2017) explains a similar but more sophisticated system to watermark individual assignment specifications in case they subsequently appear on contract cheating websites and can then be identified. Byun et al. (2020) propose a system to determine the authors of online exams by their keystroke activity. Graziano et al. (2019) present a system to automatically detect and bid for assignments posted to contract cheating websites, following which the academics actually write solutions for the students – an approach that does raise certain questions of ethics and of scalability. However, these strategies tend to have limited effectiveness for exam cheating situations where students contract another person to sit the exam for them.

In early 2020, the Australian government passed legislation intended to address contract cheating (Higher Education Standards Panel, 2021). This legislation "is aimed at those who provide and advertise cheating services and not at students". While the legislation is potentially useful, its application is by no means clear cut,

and it is quite possible that no cases will ever be prosecuted under it. On the other hand, the legislation makes it clear that individual students who avail themselves of these services are the responsibility not of this legislation but of their institutions.

Concerns about academic misconduct require Australian universities to establish policies to enforce academic integrity by providing education and training on what constitutes good practice and to mitigate academic integrity risk (Higher Education Standards Framework, 2015; TEQSA, 2017; Bretag, 2017). Most Australian universities have academic integrity policies, which typically require students and staff to uphold principles of academic integrity and set out procedures to be followed if those principles are breached (Bretag et al., 2011). There have been investigations into the development and implementation of academic integrity policies across Australia, and their efficacy and effectiveness for non-text assessments such as computer programs (Simon et al., 2014). Busch and Bilgin (2014) have summarised the attitudes to academic integrity of the students and academic staff at an Australian university.

However, there is little evidence that academic integrity policies and procedures explicitly address the current COVID-19 situation. There might have been a shift in the corresponding practices – for example, in conducting final exams and designing online assessment questions that cannot be easily answered by reference to external sources – due to the rapid changes demanded by COVID-19. In March 2020, academic staff were actively involved in repurposing and redeploying learning and teaching resources and developing new teaching materials to suit remote learning and/or online education delivery modes (Johnston, 2020; Atif et al., 2021). Saunders (2020) notes that the Tertiary Education Quality and Standards Agency (TEQSA) provides a range of strategies to support academics during the COVID-19 pandemic, including "ongoing flexibility with regard to limitations on online delivery", which suggests changing the way we teach and assess students. TEQSA's admonition was that "Providers should assure themselves that changes to program delivery arrangements maintain assessment and quality standards and are appropriately documented" (Saunders, 2020). Most universities followed TEQSA's guidelines and rapidly initiated a business continuity plan to enable students to continue their study. There would certainly have been changes to assessments to fit quality standards for the online delivery, with different universities applying different procedures in accordance with TEQSA's guidelines. However, this may not have been documented in the universities' academic integrity policies. The rapid change of the online transformation applied an approach of agile transformation, where documentation is left to the end. Universities used many different approaches, but there is little evidence of what has been done differently to combat plagiarism, collusion, and contract cheating to uphold academic integrity during COVID-19.

The aim of this research is to investigate the academic integrity procedures for computing courses in light of the move to online assessments used by Australian universities as triggered by COVID-19. This project will produce a comprehensive list of policies and procedures used during COVID-19 in Australian universities for computing courses using public policy analysis and semi-structured interviews, and will identify strong and weak points around the procedures used for addressing academic integrity for online assessments using structured analyses. The research will further analyse the policies and procedures to identify good practices to safeguard academic integrity for online assessments and will supplement this analysis by surveying and interviewing pertinent academic staff.

In this paper, we describe the progress of our research and report findings from the first and second stages of our four-stage project.

Overview of the project

This project uses a mixed-methods research approach, collecting qualitative and quantitative data to identify approaches employed by universities to prevent, detect, and handle cheating in online assessments, and to determine how effective these approaches have been. The research investigates policies and procedures for preventing and dealing with academic dishonesty in Australian universities, focusing on coursework programs rather than research programs. The team is developing questionnaires in order to identify the strengths and weaknesses of the academic integrity procedures used during COVID-19 to address academic integrity for online exams and assessments in computing courses. This research is being conducted in four stages:

Stage 1: Sourcing and reviewing relevant academic integrity policies and procedures from Australian universities.
Stage 2: Interviewing key academics of computing schools/departments to determine how they have addressed academic integrity issues in response to the pandemic.

Stage 3: Surveying academic staff in computing, with questions guided by the interview analysis, to identify practices that have helped ensure academic integrity in the shift to online assessment.
Stage 4: Conducting follow-up interviews with selected participants from the survey.

In this paper, we are reporting on the preliminary findings of stage 1 and stage 2.

Preliminary findings of stage 1: sourcing and reviewing relevant academic integrity policies and procedures from Australian Universities

The policies of most universities are available on their public websites. The academic integrity policies and documents of 41 Australian universities (40 public and one private) were collated and reviewed based on the following information search:

- Does the document provide a specific listing of policies and procedures for online assessment?
- Does the document appear to acknowledge the possibility of online exams? If so, how does it describe any integrity precautions related to those exams?

Out of 41 universities, 38 offer online/distance education for computing courses, four offer most of their computing courses in online/distance mode, and only one offers no computing courses in online/distance mode. The majority of the policies do not distinguish between online and offline assessments. Only five universities (one each in Queensland, Victoria, the Australian Capital Territory, South Australia, and New South Wales) have policies that acknowledge the possibility of online exams. We were able to answer both questions in the affirmative for only three of the 41 universities, from ACT, NSW, and SA.

Many of the policies are very uniform across the universities, with few major differences. Most of the universities use blanket terminology to cover exams and other assessment tasks. Many do not specify any policy differences between online and face-to-face assessment tasks. The inference appears to be that the rules and regulations that govern general academic integrity are to be used for all assessment tasks, including online tasks.

The universities that have been working longer with distance education tend to have a policy clause mentioning that assessment items may include an online component. However, this acknowledgment of online assessment does not necessarily extend to detailed policies specific to online assessment.

Only three of the 41 universities list detailed procedures for running online assessments and have explicit policies and/or procedures for addressing academic misconduct in such assessments. The majority of universities mention online assessment but do not have different policies or approaches to handle 'e-assessments'.

Preliminary findings of stage 2: interviewing academics of computing schools/departments to determine how they have addressed academic integrity issues in their response to the pandemic

We have so far interviewed six academics teaching in computing courses at Australian universities to determine how they have addressed the change to assessments to fit the online environment during COVID-19. The interviews identified that at some of the universities, learning and teaching professional staff provided support for academic staff including workshops and seminars; that learning design and innovation teams helped staff in designing online assessments and teaching resources; and that discipline-based teams for peer support were established to address the new situation. However, there are universities where not much support was provided and teaching staff had to adapt without any prior experience of online teaching and learning, such as in summer schools. During COVID-19, essentially all instruction and assessment went online through learning management systems (LMS) such as Moodle and Blackboard, including formerly face-to-face assessments such as exams. One of the major differences is that formal invigilated exams, which were not open-book, were replaced by non-invigilated open-book exams provided through the LMS. There was an expanded use of quizzes and tests, and vivas (post-exam interviews) became a common examination tool. Here are some of the challenges identified for this move online.

Academics

- **Lack of experience**. Many teaching staff had little experience with their LMS prior to COVID-19 and found the move to online delivery challenging.

- **Inadequate support**. Not all universities provided adequate support for the transition to online delivery.
- **Awareness**. Academics became more aware of cheating in various forms, including collusion both on assignments and on exams, and contract cheating.

Exams

- **No time to change exam format**. Because the first term of 2020 was already under way when COVID-19 hit, courses had to proceed with the assessments that had already been approved, and migrating those assessments online was generally challenging.
- **New types of question needed**. Types of exam question had to be changed: questions that can legitimately be asked in a non-open-book exam can become trivial in an open-book context, so many useful question types had to be discarded, and new questions had to be devised that could not be readily answered by a simple web search.
- **New questions needed**. When an exam has been set online, it must be assumed that every question has entered the public domain; therefore, no parts of any exams can be used in subsequent exams, whether they be a supplementary exam for the same offering or an exam for a different offering. This can entail extensive additional work for teaching staff.
- **Exam scheduling**. Exam scheduling became more difficult, sometimes having to account for students in different time zones. In some cases, the scheduling devolved from a central office to individual departments, adding further to the workload of academics.

Students

- **Poor student engagement**. Some students showed less engagement in online classes than in face-to-face classes; some did not turn on their cameras and never spoke or engaged in the text-based chat.
- **Issues with group work**. Facilitation of group work in an online context often involved additional and sometimes innovative work, including adoption of more technology-based group tools. Students also found it challenging to transfer group assessment tasks to the online space.
- **Inadequate software and/or hardware**. Students were not all equipped with the same resources, in terms of software and even hardware – if, for example, they were required to have a webcam for interview purposes.

Conclusion and future work

Our findings from stage 1 indicate that only a handful of Australian universities provide specific policies and procedures for online assessment and acknowledge the possibility of online exams and any integrity precautions related to those exams.

Preliminary findings from stage 2 suggest that the abrupt move to online delivery and assessment had many consequences, some of which are listed in the previous section. Following this stage, work will begin on a survey to be circulated to computing educators across Australia.

Once the work is complete, we expect to be able to disseminate:

- A list of strategies, and measures of the perceived and actual effectiveness of the strategies, which will be linked to existing theories and models in the field of cheating prevention and detection and will be used to extend them.
- Anecdotal examples of people's stories of cheating, how it was detected, and its outcomes, which we hope will lead to the formation of an online community of Australian university computing educators focused on academic integrity.
- A list of good education practices adopted and adapted by computing staff at Australian universities during COVID-19.

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