

## **Challenges of running online exams and preventing academic dishonesty during the Covid-19 pandemic**

**Luke Peh Lu Chang**

Singapore University of Social Sciences, Singapore

**Sabina Cerimagic**

University of Sydney, Australia

**Sheila Conejos**

Singapore University of Social Sciences, Singapore

**Keywords:** online proctoring; open book assessment; academic honesty; Covid-19.

### ***The challenge***

The unprecedented and unexpected changes caused by Covid-19 called for innovative solutions to address online assessment challenges to ensure academic integrity. This reflection looks at two universities from Asia and Australia, comparing how they addressed the challenges of conducting online assessments and related issues brought about by Covid-19. Both universities have converted their on-campus assessment to online assessments during the pandemic and will continue with this in the post Covid-19 period. The challenges that University A experienced included:

- Occurrence of several whistle-blowing cases, where students informed the school that their classmates were colluding on WhatsApp groups or video communications such as Zoom.
- Students outsourcing their assignments to 'ghost-writers' or plagiarising heavily from websites such as Coursehero or Chegg, which provided model answers for their assignments.
- Student concerns regarding stability in online exam delivery and privacy trepidations.

Similarly, the challenge for University B was how to run online exams and how to minimise the occurrence of academic dishonesty in the face of a significant rise in the number of cases reported in 2020, indicating a total of 5,172 incidents (36.9% assessments).

### ***The response***

University A was able to roll out its virtual classes swiftly and put some online examination assessment strategies in place. The university adopted Timed Online Assignments (TOA) in place of in-campus exams to promote and monitor academic integrity. For high-stake exams requiring professional certifications from accreditation bodies, such as the fire safety management course, proctoring software, such as ProctorU, was incorporated with video analytics used to invigilate the exam proceedings. Cases where students' behaviour was suspicious, such as showing roving eyes or moving out of reach of the camera, were flagged out to faculty. In numerous instances, students were called up for investigation or explanation through video communications such as Zoom (Thiagarajan et al., 2020).

Since the TOA is a contingency and stop-gap measure and is not fool-proof in terms of the credibility of assessment robustness, the lecturers were instructed to set more challenging, open-book styled TOAs to make colluding or cheating more complex and more detectable or evident. In addition, data analytics were used to identify students who significantly outperformed based on expectations.

Some countermeasures were undertaken for Level 1 courses that are considered susceptible to cheating, such as:

- a) A list of students with TOA marks higher than continuous assessments was sent to their respective Head of Programmes to run the TOA against the AI programme (e.g., PlagScan<sup>1</sup>).
- b) Students suspected of cheating were invited for oral exams to demonstrate their comprehension and competency.
- c) Other applications which assist in detecting plagiarism and cheating that involves ghost-writers (PlagScan, NeoNeuro and Ouriginal) were used. These applications

---

<sup>1</sup> Website link for proctoring software: PlagScan - <https://www.plagscan.com/en/>.

trace similarities and see the usage of specific or foreign words and changes in style (e.g., tonality, sentence structure, expression, argumentation, grammar, and format).

University B utilised the proctoring software Atomic Jolt and ProctorU to facilitate digital exam conversion and to supervise remote invigilated and non-invigilated exams between 2020 and mid-2021. In addition, Canvas (the university's learning and management system (LMS)) was used to deliver digital examinations with external proctoring. The transition to online exams included:

- The conversion of paper exams.
- Re-scheduling of online exams.
- Delivery of online exams (on-campus, remote, invigilated/non-invigilated).
- Policy changes.
- Changes to classroom layout.

The university found when working with learning development that it was important to build in and emphasise academic integrity in the modules (Rundle, Curtis and Clare, 2019). For example, students are educated about academic dishonesty and the consequences of cheating before exams are run. All students must complete the Academic Honesty Education Module at the beginning of the semester aside from attending academic integrity consultations with the library's peer learning advisors who provide student advice on referencing issues.

Regarding the concerns over stability in exam delivery and privacy trepidations raised by students, University B chose ProctorU and Atomic Jolt due to their ability to deliver a working online examination solution in a brief timeframe. The university also piloted Cadmus in 2021, a user-friendly platform that can be used for assignments and exams, which integrates easily with Canvas. Cadmus helps academics design authentic, learning-centred assessments with templates; the platform also offers a scaffolded assessment experience. Additionally, Cadmus offers learning analytics at every level: from individual student data to faculty-level reporting.

Before students sit their exam using Cadmus, learning developers and academics work together to set up a practice exam in Cadmus, where students are taken through Cadmus

to familiarise themselves with the platform; this practice also allows learning developers to iron out any technical issues before the actual exam is run. Furthermore, University B moved away from final exams and instead staggered assessments throughout the semester, with more frequent and smaller assessments. This ensured that students received more frequent feedback and knew how they performed, enabling them to improve during the semester (Cerimagic and Khanna, 2020).

## ***Recommendations***

During the pandemic, converting courses to online teaching and preparing online assessments using proctoring software was time-consuming. Academic dishonesty was a real challenge, especially when the team dealing with this issue was understaffed. Both universities experienced challenges in maintaining academic integrity in the context of online assessment, even with the use of technology and other policing strategies.

The use of proctoring software to roll out and manage online exams to prevent plagiarism and collusion during the pandemic had a few substantial limitations (Smith et al., 2017; Cerimagic and Hasan, 2019), including insufficient question types, inadequate analysis, lack of collaborative question bank function, and limited applicability to assessments that are more analytical or technical. Proctoring software offers some benefits but exploring learning development strategies that will improve online assessments and provide alternative solutions that prevent academic dishonesty is still a better option.

Learning development plays a significant role in ensuring academic integrity for online assessments aside from proctoring software. For instance, there is the need to develop authentic online evaluations that should include scenario-based questions or introduce case studies that require a higher order of thinking and avoid questions that need a listing of answers.

## ***References***

Cerimagic, S. and Hasan, R. (2019) 'Online exam vigilantes at Australian universities: student academic fraudulence and the role of universities to counteract', *Universal*

*Journal of Educational Research*, 7(4), pp.929-936.

<https://doi.org/10.13189/ujer.2019.070403>.

Cerimagic, S. and Khanna, P. (2020) 'Transforming assessment: critical reflections around resolving tensions between assessment for learning and of learning', *Australasian Society for Computers in Learning in Tertiary Education (ASCILITE), 2020 Conference*. University of New England, Armidale, NSW 30 November-1 December.

Rundle, K., Curtis, G. J. and Clare, J. (2019) 'Why students don't engage in contract cheating', *Frontiers in Psychology*. <https://doi.org/10.3389/fpsyg.2019.02229>.

Smith, E., Clarke, L., Carmona, P. and Cerimagic, S. (2017) 'Academic fraudulence in online degrees and exams at Australian universities', *International Journal of Research and Development Organization*, 3(2), pp.108-119.

Thiagarajan, L. B., Zhi, L. J., Peh, L. C. L. and Low, W. P. (2020) 'Continuing STEM education amid disruption due to pandemic', *eLearning Forum Asia 2020*. The Chinese University of Hong Kong, Hong Kong 7-8 December.

### **Author details**

Luke Lu Chang Peh is the Vice Dean of the School of Science and Technology, Singapore University of Social Sciences. He is responsible for the quality assurance and accreditation of his school's programmes in the Engineering, ICT & Digital Media, and Built Environment clusters. His research interests are in Integrated Digital Delivery and Smart Buildings. He co-authored 'A review and scientometric analysis of global building information modelling (bim) research in the architecture, engineering and construction (AEC) industry' and won the Best Paper Award from the *Buildings* journal.

Sabina Cerimagic is a Senior Lecturer and Deputy Academic Director of the Business Co-Design (BCD) team, at the Sydney Business School, at the University of Sydney. Sabina is supervising the BCD team and working closely with the team to ensure that agreed projects are delivered on time, to a high-quality standard, on budget and to the agreed project specifications. Her main areas of research are: project management, change

management, leadership and motivation, cross-cultural project management and training, curriculum redesign, curriculum renewal through design thinking, systems thinking, design-based research and pedagogy in education and technology integration.

Sheila Conejos is a Senior Lecturer and Head of Programme of the BSc Facilities Management, BSc Facilities and Events Management, and Graduate Diploma in Facilities Management programmes of the School of Science and Technology in the Singapore University of Social Sciences. Sheila has more than 25 years of both professional and academic experience as a trained architect, urban planner, forensic architect, urban/building conservator, facility manager, and professional and sustainable development specialist. She is an active researcher and has published two books, a book chapter, and in a number of journals related to sustainable development and architecture.