

# Australian Business Deans Council Project: Invigilated and non-invigilated online assessments

## *Annotated Bibliography: Investigating Cost-effective, Scalable Online Assessments to Assure Academic Integrity, Privacy, and Access Equity*

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# **Annotated Bibliography: Investigating Cost-effective, Scalable Online Assessments to Assure Academic Integrity, Privacy, and Access Equity**

## **Index**

### **A. Case studies**

1. Linden, K., & Gonzalez, P. (2021). Zoom invigilated exams: A protocol for rapid adoption to remote examinations. *British Journal of Educational Technology*, 52(4), 1323–1337.
2. Cramp, J., Medlin, J., Lake, P., Sharpe, C., & Lake, P. (2019). Lessons learned from implementing remotely invigilated online exams. *Journal of University Teaching and Learning Practice*, 16(1), 137–155.
3. Okada, A., Noguera, I., Alexieva, L., Rozeva, A., Kocdar, S., Brouns, F., Ladonlahti, T., Whitelock, D., & Guerrero-Roldán, A. (2019). Pedagogical approaches for e-assessment with authentication and authorship verification in Higher Education. *British Journal of Educational Technology*, 50(6), 3264–3282.
4. James, L. T., & Casidy, R. (2018). Authentic assessment in business education: Its effects on student satisfaction and promoting behaviour. *Studies in Higher Education*, 43(3), 401–415.
5. Moore, C. P. (2018). Adding authenticity to controlled conditions assessment: Introduction of an online, open book, essay based exam. *International Journal of Educational Technology in Higher Education*, 15(1), 26.
6. Debuse, J. C. W., & Lawley, M. (2016). Benefits and drawbacks of computer-based assessment and feedback systems: Student and educator perspectives. *British Journal of Educational Technology*, 47(2), 294–301.
7. James, R. (2016). Tertiary student attitudes to invigilated, online summative examinations. *International Journal of Educational Technology in Higher Education*, 13(1), 19.
8. Ladyshevsky, R. K. (2015). Post-graduate student performance in ‘supervised in-class’ vs. ‘unsupervised online’ multiple choice tests: Implications for cheating and test security. *Assessment & Evaluation in Higher Education*, 40(7), 883–897.
9. Myyry, L., & Joutsenvirta, T. (2015). Open-book, open-web online examinations: Developing examination practices to support university students’ learning and self-efficacy. *Active Learning in Higher Education*, 16(2), 119–132.
10. Hay, P. J., Engstrom, C., Green, A., Friis, P., Dickens, S., & Macdonald, D. (2013). Promoting assessment efficacy through an integrated system for online clinical assessment of practical skills. *Assessment & Evaluation in Higher Education*, 38(5), 520–535.
11. Douglas, M., Wilson, J., & Ennis, S. (2012). Multiple-choice question tests: A convenient, flexible and effective learning tool? A case study. *Innovations in Education and Teaching International*, 49(2), 111–121.
12. Sullivan, D. P. (2016). An Integrated Approach to Preempt Cheating on Asynchronous, Objective, Online Assessments in Graduate Business Classes. *Online Learning*, 20(3).

### **B. Surveys**

1. Harper, R., Bretag, T., & Rundle, K. (2021). Detecting contract cheating: Examining the role of assessment type. *Higher Education Research & Development*, 40(2), 263–278.
2. Reedy, A., Pfitzner, D., Rook, L., & Ellis, L. (2021). Responding to the COVID-19 emergency: Student and academic staff perceptions of academic integrity in the transition to online exams at three Australian universities. *International Journal for Educational Integrity*, 17(1).
3. Bretag, T., Harper, R., Burton, M., Ellis, C., Newton, P., van Haeringen, K., Saddiqui, S., & Rozenberg, P. (2019). Contract cheating and assessment design: Exploring the relationship. *Assessment & Evaluation in Higher Education*, 44(5), 676–691.

4. Bretag, T., Harper, R., Burton, M., Ellis, C., Newton, P., Rozenberg, P., Saddiqui, S., & van Haeringen, K. (2019). Contract cheating: A survey of Australian university students. *Studies in Higher Education, 44*(11), 1837–1856.
5. Rolim, C., & Isaias, P. (2019). Examining the use of e-assessment in higher education: Teachers and students' viewpoints. *British Journal of Educational Technology, 50*(4), 1785–1800.
6. Bennett, S., Dawson, P., Bearman, M., Molloy, E., & Boud, D. (2017). How technology shapes assessment design: Findings from a study of university teachers: How technology shapes assessment design. *British Journal of Educational Technology, 48*(2), 672–682.
7. Vos, L. (2015). Simulation games in business and marketing education: How educators assess student learning from simulations. *The International Journal of Management Education, 13*(1), 57–74.
8. Rahman, A. (2021). Using Students' Experience to Derive Effectiveness of COVID-19-Lockdown-Induced Emergency Online Learning at Undergraduate Level: Evidence from Assam, India. *Higher Education for the Future, 8*(1), 71–89.
9. Ellis, C., van Haeringen, K., Harper, R., Bretag, T., Zucker, I., McBride, S., Rozenberg, P., Newton, P., & Saddiqui, S. (2020). Does authentic assessment assure academic integrity? Evidence from contract cheating data. *Higher Education Research & Development, 39*(3), 454–469.

### **C. Literature reviews & discussions**

1. Holden, O. L., Norris, M. E., & Kuhlmeier, V. A. (2021). Academic Integrity in Online Assessment: A Research Review. *Frontiers in Education, 6*, 639814.
2. Bearman, M., Dawson, P., Ajjawi, R., Tai, J., & Boud, D. (Eds.). (2020). *Re-imagining University Assessment in a Digital World* (Vol. 7). Springer International Publishing.
3. Brown, S., & Sambell, K. (2020). The changing landscape of assessment: some possible replacements for unseen time-constrained face-to-face invigilated exams. URL: <<https://sally-brown.net/2020/04/02/kay-sambell-sally-brown-coronavirus-contingency-suggestions-for-replacing-on-site-exams/>>.
4. Dawson, P. (2020). *Defending Assessment Security in a Digital World: Preventing E-Cheating and Supporting Academic Integrity in Higher Education* (1st ed.). Routledge.
5. Brown, S., & Sambell, K. (2020). Fifty tips for replacements for time-constrained, invigilate on-site exams. URL: <<https://sally-brown.net/2020/04/02/kay-sambell-sally-brown-coronavirus-contingency-suggestions-for-replacing-on-site-exams/>>.
6. Brown, S., & Sambell, K. (2020). Contingency-planning: exploring rapid alternatives to face-to-face assessment. URL: <<https://sally-brown.net/2020/04/02/kay-sambell-sally-brown-coronavirus-contingency-suggestions-for-replacing-on-site-exams/>>.
7. Butler-Henderson, K., & Crawford, J. (2020). A systematic review of online examinations: A pedagogical innovation for scalable authentication and integrity. *Computers & Education, 159*, 104024.
8. Bengtsson, L. (2019). Take-Home Exams in Higher Education: A Systematic Review. *Education Sciences, 9*(4), 267.
9. Boitshwarelo, B., Reedy, A. K., & Billany, T. (2017). Envisioning the use of online tests in assessing twenty-first century learning: A literature review. *Research and Practice in Technology Enhanced Learning, 12*(1), 16.
10. Carless, D., Bridges, S. M., Chan, C. K. Y., & Glofcheski, R. (Eds.). (2017). *Scaling up Assessment for Learning in Higher Education* (Vol. 5). Springer Singapore.
11. Atkinson, D., Nau, S. Z., & Symons, C. (2016). *Ten Years in the Academic Integrity Trenches: Experiences and Issues*. 27, 12.
12. Caldwell, C. (2010). A Ten-Step Model for Academic Integrity: A Positive Approach for Business Schools. *Journal of Business Ethics, 92*(1), 1–13.

### **D. Reports and other resources**

1. Tai, J., Ajjawi, R., Bearman, M., Dargush, J., Dracup, M., Harris, L., & Mahoney, P. (2022). Re-imagining exams: How do assessment adjustments impact on inclusion? National Centre for Student Equity in Higher Education.
2. Atherton, G. (2021). *Perspectives on the challenges to access and equity in Higher Education across the world in the context of COVID*. National Education Opportunities Network (UK).
3. Centre for Research in Assessment and Digital Learning. (2020). Ensuring academic integrity and assessment security with redesigned online delivery.
4. Stone, Cathy. (2017). *Opportunity through online learning: Improving student access, participation and success in higher education. National Guidelines*. National Centre for Equity in Higher Education.

## Summary

### A. Case studies

1. Linden, K., & Gonzalez, P. (2021). Zoom invigilated exams: A protocol for rapid adoption to remote examinations. *British Journal of Educational Technology*, 52(4), 1323–1337. <https://doi.org/10.1111/bjet.13109>

The authors conducted a high-stakes trial zoom-invigilated examination (N=1728), followed by a post-exam survey, with the aim of evaluating the effectiveness of the format and to reflect upon the student experience. The study found that average student marks for the exams decreased slightly, but not statistically significantly, when taken online (versus paper-based). The authors detail a protocol for a “student-centred” approach to remote examination, including providing tailored technical support, and a methodology for familiarising students to online meetings. This study provides a useful positive exemplar for online examinations that addresses the issues of academic integrity and student experience.

2. Cramp, J., Medlin, J., Lake, P., Sharpe, C., & Lake, P. (2019). Lessons learned from implementing remotely invigilated online exams. *Journal of University Teaching and Learning Practice*, 16(1), 137–155. <https://doi.org/10.53761/1.16.1.10>

The authors conducted workshops with developers and administrators of one Australian university’s online teaching team to reflect upon their experience implementing and evaluating a Remotely-Invigilated Online Exam. The authors use cognitive load theory to discuss lessons learned in respect of exam design (including the importance of exam navigation, question comprehension, multitasking, authenticity response input, communication). The paper provides positive exemplars for online examination that address the issue of student experience, summarised in Table 2: Actionable insights to consider when implementing remotely invigilated online exams (pp. 13-15).

3. Okada, A., Noguera, I., Alexieva, L., Rozeva, A., Kocdar, S., Brouns, F., Ladonlahti, T., Whitelock, D., & Guerrero-Roldán, A. (2019). Pedagogical approaches for e-assessment with authentication and authorship verification in Higher Education. *British Journal of Educational Technology*, 50(6), 3264–3282. <https://doi.org/10.1111/bjet.12733>

The authors examined the practices of 108 teaching staff who used an online assessment authentication system pilot which involved instruments including face, voice, keystroke recognition, forensic analysis and plagiarism detection. The authors provide a breakdown of assessment types according to which authentication method was applicable, and qualitative evidence from teacher questionnaire respondents regarding their experiences (Table 6, p. 3273). The authors also make recommendations to improve the application of authentication methods according to student concerns including equity of access, student experience, academic integrity, among others. However, the study was limited in its generalisability given its software-specificity ('TeSLA instruments', which can be integrated into any institutional virtual learning environment, p. 3266).

4. James, L. T., & Casidy, R. (2018). Authentic assessment in business education: Its effects on student satisfaction and promoting behaviour. *Studies in Higher Education*, 43(3), 401–415. <https://doi.org/10.1080/03075079.2016.1165659>

The authors implemented an authentic trial assessment using scenario-based questions and surveyed the undergraduate business students (120) regarding their experiences. The authors found that authentic assessment was positively related to student satisfaction and promoting behaviour, and that the level of career-orientation of students mediated the impact of assessment authenticity on student satisfaction. However, the study's use of paper-based assessment limited its applicability to online environments.

5. Moore, C. P. (2018). Adding authenticity to controlled conditions assessment: Introduction of an online, open book, essay based exam. *International Journal of Educational Technology in Higher Education*, 15(1), 26. <https://doi.org/10.1186/s41239-018-0108-z>

The author conducted a trial online open-book, essay-based examination (88 students) with the aim of creating an exam that closely mimics a working environment situation yet remains under controlled conditions and robust as an assessment model. The exam format allowed students a 3-hour window to complete a single essay-style question, enabling them a longer timeframe than usual for paper-based written assessments. The assessment protocol also provided for a workshop and mock examination six weeks prior to the exam date. Feedback was provided through the Word review tool. The results showed an improved in average mark versus previous paper-based examinations, with student feedback highlighting a better experience including ability to organise research material to evidence their knowledge, as well as improved feedback processes. The study provides a positive exemplar regarding a form of written online examination with respect to academic integrity, improved student experience, and improved quality of feedback concerning how grade decisions were reached.

6. Debusse, J. C. W., & Lawley, M. (2016). Benefits and drawbacks of computer-based assessment and feedback systems: Student and educator perspectives. *British Journal of Educational Technology*, 47(2), 294–301. <https://doi.org/10.1111/bjet.12232>

The authors conducted an online assessment (246 students, 6 staff) with a follow-up survey to examine the benefits and drawbacks of a computer-based assessment and feedback production system (specifically SuperMarkIt) to both students and educators. SuperMarkIt enables staff to set up marking sheets with rows and columns for students and criteria and enabling comment reuse among other efficiency-enhancing tools. The assessments were set in courses which ranged across business-related fields including marketing, law, tourism, among others, and their formats included reports, essays and exams. Post-assessment surveys of staff showed that they found SuperMarkIt to be an overall improvement and specifically providing advantages in error reduction, feedback editing, feedback efficiency, time saving measures as well as increased feedback. Students found feedback to be generally improved including finding feedback personalised and varied, more legible, and assisting them increase their understanding. The study provides a valuable insight into a comparison between student and educators' experience with online feedback.

7. James, R. (2016). Tertiary student attitudes to invigilated, online summative examinations. *International Journal of Educational Technology in Higher Education*, 13(1), 19. <https://doi.org/10.1186/s41239-016-0015-0>

The authors implemented a trial invigilated online summative examination and subsequently surveyed respondents (N=221) regarding their perception of their experience of the assessment. The exam was a straight transposal of a paper examination onto an online platform, and included MCQs, short answers and short-essay length responses. The authors found that a prevailing concern of first-year students regarding take-up of the online exam was technical difficulties and internet connectivity, both the result of poor digital infrastructure provided by the administering institution. The authors also found that student concerns over security and privacy were minimal. The study provides negative exemplars of online examination practice regarding student experience.

8. Ladyshevsky, R. K. (2015). Post-graduate student performance in 'supervised in-class' vs. 'unsupervised online' multiple choice tests: Implications for cheating and test security. *Assessment & Evaluation in Higher Education*, 40(7), 883–897. <https://doi.org/10.1080/02602938.2014.956683>

The author conducted a sequence of online multiple-choice question trial examinations (N=250) to explore whether unsupervised online testing leads to increases in possible student cheating by examining scores across time. The questions were scenario-based and involved critical-thinking applications to business contexts in order to generate greater authenticity. The trials' results add support to other studies' findings of no significant differences in test scores between supervised in-class versus comparable unsupervised online tests. The study provides positive exemplars for online examinations regarding academic integrity.

9. Myyry, L., & Joutsenvirta, T. (2015). Open-book, open-web online examinations: Developing examination practices to support university students' learning and self-

efficacy. *Active Learning in Higher Education*, 16(2), 119–132.  
<https://doi.org/10.1177/1469787415574053>

The authors conducted an online survey of students (N=110) following an open-book, pen-web online examination in order to examine students' perceptions of their learning in an open-web, open-book examination, including any adjustments to learning strategies. The study finds that students self-report greater authenticity in the online exam format, better student experience, and a shift in learning strategies to deeper learning styles.

10. Hay, P. J., Engstrom, C., Green, A., Friis, P., Dickens, S., & Macdonald, D. (2013). Promoting assessment efficacy through an integrated system for online clinical assessment of practical skills. *Assessment & Evaluation in Higher Education*, 38(5), 520–535. <https://doi.org/10.1080/02602938.2012.658019>

The authors conduct an online clinical assessment of practical skills within a university medical programme and evaluate the students' (N=40) outcomes. The authors provide a protocol ('eCAPS') which combines synchronous and asynchronous formative (video uploads) and summative (online skype video assessment) assessments and feedback. Feedback was provided to small groups of students upon one performance randomly selected from their submissions. Students positively evaluated the flexibility and accessibility of shared video feedback offered online, while the unassisted inter-student dialogue model enabled promotion of learning outcomes and increased cost efficiency of the administration and delivery of the assessments. The online assessment response repository provided targeted annotated video feedback which effectively prompted further engagement with key material to make adjustments to practical performances.

11. Douglas, M., Wilson, J., & Ennis, S. (2012). Multiple-choice question tests: A convenient, flexible and effective learning tool? A case study. *Innovations in Education and Teaching International*, 49(2), 111–121. <https://doi.org/10.1080/14703297.2012.677596>

The authors examine a case study in which they piloted open-book online multiple-choice tests delivered formatively and summatively and evaluate the undergraduate marketing students' (N=264) performance as well as survey their experiences. The MCTs were delivered via an institutional VLE using a question bank provided by the class textbook publisher. Six MCTs were delivered including practice and formal tests, each containing formative and summative elements. Students could retake the tests multiple times and were provided immediate grading and feedback upon completion. Utilising the survey responses, the authors provide recommendations that MCTs are best employed in combination with other forms of assessment, typically at a foundational level, and with an awareness of limited potential to encourage deeper learning.

12. Sullivan, D. P. (2016). An Integrated Approach to Preempt Cheating on Asynchronous, Objective, Online Assessments in Graduate Business Classes. *Online Learning*, 20(3). <https://doi.org/10.24059/olj.v20i3.650>

The study details one assessment protocol aimed at securing academic integrity of asynchronous online quizzes with a cohort of postgraduate business students (N=178). A range of measures taken to manage students' perception of potential for cheating are detailed at Table 1 (p. 5), including question randomisation, continuous question development, multiple quiz attempts, open notes, question format/sequence/type/frequency. Results of the post-assessment survey showed that most respondents found retaking the quiz reduced the utility of collusion and found the sharing of quiz questions with classmates to be impractical. The discussion also notes that this assessment protocol provided an efficiently administered method of online assessment through multiple online quizzes with potential for scalability.

### *Other*

Dendir, S., & Maxwell, R. S. (2020). Cheating in online courses: Evidence from online proctoring. *Computers in Human Behavior Reports*, 2, 100033. <https://doi.org/10.1016/j.chbr.2020.100033>

Khan, S., & Khan, R. A. (2019). Online assessments: Exploring perspectives of university students. *Education and Information Technologies*, 24(1), 661–677. <https://doi.org/10.1007/s10639-018-9797-0>

Munoz, A., Mackay, J.. (2019). An online testing design choice typology towards cheating threat minimisation. *Journal of University Teaching and Learning Practice*, 16(3), 54–70. <https://doi.org/10.53761/1.16.3.5>

Dawson, P., & Sutherland-Smith, W. (2018). Can markers detect contract cheating? Results from a pilot study. *Assessment & Evaluation in Higher Education*, 43(2), 286–293. <https://doi.org/10.1080/02602938.2017.1336746>

Boevé, A. J., Meijer, R. R., Albers, C. J., Beetsma, Y., & Bosker, R. J. (2015). Introducing Computer-Based Testing in High-Stakes Exams in Higher Education: Results of a Field Experiment. *PLOS ONE*, 10(12), e0143616. <https://doi.org/10.1371/journal.pone.0143616>

Fask, A., Englander, F., & Wang, Z. (2014). Do Online Exams Facilitate Cheating? An Experiment Designed to Separate Possible Cheating from the Effect of the Online Test Taking Environment. *Journal of Academic Ethics*, 12(2), 101–112. <https://doi.org/10.1007/s10805-014-9207-1>

### **B. Surveys**

1. Harper, R., Bretag, T., & Rundle, K. (2021). Detecting contract cheating: Examining the role of assessment type. *Higher Education Research & Development*, 40(2), 263–278. <https://doi.org/10.1080/07294360.2020.1724899>



The authors analyse data from a mass survey of students (14086) and academics (1147) at Australian universities to explore the relationship between types of assignments and self-reported engagement and detection of third-party cheating (Table 1, p. 6). The authors identify a disjuncture between staff and student detection rates, finding that while students report third-party cheating most commonly in exams, staff most commonly detect it occurring in assignments. The authors also provide a discussion of possible explanations for correlations between relative cheating and detection rates for each exam type. They suggest that educators and invigilators, better experienced with detecting cheating in MCQ exams, tend to erroneously assume that in-person demonstrations of knowledge and skill (i.e. oral presentations) are inherently secure, despite illicit exam assistance being commonplace. The authors also find that high cheating *and* detection rates for written assignments is likely due to the widespread availability of effective text-matching software for take home assessments, as well as educators' ability to use student's prior writing samples to detect outsourced invigilated written assignments.

2. Reedy, A., Pfitzner, D., Rook, L., & Ellis, L. (2021). Responding to the COVID-19 emergency: Student and academic staff perceptions of academic integrity in the transition to online exams at three Australian universities. *International Journal for Educational Integrity*, 17(1). <https://doi.org/10.1007/s40979-021-00075-9>

The authors conducted a survey of students (2239) and staff (73) of Australian universities regarding their perceptions of how online examinations affected academic integrity during the COVID-19 pandemic. Their findings suggest that students found it more difficult to cheat in online exams and alternative assessments relative to traditional invigilated exams, while staff perceived the opposing view. The authors also discuss a typology of cheating as perceived by staff and students (access to resources, collusion, impersonation, contract cheating), the factors enabling cheating (lack of supervision), and perceptions of deterrents to cheating (monitoring, student beliefs, question design, exam duration, deployment and marking practices). They also provide recommendations in light of these findings. The study was limited by a lack of specification regarding the type of online assessment taken by the students and the kind of invigilation practices involved.

3. Bretag, T., Harper, R., Burton, M., Ellis, C., Newton, P., van Haeringen, K., Saddiqui, S., & Rozenberg, P. (2019). Contract cheating and assessment design: Exploring the relationship. *Assessment & Evaluation in Higher Education*, 44(5), 676–691. <https://doi.org/10.1080/02602938.2018.1527892>

The authors analyse data from a mass survey of students (14086) and academics (1147) at Australian universities to explore the relationship between contract cheating and assessment design. Their findings highlight the factors that contribute to contract cheating (non-English language backgrounds, students dissatisfied with learning environment), including the influence of assessment types (authentic assessment types remained moderately susceptible). They

conclude that the conditions under which assessment takes place is equally if not more influential upon the likelihood of cheating than the assessment's authenticity.

4. Bretag, T., Harper, R., Burton, M., Ellis, C., Newton, P., Rozenberg, P., Saddiqui, S., & van Haeringen, K. (2019). Contract cheating: A survey of Australian university students. *Studies in Higher Education, 44*(11), 1837–1856. <https://doi.org/10.1080/03075079.2018.1462788>

The authors analyse data from a mass survey of students (14086) and academics (1147) at Australian universities to explore students' experiences with and attitudes towards contract cheating, and the contextual factors that may influence this behaviour. Their findings highlight some factors of assessment design that lead students to engage in contract cheating (heavily weighted assessment tasks, setting assessments without adequate preparation and cognitive overload).

5. Rolim, C., & Isaias, P. (2019). Examining the use of e-assessment in higher education: Teachers and students' viewpoints. *British Journal of Educational Technology, 50*(4), 1785–1800. <https://doi.org/10.1111/bjet.12669>

The authors survey European higher education students (337) and teachers (325) to examine the adoption of e-assessment and the effects upon students' learning. Their findings suggest that the adoption of e-assessment correlates with improved student motivation, increased speed of the assessment process, and improvements to student learning. The study was limited for not providing a breakdown of assessment types.

6. Bennett, S., Dawson, P., Bearman, M., Molloy, E., & Boud, D. (2017). How technology shapes assessment design: Findings from a study of university teachers: How technology shapes assessment design. *British Journal of Educational Technology, 48*(2), 672–682. <https://doi.org/10.1111/bjet.12439>

The authors interview 33 Australian educators to explore their perspectives regarding the design and implementation of technology-supported assessment strategies. Their findings reveal tensions between increased efficiency and introducing innovation, which was largely constrained by lack of time to collaborate to solve technical and logistical problems and upskill. The survey was limited to those academics who self-selected to participate, and therefore were particularly engaged in teaching, which does not represent the experience of all teachers.

7. Vos, L. (2015). Simulation games in business and marketing education: How educators assess student learning from simulations. *The International Journal of Management Education, 13*(1), 57–74. <https://doi.org/10.1016/j.ijme.2015.01.001>

The author reports the results of surveys and interviews of educators in respect of the development and deployment of simulations as an alternative form of assessment of business students. Simulation games are defined as “replicating a real world decision making situation

set within a dynamic operating environment that requires progressively higher levels of decision making competency in order for students to improve performance". The author also identifies a number of metrics of assessment authenticity and elaborates on a simulation protocol used in a marketing course. The study finds that simulation games appear to be authentic pedagogic that allow for the cultivation of higher-order skills, improved student motivation, and learning outcomes.

8. Rahman, A. (2021). Using Students' Experience to Derive Effectiveness of COVID-19-Lockdown-Induced Emergency Online Learning at Undergraduate Level: Evidence from Assam, India. *Higher Education for the Future*, 8(1), 71–89. <https://doi.org/10.1177/2347631120980549>

Rahman conducted a survey of 132 students to assess the implementation mechanism of COVID-19-lockdown-induced emergency online learning at the undergraduate level in Assam, to evaluate its effectiveness and identify challenges from the perspective of students' experience and satisfaction. The author identifies the following common themes for undermined student experience: poor internet connectivity, irregular electricity, high cost of data plans, lack of compatible devices, lack of conducive home environment

9. Ellis, C., van Haeringen, K., Harper, R., Bretag, T., Zucker, I., McBride, S., Rozenberg, P., Newton, P., & Saddiqui, S. (2020). Does authentic assessment assure academic integrity? Evidence from contract cheating data. *Higher Education Research & Development*, 39(3), 454–469. <https://doi.org/10.1080/07294360.2019.1680956>

The authors analysed two datasets – one a set of assignment orders placed on an academic custom writing website and the other a set of assessments confirmed for academic integrity breaches from one Australian university database – to interrogate whether authentic assessment tasks can assure academic integrity in the context of emerging technologies and cheating practices. The authenticity of the assessments was determined using factors the authors derived from the literature: frequency, fidelity, complexity, real-world impact, and feed-forward. They find that assessment outsourcing occurs routinely regardless of the authenticity of the assessment, and offer the potential reason that authentic assessment may be unfamiliar to students from diverse backgrounds, and without time-intensive and scaffolded support to familiarise themselves, they may be tempted to seek unauthorised advice.

### **C. Literature Reviews & Discussions**

13. Holden, O. L., Norris, M. E., & Kuhlmeier, V. A. (2021). Academic Integrity in Online Assessment: A Research Review. *Frontiers in Education*, 6, 639814. <https://doi.org/10.3389/educ.2021.639814>

The author conducts a literature review of current research on academic integrity in higher education, with a focus on its application to assessment practices in online courses. The

discussion includes a review of current methods to reduce academic dishonesty, with a breakdown according to pilot studies in the literature. The author also provides a typology of online proctoring. The review summarises (Table 1, p. 4) studies comparing academic dishonesty in online classes and in-person classes. Common concerns regarding academic integrity and online assessment structure and delivery are also summarised (Table 2, p. 10).

14. Bearman, M., Dawson, P., Ajjawi, R., Tai, J., & Boud, D. (Eds.). (2020). *Re-imagining University Assessment in a Digital World* (Vol. 7). Springer International Publishing. <https://doi.org/10.1007/978-3-030-41956-1>

The volume provides several valuable chapters relevant for the study, including Philip Dawson's 'Cognitive Offloading and Assessment', Edd Pitt and Naomi Winstone's 'Towards Technology Enhanced Dialogic Feedback', and Lois Ruth Harris and Joanne Dargusch's 'Catering for Diversity in the Digital Age: Reconsidering Equity in Assessment Practices'. These chapters provide conceptual frameworks with which to develop our evaluative matrix, in particular regarding quality feedback, academic integrity and equity of access.

15. Brown, S., & Sambell, K. (2020). The changing landscape of assessment: some possible replacements for unseen time-constrained face-to-face invigilated exams. URL: <<https://sally-brown.net/2020/04/02/kay-sambell-sally-brown-coronavirus-contingency-suggestions-for-replacing-on-site-exams/>>.

The authors discuss the opportunities arising from online education in the context of the COVID-19 pandemic, in particular that of increasing authenticity requirements for assessments across all disciplines. The discussion features a comparison table exploring the pros and cons of assessments that can be done virtually.

16. Dawson, P. (2020). *Defending Assessment Security in a Digital World: Preventing E-Cheating and Supporting Academic Integrity in Higher Education* (1st ed.). Routledge. <https://doi.org/10.4324/9780429324178>

The author discusses academic integrity at length in the online context, providing useful insights and recommendations regarding authenticity and security as different features of academic integrity. The author also provides both positive and negative examples of achieving assessment security in online assessments through the assessment design decisions framework (adapted from Bearman et al 2014) (pp. 130-134).

17. Brown, S., & Sambell, K. (2020). Fifty tips for replacements for time-constrained, invigilate on-site exams. URL: <<https://sally-brown.net/2020/04/02/kay-sambell-sally-brown-coronavirus-contingency-suggestions-for-replacing-on-site-exams/>>.

The authors provide an informal guide to assist educators transitioning assessments during COVID-19, and in particular alternatives to invigilated on-site exams. The guide provides

valuable recommendations structured around quality of exam design, ensuring consistency, supporting students and staff.

18. Brown, S., & Sambell, K. (2020). Contingency-planning: exploring rapid alternatives to face-to-face assessment. URL: <<https://sally-brown.net/2020/04/02/kay-sambell-sally-brown-coronavirus-contingency-suggestions-for-replacing-on-site-exams/>>.

The authors compile a list of suggestions for alternative forms of assessment which can be employed remotely. These include the recommendation of take-home exams, use of narrated presentations, e-portfolios, viva voce exams, among others. They also provide a compendium of online resources to assist with the conversion of assessment to the online environment.

19. Butler-Henderson, K., & Crawford, J. (2020). A systematic review of online examinations: A pedagogical innovation for scalable authentication and integrity. *Computers & Education*, 159, 104024. <https://doi.org/10.1016/j.compedu.2020.104024>

The authors conduct a systematic review of the online assessment literature to explore the challenges and opportunities available in their implementation. The results of the survey are structured according to the following themes: student perceptions, student performance, anxiety, cheating, staff perceptions, authentication and security, interface design, and technology issues. The authors usefully summarise some key conclusions regarding online examination interface features in their discussion (Table 2, p. 7).

20. Bengtsson, L. (2019). Take-Home Exams in Higher Education: A Systematic Review. *Education Sciences*, 9(4), 267. <https://doi.org/10.3390/educsci9040267>

A systematic review of research on take-home examinations in higher education. Bengtsson provides a list of remedies to unethical student behaviour on non-proctored take-home exams including: question re-design such as incorporating proof and justification for all answers, using online plagiarism control tools, making direct references to course-specific material, making questions highly contextualised, narrowing the assessment timeframe available for submission, scrambling questions and answers, using secure browsers, and implementing remote invigilation services.

21. Boitshwarelo, B., Reedy, A. K., & Billany, T. (2017). Envisioning the use of online tests in assessing twenty-first century learning: A literature review. *Research and Practice in Technology Enhanced Learning*, 12(1), 16. <https://doi.org/10.1186/s41039-017-0055-7>

The authors conduct a literature review aiming to explore the role of online tests in higher education, with specific focus upon the learning outcomes for students. Their review highlights key concerns regarding cognitive levels of online multiple-choice format tests, the nature of feedback, academic integrity, and equity of access. The authors propose principles for the design of online tests to address each of these concerns (p 12-13).

22. Carless, D., Bridges, S. M., Chan, C. K. Y., & Glofcheski, R. (Eds.). (2017). *Scaling up Assessment for Learning in Higher Education* (Vol. 5). Springer Singapore.  
<https://doi.org/10.1007/978-981-10-3045-1>

The volume provides several chapters relevant to the scope of the project, including Claire Moscrop and Chris Beaumont's 'Technology-enhanced Feedback', and Phillip Dawson and Michael Henderson's 'How does technology enable scaling up assessment for learning?'. These chapters provide valuable insights in particular practical exemplars for using digital assessment systems to enhance feedback models, and using online platforms to enhance assessment authenticity.

23. Atkinson, D., Nau, S. Z., & Symons, C. (2016). *Ten Years in the Academic Integrity Trenches: Experiences and Issues*. 27, 12.

The authors analyse four descriptive cases of academic misconduct, and quantitative data from one faculty plagiarism recording system to provide an support higher education teachers who face systemic threats to academic integrity. They provide a set of recommendations for managing academic integrity, including improving education regarding academic integrity, encouraging students to take greater responsibility for maintaining academic integrity, improving data collection and analysis to determine patterns of academic misconduct, identifying the drivers of academic misconduct, improving the processing of academic misconduct, reducing the opportunities for plagiarism through assessment design, and increasing support services.

24. Caldwell, C. (2010). A Ten-Step Model for Academic Integrity: A Positive Approach for Business Schools. *Journal of Business Ethics*, 92(1), 1–13.  
<https://doi.org/10.1007/s10551-009-0144-7>

The author provides a discussion which analyses the problem of academic integrity as a holistic issue that requires creating a cultural change involving students, faculty, and administrators in an integrated process. The discussion provides reflections and recommendations upon academic-integrity issues as they pertain to business schools in particular.

#### **D. Reports and other resources**

5. Tai, J., Ajjawi, R., Bearman, M., Dargush, J., Dracup, M., Harris, L., & Mahoney, P. (2022). Re-imagining exams: How do assessment adjustments impact on inclusion? National Centre for Student Equity in Higher Education.

The report authors aimed to understand students with disabilities' (SWBs) experiences of exams through the lens of their intersecting identities including their rural status, family

education levels and socioeconomic status, and to transform exam design and practice to be more inclusive. The authors interviewed 51 students with disabilities, and other stakeholders including teaching staff, to interview regarding their experiences of examination practices since the widespread migration to online learning during the COVID-19 pandemic. The authors found that interviews commonly reported staff support and minimising bureaucracy required to obtain adjustments as important for achieving equity of access for SWBs. They also recommend time allowances to ensure flexible time arrangements to suit student conditions, moving toward open-book formats, case-study questions and authentic assessment designs to ease cognitive overload during high-stakes exams and allow students to demonstrate capabilities relevant to professional practice despite challenging and online conditions.

6. Atherton, G. (2021). *Perspectives on the challenges to access and equity in Higher Education across the world in the context of COVID*. National Education Opportunities Network (UK).

The report, published by the UK-based National Education Opportunities Network, presents diverse perspectives in the form of several short-form overviews themed around global perspective, policy and equitable access, addressing the digital divide, and innovation in equity across higher education. Several chapters address the Australian context, including chapter four, 'Australian access and equity in the COVID era', authored by Professor Sally Kift, which provides an overview of the Australian policy landscape in respect of tertiary student equity of access trends. Additionally, chapter 11, 'Challenges to access and equity in the Australian higher education context', authored by Kylie Austin, Elicia Ford and Sarah Glencross (Equity Practitioners in Higher Education Australasia), raises common challenges in higher education equity of access since the COVID pandemic, including failure in the provision of live captioning or language interpreters, notetaking and options for non-verbal forms of communication, and a system-wide failure to equip academic teaching staff to cater for students with disability in an online environment.

7. Centre for Research in Assessment and Digital Learning. (2020). Ensuring academic integrity and assessment security with redesigned online delivery.

The report, published by the Centre for Research in Assessment and Digital Learning (CRADL) was developed as a guide to assist unit chairs with redesigning assessment to suit fully online delivery without invigilated exams. The report summarises at a high-level measures to address academic integrity and assessment security in digital assessment, including using tasks involving assessment design considerations, such as using higher-level learning outcomes, including the use of oral assessment, and explicitly discussing dangers of cheating with students, and adequately equipping teaching teams and sessional staff for detecting cheating. The authors' key concerns to guide online exam redesign include: focussing on particularly critical assessments for online exam delivery; shifting exam focus from knowledge recall to alternatives that involve students communicating the reasoning behind their choices, and thirdly,

adequately communicating the redesign for online delivery to students. The report provides a flow diagram to guide decisions for online exam redelivery at pages 6-7.

8. Stone, Cathy. (2017). *Opportunity through online learning: Improving student access, participation and success in higher education. National Guidelines*. National Centre for Equity in Higher Education.

This report, authored by Cathy Stone and published by the National Centre for Student Equity in Higher Education, develops a set of national guidelines to improve student outcomes in online learning environments. Stone interviewed 151 education practitioners across Australia and the UK. The final recommendations include, relevantly, using online learning data and analytics to improve assessment practice and provide personalised student interventions, early contact with students regarding support for the online environment, ensuring the availability of teacher and support service presence, allowing for synchronous and asynchronous activities, presenting information in multiple formats, and assessing early to build academic expectations.