

# Expert advice for student authentication of online assessment<sup>1</sup>

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Recent social isolation policies have resulted in a wholesale move to online education including assessment. This move has been accompanied by an increased concern about whether the learning products being assessed are those of the students enrolled in the study program. This concern about students' academic honesty in relation to assessment is not new as it also applies to assessment carried out in face-to-face learning programs. However, the sudden and pressing need to convert hitherto classroom-based curriculum assessments to on-line assessments in this time of social distancing underscore the responsibility that educational institutions need to use processes that will help to authenticate that the work submitted is that of the students enrolled.

## Solutions for Student Authentication

Assessment in higher education largely relies on examinations, project and papers (extended writing), portfolios of evidence, quizzes, and reflective homework. The following is a more detailed elaboration of the chart presented in Attachment A, of assessments and possible ways of authenticating that the work is that of the student who has submitted it.

### Examinations

The first step is to question whether examinations are the best solution for the particular assessment. Examinations are useful to ascertain the accuracy of the students' knowledge building, particularly for large class cohorts. Multiple choice questions (MCQs) can also be used to assess higher order thinking, in terms of the application of knowledge to novel situations. One limitation is that MCQ exams do not foster the development of elaborated problem solving, weighing evidence for an informed personal opinion or enhanced written communication skills. Furthermore, the major concern of exams is the prevention of cheating and ensuring that the online examinations are completed by the student being assessed.

Possible solutions include:

- Requiring students to complete and submit an *online attendance form* using *personalised entry codes* to sit the examination (Bailie and Jortberg, 2009). In order to sit the exam, students will need to apply for this code prior to the examination. Like any other personalised code, they will be expected and warned not to disclose it to anyone else. Establishing this authentication strategy will involve detailed work by the higher education institutions to establish the system, embed it in assessment policies and procedures and to inform and educate both staff and students as to

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<sup>1</sup> Companion to *Expert Advice on Authentication of Student Products in Online Assessment*

what is required and how it is to be included into the examination process.

- Use unique personalised *challenge questions* as authentication prior to the exam. The questions will be those that are used by financial and other institutions to verify the identity of the person online or on a telephone. This identification process occurs prior to the commencement to the examination (Bailie and Jortberg, 2009, p.200). Consideration of issues of privacy for students will require ethical processes be inserted into institutional assessment policies relating to authentication for examinations. Assessment policies need to be adjusted to account for the addition of this process. There should be a clear indication that students are expected to be online 15 minutes prior to the start of the exam in order to have time to undergo and pass the authentication process. Processes will also be required to enable a second attempt at authentication if the student does not pass the first one, and then if that is not passed a final person-to-person contact process by a proctor to identify what is impeding the process. If students cannot pass the challenge question barrier, they will then be required to sit a later invigilated examination.
- Using trained proctors who can use student photographs to verify that the person sitting the exam using webcams. This can be a mere initial identification or a full invigilated recording of the student during the exam. One of the problems to be anticipated with this process is that some students may not have the technology or the quality of internet access to support this process.
- Using open book examinations give students the confidence to undertake examination and discourage cheating. In this age of accessible information on the internet, it has become more important that students know where to access accurate information and how to use it appropriately. Open book exams support the notion that students need to be discerning in the information they use.
- Build a bank of exam questions that selects questions in random order for each student and limit the time for students to provide the answer. The unique order of questions discourages collusion between students who may be undertaking the exam in close proximity.

## Essays and Projects (extended writing)

Essays have very little value beyond educational processes. They are only a product of, and for, education systems, especially universities. As such, they have become a commonly accepted practice because everyone has done them in their own education. Like exams there is a need to question why we use them.

There are three significant problems associated with extended writing of essays and projects. Students can:

- pay for others to write them,
- copy essays and projects students have produced in previous years which are hard to detect in large student cohorts or with high levels of casual tutors used as assessors,
- plagiarise published work, cutting and pasting from diverse texts and passing off the work as their own.

In addition, extended writing is challenging for teachers to assess. There is always the risk



of personal subjectivity of the assessor, and the time taken to undertake it is expensive. There are some good reasons for using extended writing to determine if students can:

- conduct systematic data gathering
- use data and arguments to build their own depth of critical understanding about an issue
- form and communicate personal opinions based on evidence.

These outcomes can be achieved through essays. However, strategies are needed to be sure that what is submitted is the students' work.

- At the beginning of the course or study, ask students to write a **short piece** (no more than 2 pages) on themselves, what they already know on the topic of study; what questions they have that the hope the course will address and what questions they hope the course will address.

Or

At the beginning of the course, give students an article or a choice of articles to read. Ask them to write a brief paragraph about the main idea and identify 4-5 key points used to support the main argument. Then they should write a brief paragraph about the value of reading this article for someone studying their particular course.

Either of these two early writing exercises, or others that are authentic to the substance and intent of the course, will generate some student writing prose that can be used to compare against the writing style in any essay they submit later in the course.

- Stage the writing process: Require students to incrementally submit in stages the development of their final product by given dates. Use a rubric to give feedback that the student must incorporate in the final product.
  - Stage 1: Students submit the title and topic of their essay and their plan for writing it.
  - Stage 2: Students produce a progress report, summarise their learning to date and the challenges they are experiencing e.g. what they have learned from their reading and research thus far, or write an annotated reference list, or a list of the different opinions that they have read thus far and whether they have formed an opinion themselves.
  - Stage 3: Students submit a work in progress that might include: questions their reading and writing have generated and they should indicate the kind of feedback they are seeking.
  - Stage 4: The final product indicating where and how the feedback has been used. This is called conditional feedback. The final grade is conditional on students having read and used the feedback provided.
- This staged process outlined above works very well with *projects* in the later years of study. Set dates to submit the (1) focus of the study and its rationale and plan; (2) the literature review;(3) the method for the project; (4) the analysis of the findings; (5) the entire project with conclusions, recommendations etc., indicating how they have used the feedback given at each stage.

It is difficult for students to get another person to undertake these processes for them, especially if there is some opportunity to have an online, face-to-face, discussion about the task. If students are given feedback and advice at each stage to incorporate into the final piece of work, the staged process will encourage them to start early and to engage with the intent of the task. Assign dates to be met in the staged process.

## Portfolios

Producing a portfolio of work that adopts the course learning outcomes as a reporting structure. Learning portfolios gives students the opportunity to exercise their independence and focus on ways to express their learning that best suit them. The important aspect of portfolios is that are not just a folder of bit and pieces! They are a carefully curated set of evidences that the student has achieved the learning outcomes of the topic. This requires students to have a clear idea of what is expected of them and then to develop a plan for addressing the learning outcomes. This may require a conversation with a tutor. The presentation of a portfolio should have two elements.

- A commentary that uses the learning outcomes and explains to the assessor which pieces in the portfolio are evidence of the achievement of one or more learning outcomes. The commentary for each learning outcome should be no longer than about 200-300 words. Each course should have no more than 3-5 learning outcomes.
- The second element is the evidence. This may come in the form of a transcript of a discussion in which a conflict or a problem is solved; a piece of illustrative creative work; a description of critical incident that illustrates a key concept; a video clip of mastery of some skill etc.

Students should understand in curating their portfolio that it is not the quantity that is important, but the quality of the interpretation of the evidence in the light of the learning outcomes. Portfolios can be a useful aid for students in transitioning from study to employment as graduates can produce evidence of success in independent learning, teamwork and innovation.

## Team work

IT affordances now make it easy for student to meet, plan, problem solve and execute tasks online. As always with groups, it is important that features of good team work feature in the assessment. For that reason, students should be asked to evaluate the team processes, including themselves and their peers in dividing up and carrying out the tasks. Early on a review of progress should be conducted and the tutor notified if any of the team is not turning up or doing the work. The tutor can then give that student a yellow card as a warning. If the students' contribution does not improve then they get a red card and are taken off the team and will have to do a supplementary assessment that can only gain a mere pass. The final piece of team work, say a PPT presentation of the project or learning process, should get a grade based on its standard and then that grade be multiplied by the number of people in the group and shared out according to the quality of their team work. Each student submits the work along with a statement regarding their contribution.

## Alternatives to Extended Writing

Brief but regular writing can be submitted at the end of each section of online study in a course. These brief writings can provide important information regarding students' progressive knowledge building and are less susceptible to cheating and plagiarism. They include:

*A minute papers.* Students write for one minute on the subject of the week and submit to the online tutor at the end of an online session. This can be a synchronistic or asynchronistic activity in which students synthesise or apply conceptual learning.

*The muddiest point.* Student identify and write about a concept that they are finding difficult to understand and pose questions about it and submit it at the end of a tutorial session. This enables the tutor to identify where revision is required.

*Concept mapping* of the subject of the week's reading. When students are introduced to concept mapping it assists them to develop higher order thinking of analysis and synthesis when they consider the relationships between ideas. It also allows the assessor to quickly determine if they have gained an accurate understanding of the broad construct.

*Five key points;* Students identify and describe what were the five key issues that outlined the week's online subject for study.

*Labelling a diagram:* The diagram is sent online and students label the components and add their function. Once again this should relate to the subject understudy that week. (See *Classroom Assessment Tests (CATs)* by Angelo and Cross, 1993 for further Ideas).

*Key features scenario:* A relevant scenario is generated that aligns with the subject matter of the course. Students are given either a table with two or four columns. They are then asked to identify in Column 1 the key features of the scenario that require noticing. In Column 2 they identify the key concepts learnt in the course that help to explain the key features they have listed. This two-stage process may be enough for the early years of the program of study. However, in the later years students can be asked to add how they would intervene in the scenario in Column 3 and the concepts they have learnt that would justify their choice of intervention in the fourth column.

These scenario-based activities can be group activities online and then similar scenarios can be included in a final exam because students have become familiar with the process. Key features questions are time efficient to assess, but take some practice by teachers to develop good, authentic, problem solving scenarios and practice by students to understand what is required.

## A remaining question

*Should online social interaction affordances such a blogs, chat rooms be assessed and graded?*

These activities are the process of learning that replaces the valuable peer interaction of a face-to-face classroom. They are important but attempting to grade such activity is open to too much subjectivity which can undermine trust. The same can be said for grading participation or attendance.

## Conclusion

Good, effective, assessment encourages students to engage in their learning. Students engage in honesty in their assessment task where there is trust between the students and teachers and a shared understanding that assessment is a tool for learning not merely a measure of learning. The more that this way of thinking becomes the basis of an education program, the less students will need to be coerced into doing their own work with threats of detection and its consequences.

## Author's Bio

Janice Orrell is Emeritus Professor in the College of Education, Psychology and Social Work at Flinders University where she is an Adjunct Professor of Higher Education and Assessment. Her fields of investigation are Assessment and Work Integrated Learning in higher education. She was a Foundation Director of the Carrick Institute for Learning and Teaching in Higher Education responsible for Discipline-based Initiatives (DBI) and Resource Identification Networks (RIN). She has taught at all levels of Education for over 50 years including, early childhood education, in rural and remote schools, international education, aboriginal teacher education, nursing and medical education, post graduate teacher education and is a supervisor of research higher degrees in education.

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## Resources

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<https://www.eit.edu.au/cms/resources/practical-online-learning-ebook/chapter-13-assessment-and-evaluation-of-students-and-online-learning-programs>

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[https://www.deakin.edu.au/\\_data/assets/pdf\\_file/0003/2091567/07-cradle\\_academic-integrity-online\\_PM.pdf?\\_ga=2.263811528.551701677.1586298400-324399138.1528016360](https://www.deakin.edu.au/_data/assets/pdf_file/0003/2091567/07-cradle_academic-integrity-online_PM.pdf?_ga=2.263811528.551701677.1586298400-324399138.1528016360)



## Attachment A: Authentication Processes for Online Assessments<sup>2</sup>

Commonly used online assessment tasks that contribute to their assessment grade include: end of course examinations, extended writing in the form of essays and projects, portfolios of evidence of learning, tasks, team work, quizzes, reflective writing in blogs, and contributions to chat rooms. This is not an exhaustive list of possible assessment tasks, but the following will outline and evaluate some of the means that can be used to authenticate some forms of student assessment and identify the implications for higher education institution (HEI) management.

Assessment task	Authentication	HEI Implications	Commentary Strengths /Limitations
<b>Examinations</b>	1. <i>Unique Identity Code</i> (UIC) assigned on students' application to sit exam.	- UIC policy and processes included in assessment policy - Inform staff and students	Some students may be willing to sacrifice their security. IT set up costs.
	2. Successfully answer <i>Online Challenge questions</i> prior to commencing exams	- Establish database of student info to be used for identification purposes. - Consider student privacy - Assessment policy	As above. Cost of proctors.
	Exam proctors/ invigilators use <i>webcams and photographs</i> to verify student sitting the exam	Employment and training of proctors.	As above.
	<i>Open book exams</i> (OBE)+ proctors + webcam recording of student during the examination	Preparation for students for OBEs to ensure they prepare adequately.	Good students do well; unprepared students fail to use exam time effectively.
<b>Essays</b>	<i>Staged submission</i> : student submits title and plan for the essay; feedback provided; use of feedback demonstrated in the next stage of draft submission.	Ensure staff are familiar with consequential feedback processes.	Are they appropriate for the course? Could more authentic tasks be given?
	Brief writing exercise to be used to compare writing styles between that and the larger essay.	Ensure staff have the capability to carry out writing style comparisons.	Examples provided in the following text.
<b>Projects</b>	Staged submission with feedback at each stage to be incorporated into the final submission. Consultations with the tutor, or in-progress presentations to class or study group on agreed dates	As above for essays.	Can constitute more authentic assessment and can be included in an employment-seeking portfolio.

<sup>2</sup> From Expert Advice on Authentication of Student Learning Products in Online Assessment

Assessment task	Authentication	HEI Implications	Commentary Strengths /Limitations
<b>Portfolios</b>	200-300 word commentary against each learning outcome in which students describe the evidence in the portfolio of tasks and learning activities undertaken to achieve the learning outcomes.	Constitutes a cultural shift in assessment that staff and students need to learn.	As above.
<b>Team work</b>	Students assigned to teams of four to work on a project that will be presented in a PPT presentation for the rest of the class and the tutor. Evaluate the team function early and trouble shoot difficulties. Students self and peer evaluate.	As above. The final grade can be shared proportionate to the input of each student. Students who do not contribute do not get a grade and do make-up work for a pass at best.	As above.
<b>Reflective writings, weekly quizzes</b>	Short and regular writing and quizzes that demonstrate accurate and incremental knowledge building. Webcam recording of the student undertaking the task can be taken.	These are more appropriate for early years of a program of study. Later years should have a knowledge base and be applying it.	These tasks are evidence of student engagement, and can be non-graded 'work required' but needed to assign a final grade.

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