

# ASSESSING STUDENT LEARNING IN AN ONLINE SETTING

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**D**evelopment



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# Table of Contents

- INTRODUCTION .....3**
- ONLINE ASSESSMENTS .....3**
  - EXAMS AND ACADEMIC INTEGRITY .....3
  - CAN EXAMS AND TESTS QUESTIONS BE PROTECTED?.....3
    - Academic Integrity Pledge* .....4
  - MOODLE TUTORIALS TO CREATE ONLINE EXAMS/QUIZZES .....5
  - OTHER ASSESSMENT MODALITIES.....6
  - MORE OPTIONS FOR ADAPTING FINAL ASSESSMENTS .....8
- ONLINE EVALUATION TOOLS .....10**
  - INDIVIDUAL ASSESSMENTS.....10
  - SMALL GROUP ASSESSMENTS .....11
- PROCTORING OF ASSESSMENTS .....11**
  - BROWSER LOCKING .....11
  - PROCTORING APPLICATIONS .....12

## INTRODUCTION

Evaluating student work with an online platform engenders many institution-wide challenges ranging from policy to technology. Changing the way in which we evaluate a student's achievement of the competencies using an online platform is an opportunity to revisit and reimagine, in creative ways, how we certify competencies.

This document offers alternative assessment ideas and includes an inventory of tools available for faculty according to the type of evaluation desired. You are invited to explore these tools to determine which is most suitable to the evaluation you would like to use with your students. These include the College-supported platforms and others which you may wish to explore to determine the pros and cons of each tool.

Faculty who use the College-supported tools and have questions are invited to submit their question to the Faculty Hub. Your questions will be answered by the support team.

## ONLINE ASSESSMENTS

How can you create assessment activities for your online course that require students to demonstrate achievement of the competency(ies) developed by your course?

For some disciplines, the solution may be identical to a face-to-face course. For other disciplines, solutions may not be quite so evident for several reasons, some of which include the students' lack of appropriate home software and/or equipment or the assessment activity is related to an internship, a lab or a clinical setting where psychomotor and/or behavioural competencies are to be assessed in that context.

If the certification of competencies does not require specialized equipment or clinical settings, this document may help you reimagine your assessments.

Since time is of the essence to create our online courses, this article borrows from the wealth of information already available online. The curated links have been vetted for alignment with competency-based education. In some instances, sections of articles have been replicated here in order to focus the information.

### Exams and Academic Integrity

Delivering online exams poses a particular challenge. Students are on their own during the exam and teachers must rely on the students' academic integrity.

### Can Exams and Tests Questions be Protected?

Reasons for wanting to keep control of examination/test questions include situations where a bank of question is drawn from year to year, especially when multiple choice questions are used.

Unlike the physical examination/test setting, there is no way to truly prevent motivated students from copying the questions used, although high-level proctoring software and web-cam surveillance equipment can make it more challenging for the student to do so. Bear in mind that in addition to screen capture and sound capture software on a computer, students can use audio recorders and their cell phones to record what they see and hear onscreen.

An option to curtail the potential to capture questions from a limited question bank is to review and/or adapt the way assessments are designed.

## Academic Integrity Pledge

During Dawson College's final exam sitting students sign an Academic Integrity pledge. Research has shown that signing such a document acts as a deterrent, reminding students of appropriate behavior by soliciting their consent to respect the rules.

You may also consider asking students to (digitally) sign an explicit integrity pledge (see the section below, "Online Testing with Integrity Pledge", for sample language at <https://skylight.science.ubc.ca/lt/guides/alternate-exam-resources>

## Mitigating the Risk of Violation of the College's Academic Integrity Policy.

Here are some other curated examples to help develop online assessments in order to mitigate the risk of violation of the college's Academic Integrity policy.

(Source: <https://skylight.science.ubc.ca/lt/guides/alternate-exam-resources>).

- **Allowing exams to be open-book/source:** assume students will use resources while taking an exam, and even encourage them to do so. Try to ask questions that probe deeper levels of knowledge and understanding, enabling students to apply, assess, and evaluate concepts and facts in meaningful ways. Encourage students to share and cite where they get information from and what resources they use.
- **Encourage students to collaborate/share questions and ideas:** students will likely work together when they are stuck or confused. You can encourage working in small teams and ask them to include who they work with and in what ways.
- **Focus on solving problems while showing work and explanations:** in many cases, students may get the same answer, but showing their work reveals meaningful differences in understanding. Sometimes there may only be a few ways to show work, so you may ask for brief prose explanations or have students record a video of them talking through the process to solve a question.
- **Use question pools:** if you have short-answer or multiple-choice questions, create pools in your Learning Management System (LMS) so that students receive different sets of questions (this can also be done with essays and more complex questions). *This is possible with Moodle, see below.*
- **Use student-generated questions with explanations:** instead of trying to ensure everyone answers your limited number of questions on their own, ask every student to create their own question with an explanation of how it would assess a certain topic or skill in a meaningful way. You can also assign students to answer each other's questions and state whether those questions actually do assess these skills in appropriate ways.

- **Consider question formats leading to essays, videos, pictures, and other personal responses (on specific course topics or reflection on learning in the course):** if your class lends itself to it, having students express their learning through essays, videos, pictures, or other personalized forms of writing/speaking/communicating means that everyone needs to create their own.

### Moodle Tutorials to Create Online Exams/Quizzes

If you would prefer to offer online exams, one strategy would be to create a bank of questions. You can then select the questions for your exam or quiz. You can shuffle questions to create different exams, control the start and end date/time that the quiz or exam is available as well as its duration. You can also tie the exam to a particular course competency(ies).

Guidelines to develop Multiple Choice/Objective assessments, produced by the Concordia-Marianopolis ECQ project, are available on the [SALTISE](#) website.

The [University of British Columbia](#) highly recommends providing students with an ungraded test of the process before the exam period if at all possible, perhaps with a couple of questions presented using the intended format. This will help them understand the format and help everyone discover technical issues prior to the actual exam.

Here are a few tutorials to get you started:

[How to create questions using question bank](#)

[How to create a quiz or exam in Moodle](#)

[How to import questions from a word document into a Moodle question bank](#)

[Example: creating biology discipline question using drag and drop](#)

[Example: creating a drag and drop onto image question using text](#)

[How to create a Rubric](#)

## Other Assessment Modalities

If your course competencies do not lend themselves well to exams, you may want to consider some of the following assessment ideas. Examples may be from one discipline and may be transferable to others.

MODALITY	DESCRIPTION/EXAMPLES
Blog	Students analyse a topic discussed on Blogs around the world. They then synthesize the information gathered and present the results.
Opinion piece	Students report on a current contemporary issue by presenting their own thoughts. An ethical question, the pandemic or any other global issues could be a topic to explore.
Documentary	Students produce a documentary to explore concepts in popular culture. <a href="https://www.popularsociology.net/?fbclid=IwAR3uucqJ-g-2r2hb5UACDzTTa0NjcQ0mJwH8MpRWQkdFZdTIJjncAQdkv9A">https://www.popularsociology.net/?fbclid=IwAR3uucqJ-g-2r2hb5UACDzTTa0NjcQ0mJwH8MpRWQkdFZdTIJjncAQdkv9A</a>
News report	Students research the best way to write a news report and then report objectively on a topic of interest.
Case study	CASE studies verify students' problem-solving abilities with open-ended questions given a case to analyse. <a href="https://www.edutopia.org/article/making-learning-relevant-case-studies">https://www.edutopia.org/article/making-learning-relevant-case-studies</a>
Synopsis or storyboard	Students summarize a book, article, scientific study, story etc. with a synopsis that can then take the form of a storyboard to be submitted to an animator for an explainer video.
Research project	Students research a topic and present a paper or video presentation.
Problems to solve	Students take home problems to solve and explain the rationale or logic that led to the solution.
Mock grant application	Students write a proposal for a research grant in their discipline (or two) of interest. They can write a cover letter, executive summary, need statement, goals and objectives. They elaborate the methods and strategies they will use as well as present a project budget.
Video presentation	Students pre-record a presentation. They can use Office 365 STREAMS to upload their video and share the link.
Podcast	Students create a podcast to teach back to their peers. <a href="https://www.edutopia.org/article/podcasting-creates-audience-student-storytellers">https://www.edutopia.org/article/podcasting-creates-audience-student-storytellers</a>
Narrated PowerPoint presentation	Students can add a narrative to their PowerPoint presentation.
Take home test (Open-book exam)	Allows students to consult some form of reference material in the course of completing the exam. <a href="https://www.ryerson.ca/content/dam/learning-teaching/teaching-resources/assessment/open-book-exams.pdf">https://www.ryerson.ca/content/dam/learning-teaching/teaching-resources/assessment/open-book-exams.pdf</a>
Wiki's	In the traditional classroom setting, teachers provide most of the classroom information. With wikis, students can collaboratively create a great deal of that

MODALITY	DESCRIPTION/EXAMPLES
	<p>classroom information. Wikis allow students to become the authors of knowledge rather than the consumers of it, making wikis an excellent resource for inspiring students to form critical thinking techniques, to learn from their peers, and to become better contributors in group settings.</p> <p><a href="https://educationaltechnology.net/wikis-in-education/">https://educationaltechnology.net/wikis-in-education/</a>  <a href="https://cft.vanderbilt.edu/guides-sub-pages/wikis/">https://cft.vanderbilt.edu/guides-sub-pages/wikis/</a></p>
Journal reflections	<p>Students write their personal reflections about a topic of choice, or an assigned topic. Students can either free-write or you can provide guiding points.</p>
Discussion boards	<p>Students participate in a discussion board where they discuss a proposed topic. Multiple participants can respond to comments or questions posed by the teacher or other students. This can get a little overwhelming to evaluate so make sure you use a rubric, and consider asking students to select a number of posts they feel are the best for you to assess. Asking students to explain their selection (perhaps by referring to the rubric), can also add a level of self-evaluation and metacognition.</p> <p><a href="https://cft.vanderbilt.edu/guides-sub-pages/blogs/">https://cft.vanderbilt.edu/guides-sub-pages/blogs/</a></p>
Concept maps	<p>Students graphically represent their understanding by mapping the main ideas within a concept. Concept maps may also use linking words to represent the relationships between the main ideas.</p> <p>This can be useful in gaining insight into how your students understand and organize new material, as well as how they relate it to prior knowledge.</p> <p><a href="https://www.cmu.edu/teaching/assessment/assesslearning/conceptmaps.html">https://www.cmu.edu/teaching/assessment/assesslearning/conceptmaps.html</a>  <a href="#">Sample</a></p>
Fakebook	<p>Students create a fake Facebook page for various theorists/peoples/authors studied.</p> <p><a href="https://www.classtools.net/FB/home-page">https://www.classtools.net/FB/home-page</a></p>
Use of a virtual science lab	<p>Virtual labs are interactive, online tools in which students may mimic data collection, processing, and analysis, as well as draw conclusions about the attained results.</p> <p><a href="https://praxilabs.com/en/virtual-labs/">https://praxilabs.com/en/virtual-labs/</a> <a href="https://praxilabs.com/en/">https://praxilabs.com/en/</a> <a href="#">Collection of Virtual Labs</a>: <a href="https://teachingcommons.lakeheadu.ca/virtual-laboratories;">https://teachingcommons.lakeheadu.ca/virtual-laboratories/</a>  <a href="https://phet.colorado.edu">https://phet.colorado.edu</a></p>
Photo Essay: Video/Assignment Sheet	<p><a href="https://www.teacherspayteachers.com/Product/Photo-Essay-VideoAssignment-SheetRubric-Inner-worlds-5079949?fbclid=IwAR3jjPkpINU45XZDSMGPGlifw32g_ShIKydQhIj4cvZldmutSgSO-cKCnU">https://www.teacherspayteachers.com/Product/Photo-Essay-VideoAssignment-SheetRubric-Inner-worlds-5079949?fbclid=IwAR3jjPkpINU45XZDSMGPGlifw32g_ShIKydQhIj4cvZldmutSgSO-cKCnU</a></p>

## More Options for Adapting Final Assessments

Adapted from: [Rethinking Your Final Course Assessments](#)

Produced by Centre for Excellence in Learning & Teaching at Ryerson University

Type of Assessment	What is being Assessed	Can be replaced with
Multiple Choice Questions	<ul style="list-style-type: none"> <li>• Knowledge</li> <li>• Facts</li> <li>• Concepts</li> <li>• Recall</li> <li>• Definition</li> <li>• Identification</li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">Open book exams [pdf]</a></li> </ul>
	<ul style="list-style-type: none"> <li>• Analysis</li> <li>• Synthesis</li> <li>• Problem solving</li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">Open book exams [pdf]</a></li> <li>• Problem solving take home assignment - students work at home and submit the assignment online</li> </ul>
Short answer questions	<ul style="list-style-type: none"> <li>• Knowledge</li> <li>• Concepts</li> <li>• Facts</li> <li>• Recall</li> <li>• Definition</li> <li>• Identification</li> <li>• Analysis</li> <li>• Synthesis</li> <li>• Problem solving</li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">Open book exams [pdf]</a></li> <li>• Problem solving take home assignment - students work at home and submit the assignment online</li> <li>• Short written assignment/essay</li> </ul>
Essay responses on exams	<ul style="list-style-type: none"> <li>• Writing</li> <li>• Analysis</li> <li>• Critique</li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">Open book exams [pdf]</a></li> <li>• Short written assignment/essay</li> </ul>
Labs	<ul style="list-style-type: none"> <li>• Procedural knowledge</li> <li>• Critical thinking</li> <li>• Hypothesis testing</li> <li>• Evaluation of evidence</li> </ul>	<p>Ask students to:</p> <ul style="list-style-type: none"> <li>• Design a lab for a specific purpose</li> <li>• Describe how they would carry out a particular test. What equipment, controls, precautions must be considered?</li> <li>• Explain how they would test a hypothesis</li> <li>• Provide possible reasons for particular outcomes</li> </ul>
Direct Observation or Practical Demonstration	<ul style="list-style-type: none"> <li>• Procedural</li> <li>• Knowledge</li> <li>• Analysis</li> <li>• Critical Thinking</li> </ul>	<ul style="list-style-type: none"> <li>• Record a demonstration of procedure (e.g., on a phone, tablet, or computer) along with a description of key steps and/or cautions and share with students</li> <li>• Provide an online clip of a procedure for student analysis.</li> </ul>
Performance or Procedure	<ul style="list-style-type: none"> <li>• Procedural knowledge</li> <li>• Aesthetic skills</li> <li>• Communication skills</li> <li>• Analysis</li> </ul>	<p>Ask students to:</p> <ul style="list-style-type: none"> <li>• Record a performance or procedure using their phones, tablets, or computers</li> <li>• Critique a performance or procedure. Identify steps, identify problems with procedure.</li> </ul>

Type of Assessment	What is being Assessed	Can be replaced with
Problem Sets	<ul style="list-style-type: none"> <li>Analysis</li> </ul>	<ul style="list-style-type: none"> <li>Assign and photograph handwritten responses</li> </ul>
Scenario-based (see also Critiques)	<ul style="list-style-type: none"> <li>Critical Thinking</li> <li>Observation</li> <li>Analysis</li> <li>Application of knowledge</li> </ul>	<p>Ask students to review a scenario for key information/factors or for actions to be taken:</p> <ul style="list-style-type: none"> <li>An experiment has been conducted with the following control and the results are surprising. What might account for your observations?</li> <li>You are working with a patient/client/child and [the following thing] happens, how would you respond?</li> <li>Review a video, image, or text and answer questions, provide an analysis, reflect on, or make connections between course concepts</li> </ul>
Critiques / Creative work	<ul style="list-style-type: none"> <li>Analysis</li> <li>Application of knowledge</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">Set up pairs or triads for students to email work to each other</a> and provide feedback using a rubric. Provide peer readers with specific descriptive questions to answer, such as “What is the biggest unresolved question in this work?” or “What are the biggest strengths of this piece?”</li> </ul> <p>Ask students to:</p> <ul style="list-style-type: none"> <li>Critique a visual</li> <li>Identify multiple examples of a visual for analysis</li> </ul>
Presentation	<ul style="list-style-type: none"> <li>Knowledge</li> <li>Oral Communication</li> <li>Organization</li> </ul>	<p>Ask students to:</p> <ul style="list-style-type: none"> <li><a href="#">Record presentations</a> using phones or computers</li> <li>Deliver presentation live using Zoom</li> <li>Submit a written script or detailed outline of the presentation.</li> <li>Submit slides with speaker notes</li> </ul>
Group presentation	<ul style="list-style-type: none"> <li>Knowledge</li> <li>Teamwork</li> <li>Interpersonal Communication</li> </ul>	<p>Ask students to:</p> <ul style="list-style-type: none"> <li>Use online tools such as Zoom to coordinate a presentation. One group member can share their screen while the other members take turns speaking.</li> <li>Each contributor records their contribution using simple technology</li> <li>Offer self- or peer-assessment options using a simple Office 365 Form</li> <li>Generate a digital poster to be shared with the students.</li> </ul>
Portfolio	<ul style="list-style-type: none"> <li>Visual information (artwork, 3D projects)</li> <li>Written work</li> </ul>	<p>Ask students to:</p> <ul style="list-style-type: none"> <li>Photograph physical pieces with their phones and create a digital version of the portfolio.</li> <li>Annotate their work and process for each piece and include a brief introductory statement about the work as a whole.</li> </ul>

## ONLINE EVALUATION TOOLS

The following evaluation tools are supported by the College. Please refer to [webinar section of the Faculty Hub](#) for regularly scheduled live sessions with our team.

### Individual Assessments

<b>Assessment Purpose:</b> to give feedback – <b>Formative*</b> assessments (low stakes)		
(N.B., formative assessments can be for grades or not-for-grades; what is important is that they are support learning and <i>low stakes</i> )		
<b>Online tools:</b>	<b>Assessment types:</b>	<b>Formats:</b>
Moodle; LON-CAPA; myDALITE; WebWork, publisher textbooks (Mastering Physics, Mastering Chemistry, Mastering Biology., etc.)	Simple quizzes, assignments, practice problems; many can be automatically scored.	Multiple choice (MC) questions; MC with short explanations; matching answers; computational problems, graphing, etc. (more question types: <a href="https://docs.moodle.org/38/en/Question_types">https://docs.moodle.org/38/en/Question_types</a> )
Moodle; LEA; Office 365 forms	Simple quizzes, assignments, etc.	Multiple choice (MC) questions; MC with short explanations; short answers; etc.
Moodle; LEA; Turnitin;	Written reports, projects, presentations, etc.	Long answer questions; essays; slide presentations, etc.
Moodle; Nureva Span; Office 365 word/slides	Multi-media reports, portfolios, presentations	Compiling documents, images, and other media

<b>Assessment Purpose:</b> to give grades – <b>Summative*</b> Assessments ( <i>high stakes</i> )		
N.B. can be proctored or un-proctored - [ un-proctored – see options later]		
<b>Online tools:</b>	<b>Assessment types:</b>	<b>Formats:</b>
Moodle; Publisher’s tests & exams; LON-CAPA	Scheduled tests, final exams	Multiple choice (MC) questions; MC with short explanations; short answer questions; (more question types: <a href="https://docs.moodle.org/38/en/Question_types">https://docs.moodle.org/38/en/Question_types</a> )
Moodle; LEA; Turnitin; MIO email	Written reports, projects, presentations, etc.	Long answer questions; Essays
Zoom, MS Teams	Multi-media reports; Comprehensive assessments; Direct observation.	One-on-one presentations; interviews; etc.

## Small Group Assessments

Assessment Purpose: to give feedback – Formative assessments/ Summative assessment		
Online tools:	Assessment types:	Formats:
Moodle; Office 365	Written reports, projects, presentations, etc.	Long answer questions; Essays
Nureva Span; Visual Classrooms;	Multi-media reports, portfolios, presentations	Compiling documents, images, and other media
Zoom, Microsoft Teams	Multi-media reports; Comprehensive assessments; Direct observation	Group presentations; interviews; etc.

*Note: Proctoring platforms exist that can interface with some of these tools if desired.*

**\*Formative assessments** have the objective of providing students with ongoing feedback. Such assessments are intended as part of the learning experience. They may or may not be graded but never for a significant component of their final grade (i.e., low stakes).

Formative assessment gathers information throughout a course. This information is then used to guide teaching and to improve learning and performance. The key component of formative assessment is feedback, whether the assessment is a graded quiz or written assignment or student participation in a discussion forum (*source: [learnworlds.com](http://learnworlds.com)*).

**\*\*Summative assessments** have the objective of evaluation and to generate both quantitative and qualitative assessments of the student in the form of a grade (i.e., high stakes).

Summative assessment are typically done at the conclusion of a course or a program (Comprehensive Exam) in order to verify whether students have achieved identified goals, met expected outcomes. Summative assessments typically result in a score or grade. A culminating final exam or performance task is an example of a summative assessment (*source: [learnworlds.com](http://learnworlds.com)*).

## PROCTORING OF ASSESSMENTS

### Browser Locking

The **Lockdown Browser software**, which students install and prevents them from navigating to other resources during a test, has also been tried with online tests at UBC, but severe limitations have been discovered when using this at a large scale, so we cannot recommend it. It would not prevent students from using a second device to access other resources (its main applications have been in-person, proctored online exams to prevent switching between windows, not as much for remote testing). (<https://lthub.ubc.ca/guides/lockdown-browser/>).

## Proctoring Applications

For assessments that require more active proctoring functions, the college is actively exploring some applications and leaning towards **ProctorTrak** for its comprehensive features.

There are other proctoring applications on the market some of which include **Proctorio** and **TopHat** that also integrate with Moodle.

If you are interested in exploring the features of a proctoring application while the college is evaluating options, [www.proctorio.com](http://www.proctorio.com) is making its application free for limited use in response to the Coronavirus (COVID-19). There is currently no charge associated with setting up **Proctorio** in any assignments for the Winter 2020 term, including midterms and finals. An update on costs for future terms will be provided in May 2020.

Before using a proctoring application, be sure to confirm that students have the proper browser, equipment, such as webcam, microphone (if not integrated into the webcam), accessibility, etc. Keep in mind that students with disabilities may not be able to accommodate all the set-up requirements. By and large, proctored apps use artificial intelligence (AI) to monitor student behaviour. If the AI suspects academic dishonesty the student will be flagged for the teacher to examine the case more closely.