

# Liberate Learning Online by Unwinding the Need and Opportunity to Cheat



White Paper

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The growing prevalence of online learning is a microcosm of a global economic and cultural shift toward a digitally-driven information society. Online courses present numerous benefits and challenges to students and to higher education institutions. One such challenge is the problem of cheating. In order for online learning to guarantee a learning experience that is equivalent to traditional coursework and to meet its full potential, technological structures and supports are required.





### Problems of Cheating in Online Learning

Cheating in the digital space is a major challenge toward the realization of the potential for an online course. A report in *The Journal of Legal Education* likens cheating to a form of fraud (Burke, et al., 2018). There are a triad of factors that are present in a fraud/cheating scenario. They are need, opportunity and rationalization.

The fraud triangle in online learning would involve a student's **need** for top grades. The disconnected nature of online learning provides an **opportunity**. The **rationalizations** might include, the prevalence of cheating, a low likelihood of being caught, mismatch in the expectations of students and the course instructor, and even normalization by means of social media. If hazard of cheating is correctly diagnosed, approaches that can reduce all three aspects of the fraud triangle will have the best chance to reduce cheating.



### Reduce Need for Cheating

In traditional courses there are normally a few larger components that determine the grade. A majority portion of course credit can be determined by two to four events of exams or final assignments. High-stakes assignments or exams are single events that determine a full letter grade of course credit.

James Lang, a well-known teaching methods author, proposes that high-stakes exams are a major motivation for cheating because risks of expending much effort are not necessarily guaranteed to produce desired scores (Lang, 2013). Lang proposes that an effective means to disincentivize cheating is to utilize low stakes assessments by separating large comprehensive assessments into many smaller ones. Lang cites an experiment by Karpicke and Roediger (2008) where active retrieval immediately after encoding has been shown to promote long-term retention better than

mere repetition followed by later testing. A decade of subsequent work has advanced and expanded upon this “testing effect” (Brame and Biel, 2015). As a holdover from traditional in-person courses, high-stakes testing has diminished utility for online learning. In fact, an advantage of online courses is that a multitude of small assessments are facilitated by automation of scheduling and scoring. In this way students are provided immediate feedback to recruit additional effort or reward mastery.

*An effective means to disincentivize cheating is to utilize low stakes assessments by separating large comprehensive assessments into many smaller ones.*

– James Lang, Author

Traditional in-person courses typically sample randomly out of the full set of possible assessment information for the sake of utility and the amount of time available for a large exam. The randomized selection of information accompanies a hazard for the individual student that their preparation does not match the scope of the exam. From the perspective of the student, they must either memorize everything or have some decision strategy to identify and reduce the set to what will be present on the exam. A first exam in a given course provokes much anxiety in students who are uncertain that they are focusing their efforts on information that is most likely to be covered in the exam. When instructors assist students in this process students can narrow their scope, and this is sometimes referred to as “teaching to the test.” Any effort beyond the point of study guides and rubrics often requires information outside of the intended scope of the course. This quest for outside information is one of the main origination points for paths to cheating, and it is largely driven by uncertainty of exam content. Hazards and detrimental practices are identified in **Table 1**. Ultimately, for online courses, there is no necessity for few high-stakes exams to present unacceptable risks to students who need top grades.



## Eliminate Opportunities to Cheat

The time course of assessment in online courses is different from traditional courses.

Exams in conventional, in-person courses are concurrent whereas all students start their exam at the same time and finish in the same class period. Then, afterwards, students might receive feedback or inspect the information of the exam. This is an aspect that is taken for granted in comparison with online courses where exams are usually asynchronous. The potential flow of information between students is controlled during concurrent traditional exams. Students are less motivated to communicate while they are preoccupied with completion of a time-limited exam. However, during online assessment the interval between exam completion and any feedback for one student will increase the likelihood that the student will inform other students about exam content.

Importantly, additional structures and supporting technology will be worthwhile to utilize in order to make up for the constraints that accompany a traditional in-person course. Recommended practices (Table 1) are important to make up for the heterogeneous and varied environments that students will encounter. One way to address the issue of open versus closed book exams is to explicitly control the information that is accessed during questions. Specific illustrations, graphs, tables, and text can be provided in order to provide controlled access for students. This way all students benefit equally from access to the most relevant material without the need to resort to text searches. Understanding of material often results in rapid completion of problems, where students are able to easily eliminate the incorrect distractor answers in multiple choice questions.

Canvas is a Learning Management System that supports an assortment of presentation modes for individual question items (**Table 2**). Sequential presentation of question items is useful to prevent sharing of the entirety of content with a single screenshot of copy and paste action. Importantly, one should utilize question banks of alternative question items where the correct answers and distractor answers differ depending on specific question details. After exam

completion, provide paraphrased feedback for questions missed. Restrict access to verbatim questions and answer choices where questions were correctly answered. For missed question items, identify general information pertaining to the question. Include information such as specific portions of a lecture or subsections of textbook chapters, but it is important to omit the specific verbiage of the questions and answer choices.

Honorlock is an online service that enables classification and control of student activity during learning assessment. Several recommendations for settings are indicated in **Table 3a**. There are several recording, verification and proctoring options to classify and constrain student activities during testing. Honorlock proctoring teams utilize a combination of automated and supervised processes to monitor activity during testing, and the particular combination technology enables maintenance of high throughput operations while providing live pop-in and control capabilities.

After completion of testing (**Table 3b, After Assessment**) course instructors have the ability to learn from off-line classification and analysis of various records of student activities. Importantly, the technology that Honorlock utilizes enables the use of many smaller, low-stakes quizzes. This activity minimizes need for cheating but enables the benefits of repeated recall and improved retention that accompanies many small tests.



### **Curtail Rationalization**

Although rationalization

is a consequence or corollary of the decision to cheat, in many ways, it is a prerequisite to repeated and expanding patterns of cheating. A concise and explicit guarantee to report all instances of cheating will cause students to consider consequences before initially cheating. The course syllabus is the best place to include this information, and the information can be discussed during the first week of a course. For an excellent presentation of the substance and consequence of academic integrity consider the resource provided by Massachusetts Institute of Technology ([integrity.mit.edu](http://integrity.mit.edu)).



Ultimately, the most optimal approach to cheating is to have a course structure whereas cheating is less likely to happen. In the case that it does, cheating will only be enforced based on the condition of sufficient evidence. Many institutions have honor code provisions and general policies about academic integrity. It is important to point towards these documents and to

include any others that govern student behavior. However, institution policies are usually general guidelines that are less than sufficient to enforce violations. From the principal stakeholders in academic environments viewpoints on course syllabi will range between “anything not specified is forbidden” to the view that “anything not forbidden is permitted.” Ultimately, evidence of cheating must be

organized and summarized in a persuasive line of reasoning so that any objective student or faculty will agree with the conclusion that cheating occurred. In this way, the course instructor must become both detective and prosecutor. With forewarning, some faculty never report cheating, and others who report cheating for a first time never do so a second time (Coren, 2011).

If there is a possibility that students are doing something unexpected then add exploratory content. Be prepared to deal with questions that follow students' discovery of any unusual content. As an example of this approach, consider a scenario from this author's experience where a bank for a single question item was introduced that contained several very similar versions of a question. Each version of the multiple-choice question had a different correct answer for as many choices as were present. In the case that students were sharing information during the test, the item would cause problems for these students. With the possibility that students were not communicating with each other during a test, then each version of the question should have been answered correctly and in an independent way by each student. However, during the active test there was an unusual excess of student emails during the exam about the particular question item. Much student discussion dealing with question alternatives also followed online discussion forums.



### Conclusions

In summary, online courses provide numerous opportunities for students to gain access to forbidden information. The online exam environment is intrinsically less well controlled than the typical in-person environment. Innovative technology can support online learning if used properly. Cheating

becomes less appealing when students are informed about the difficulty to obtain forbidden information and the likely discovery of forbidden actions through use of proctoring services. Honorlock supports numerous low-stakes assessments & provides a wealth of information to investigate and identify unintended student practices during exams. Learning Management Systems such as Canvas provide tools to reduce the need and opportunities to cheat. Recommended general practices are to use many, from 20 to 30, assessments that pose low-stakes risks. Generalized feedback should follow asynchronous online learning assessments, and conceptual, applied and analytical questions and problems should be randomly selected from item banks.

Academic integrity, as a shared value, is dependent on the values held by all members of an academic community. Cheating threatens all who are part of a shared system. Rationalization of student behavior becomes more difficult as counter narratives are presented. Students should be encouraged to actively support academic integrity as a valued part of learning mastery and to inform teaching staff regarding that need to be solved in the course.

**Learn more at [honorlock.com](https://honorlock.com).**



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[Read more about Ryan.](#)

Table 1

## Recommended Practices to Minimize Need & Opportunity for Cheating

Low-Stakes Assessments	A multitude of low-stakes quizzes and assignments will enable students to gauge and adjust their performance without unacceptable risk.
Test-Banks	Diversify the information to minimize overlap between students.
Concepts & Understanding	Conceptual questions reflect understanding better than definition of terminology
Limit Information Access	Access to forbidden content can be made irrelevant for closed-book assessments. Provide access to figures and tables along with individual questions. Enable students to apply their knowledge in context.
Knowledge Application	Analysis and application of information should depend on a student's understanding of material rather than verbatim textbook sources.
Trust, but Verify	Universal proctoring for all assessments lessens cheating likelihood and students habituate rapidly.
Syllabus Information	Counter potential rationalizations for cheating with clear-cut explanations of why and how cheating is a risky strategy.
Find Methods to Observe Behavior	Multiple methods of observation are necessary. Students will potentially approach online classes differently than intended, and cues and clues will not be presented without active detective work. Review usage logs, watch proctoring videos, do online searches of student discussions.
Request Feedback	Mid-term evaluation and feedback should be actively solicited from students.














### Hazards & Detrimental Activities

<p><b>Observers &amp; Scouts</b></p> <p>Students understand that, because quizzes are asynchronous, someone who has already taken the quiz will know the correct answers. If the questions and correct answers are displayed as feedback after an individual student finishes their quiz, then it's possible to share questions and correct answers with classmates who haven't taken the quiz.</p>	<p><b>Student Solidarity</b></p> <p>Even with a quiz bank, it's incredibly easy for students to pool their questions and review the entire quiz bank before even a minor portion of the class has finished the quiz.</p>	<p><b>CTRL + F</b></p> <p>A simple text search for a well-chosen term combination enables a student to turn their textbook or notes into a personal search engine. A timed open-book quiz is no match for the ability to instantly find the precise paragraph regardless of the size of a document. Students will crowdsource outlines, study guides, and even test banks from courses at other institutions. Innovative students feasibly strip text out of textbooks that are well-protected with digital-rights management in order to make a document that can be easily searched.</p>
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**Table 2**  
**Canvas Settings**

<b>Setting up</b>	Before the first quiz in the course is ever published turn on special features such as Quiz Log Auditing.
<b>Before Assessment</b>  <b>Show One Question at a Time</b>  <b>Quiz Banks</b>  <b>Time-limited Assessment</b>	<p>Display only one question at a time. Students can bookmark items to return to for deliberation, at the end of their quiz.</p> <p>Randomly select each quiz item from a small bank of similar alternatives. Similar alternative items are simple to generate for each item, but student knowledge and understanding will be necessary to decode which alternative is being used. If a system error prevents a student from finishing a quiz. A second opportunity will have new item selections.</p> <p>Timed assessment is an important aspect of assessing knowledge. With infinite time, it's feasible to search text to find every answer. Choose a standard amount of time for each quiz. Canvas will provide a countdown timer and a pop-up reminder when a quiz is about to end.</p>
<b>After Assessment</b>  <b>Avoid Verbatim Feedback</b>  <b>Asynchronous assessment</b>	<p>For an added layer of security, provide indirect feedback rather than verbatim feedback regarding the questions and answers.</p> <p>Don't display full set of quiz results until after quiz has ended for the entire class.</p>

**Table 3a**  
**Honorlock Settings**

<b>Before Assessment</b> Select appropriate Honorlock settings to structure and support the intended operations for instructions to the proctoring team and to students.				
<b>Recording options:</b>	WebCam 	Screen 	Audio 	Web activity 
<b>Verification options:</b>	360° Room Scan 	Student Picture 	Student ID 	
<b>Lock down browser options:</b>	Disable Copy-Paste and Printing  	Prevent Multiple Monitors / Displays 	Browser Guard 	
<b>Exclusive options:</b>	Multiple Device Detection 	Search and Destroy 		

**Table 3b**  
**Honorlock Settings**

After Assessment

Observe and assess information as soon as it becomes available. Summary reports from Honorlock will provide overview of students’ behavior. Honorlock’s capabilities for automated and supervised processes to monitor and classify student behavior result from from the multimodal information recorded from the computer and test taking environment.

Results

View Settings

AssetsViewerQuestionCommentsGuidelines

Assets

Questions and Comments

AssetsViewerQuestionCommentsGuidelines

AssetsViewerQuestionCommentsGuidelines

Time-line assets

There are multiple ways to move along timeline.

Forward chevron icon moves 10 seconds forward/backwards on media player.

Red bar indicates duration of timeline covered so far, and clicking on the red bar moves video back in timeline that has already been viewed.

Clicking on the timeline to the right of the red bar advances the video to a desired portion of the quiz that hasn’t yet been viewed.

3:13 / 9:19

Action

Click on triangle in rows below to play video at time points of events for questions from the quiz.

Moving the media player through points on the timeline will also move the blue highlighted rows of events. (Blue highlighting for the selected row indicates event time that corresponds to the timeline of the media player.)

Actions

Flags	Question	Time	Actions
Notice		11: AM	Web Camera Started
Success	Question 1	11:15:40 AM	Answered
Success	Question 2	11:18:15 AM	Answered
High	Question 3	11:18:22 AM	Answered (4 indicators)
High		11:20:07 AM	Accessed internet resource: copyhomework.com Operating System: iPhone, Browser: Safari

Expand event

Click on Chevron to expand all to see extensive information regarding webpage search history from track browser setting.

HighQuestion 311:18:22 AMAnswered (4 indicators)

## References

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