

# How to deter cheating on the Mastering platform

Moving your entire curriculum online can be a daunting task. The most common question on an instructor's mind is, "How do I keep my students from cheating?"

## Why do students cheat?

There are a number of external factors that can trigger academic dishonesty in students. The most commonly cited reasons for cheating are<sup>1</sup>:

- Not completing their work in a timely manner
- Being motivated by grades rather than by learning
- Problems are "too difficult"
- Professors giving nonspecific guidelines

While intrinsic motivation is something professors don't have control over, we do have control over many other conditions.

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*"Students in school cheat not to get the 'A,' but to avoid the 'C.'"*

Charles Duhigg

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## When do students cheat?

It's unclear whether students cheat more in online classes than in blended or traditional ones<sup>2</sup>. It is known, though, that the internet makes cheating easier, because all forms of information discovery and reuse are now easier.

In an MIT study on copying<sup>3</sup>, the authors monitored copying by developing algorithms that gave a probability that a particular submitted solution had been copied. They also administered a dishonesty survey and conducted follow-up interviews with students. Overall, the educators at MIT found that "students are more likely to copy a problem if it is more difficult, if it is later in the assignment, if they do it closer to the deadline, or if the assignment is later in the term".

They discovered that student copying grew rapidly in the first three weeks of the term, probably indicating increased academic load as well as time to form social networks that facilitate cheating. Student copying increased dramatically after midterm exams as well. The student survey and interviews confirmed that copying was most likely due to time pressures that build over the term and are exacerbated by delaying the start of work until the day it is due.

## What can you do to discourage cheating?

The majority of students initially don't set out to cheat in any given course. Setting ground rules early and engaging in frequent communication with your students will go a long way towards fostering an inclusive learning environment.

<sup>2</sup> Stuber-McEwen, D., Wiseley, P., & Hoggatt, S. (2009). Point, click, and cheat: Frequency and type of academic dishonesty in the virtual classroom. *Online Journal of Distance Learning Administration*, 12(3).

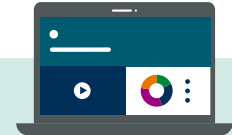
<sup>3</sup> Palazzo, D. J., Lee, Y. J., Warnakulasooriya, R., & Pritchard, D. E. (2010). Patterns, correlates, and reduction of homework copying. *Physical Review Special Topics-Physics Education Research*, 6(1), 010104

## Talk to your students



- Explain the correlation of the time spent on a task and course success.
- Remind students that cheating on assignments only hurts them in the long run.
- Show them the MIT study on copying on the first day of class to show them that repetitive copiers score lower on exams.

## Choose assignment content that minimizes cheating



- Avoid multiple-choice items. They're relatively easy to cheat on and give students the impression that learning is simply a matter of finding (or guessing or asking a friend for) the right answer.
- Give students assignments rich in Mastering™ tutorial and coaching activities. These kinds of publisher-provided content are specifically designed to help students learn by breaking assignment items into simpler questions, so that students who are having difficulty can get help from the item itself. The feedback students receive from the system is answer specific.
- Assign a variety of answer types: labeling, matching/vocabulary, numeric/symbolic, ranking, simple text or essay, sorting, and so on. When selecting content for assignments, use the item filters to find specific answer types quickly.
- Select items that have randomized variables, when available for your course. Look for the icon to the left of the item name in the Item Library.
- Pool the assignment and randomize the item sequence. Do this from the organize content step of creating an assignment.
- Choose personalized assignments. These are the most difficult kinds of assignments to cheat on. Mastering provides two kinds of personalized assignments — Adaptive Follow-Up Assignments and Dynamic Study Modules. Both options are available with select textbooks.

## Use assignment settings



- Hints coaching: Accept the default assignment presentation and grading settings for the homework assignment category, especially for the display of hints. These settings are designed to reward honest work.
  - Statistically, students who use hints when they need them get higher final grades even when professors charge a penalty for opening hints. Mastering makes cheating unprofitable by making honesty more profitable.
- Settings to prevent cheating: The assignment presentation and grading settings let you hide correct answers, hide item titles, randomize item sequence, require a password, pool items, set a time limit, or lock students out of a completed assignment after its due date.
- For more about this, see the Implementation Guide on assignments, including “Create or Edit a Homework Assignment”, “Create a Low-stakes or High-stakes Quiz or Test”, and “Identify Successful Assignment Types to Achieve Results”.

## Use the Simple Editor to add or edit questions



- Use the Simple Editor to change the wording of the problems enough that students would have a difficult time finding the solution online.
- Add questions to Mastering about material that you covered in class. You can also import content into Mastering.
- Create your own randomized questions with the Simple Editor.
  - Use variables to vary item content
  - Add variables to randomize questions — [watch the video](#) to see how.



## Manage your course

- Close course enrollment after your students are in. Once all expected students have signed up, go to course settings and close the course to prevent further enrollment. This can prevent potential phantom accounts being created by cheaters.
- Add material from Mastering into your exams. If students know that content from Mastering will show up on their exams, they will pay more attention to it.
- If you assign pre-lecture assignments in Mastering, you don't have to cover everything in class. Make sure to adjust your teaching based on how students perform on these assignments. When students know you do this, they'll be more motivated to take the assignments seriously and will find class time more useful.



## Use Learning Catalytics

- At the beginning of the semester, share the analysis<sup>4</sup> of how students in active learning courses do better than traditional lecture courses.
- Incorporate concepts and learning outcomes from your Learning Catalytics sessions into your exams and any other assignments to make the in-class experience a productive one for students.
- Consider using different kinds of active-learning activities. These may include knowledge questions, discussion questions, conceptual questions, case studies, and data-driven problems. Learning Catalytics allows you to pose questions to students in the most natural and "authentic" way possible (avoiding multiple-choice format).
- Questions should challenge students appropriately by being neither too easy, nor too hard. Somewhere between 30-70% of students should answer a question correctly on their own before discussion.

<sup>4</sup> Freeman, S., Eddy, S. L., McDonough, M., Smith, M. K., Okoroafor, N., Jordt, H., & Wenderoth, M. P. (2014). Active learning increases student performance in science, engineering, and mathematics. *Proceedings of the National Academy of Sciences*, 111(23), 8410-8415.

## Find the problem before it starts

Be proactive about finding those students most at risk of cheating at the beginning of your course. Watch for students who are getting low grades in the first several weeks. Mastering's gradebook color-codes performance, making it easier to spot students who might be struggling. **Intervene early** to help them get back on track. It's typically the lower performing students who are most tempted to cheat.

**Look at the time spent on an assignment.** You can check how long students spend on an assignment by displaying the time tab or by exporting times or difficulty ratings. Once the assignment is due, use the diagnostics tool to display student scores alongside student time, to see students who got high scores in a very short time. Compare student assignment times, low to high, with student assignment scores, high to low. A persistent pattern of high scores and low times has been associated with students who copy and may indicate students of interest.

**Look for patterns of possible answer sharing.** From the Gradebook you can drill down to see a student's work on an individual assignment, including any item, item part, or individual answer. Examining the individual work of multiple students can reveal patterns of possible answer sharing. Time of submission can also be important. A discrepancy between high homework grades and low quiz/test scores may be indicative of an issue.

## What other solutions does Mastering have?

- Track all student work submitted. When a student works on an assignment, every answer submitted, whether correct or incorrect, is immediately recorded in the Gradebook with the date and time of submission. Even if a student submits only a single incorrect answer in one part of a multi-part item, and then exits Mastering, the entry is recorded and viewable in the Gradebook. For that reason, it's not possible for "the computer to lose" an entire test or assignment.
- Get a user activity report from support. If more details are needed, a user activity report can be requested from support that shows student login date and times, student answer submission dates and time, and details on what the student accessed while logged in. Reports can be requested for specific assignments.

- Check low performing students at a glance. The Gradebook allows you to quickly look for a student with a bright red row of low grades or zeros. Check your Mastering gradebook roster against the class list and suspend possible “phantom” students.
- Create a group to check common patterns. The group feature (add new group from the roster) allows you to create a group for students you suspect may be cheating together and examine their work as a whole to see whether suspicious patterns emerge.
- Report answer sharing sites. Pearson searches constantly for sites that post answers to questions and takes prompt action to shut them down. If you find such a site, please report it at <http://www.pearsoned.com/report-piracy/>.

## Additional resources

### Mastering

- [Mastering Quick Start Guide](#)
- [Mastering Security Features](#)
- [Mastering Instructor Support](#)

### Modified Mastering

- [Modified Mastering Quick Start Guide](#)
- [Modified Mastering Instructor Support](#)

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