

eBook

Exam Security

Protecting the Integrity of Exams
and Assessment Data



Why is Exam Security so important?

The answer will probably depend on who's asked, but ultimately it comes down to protecting the integrity of exams to make certain the assessment data that's collected from the student is reliable and accurate.

The confidence that comes from having truly insightful, actionable student assessment data originates from knowing the data is not skewed due to cheating. After all, how dependable can exam data be if the exams themselves can be compromised? Before any information can be collected, analyzed, and put to good use, the first step should be to ensure exams are fair by taking proper measures to deter and prevent cheating.

Understanding the Problem

How Far Does Cheating Go?

Even in this modern era of viable education technology and computer-based testing solutions, cheating can still be a problem many educators worry over. To better understand the need for exam security, it's important to review its impact on student learning as well as the extent of academic dishonesty in higher education.

Exam security is what allows educators to confidently evaluate performance data and provide students with timely, content-specific remediation strategies. The results of any remediation strategy, however, are dependent on performance data being completely accurate. Without exam security, there's an open door for academic dishonesty that makes performance data unusable and student remediation ineffective.

▶ **If students are finding ways to cheat, then exam security is lacking.**





A study conducted by Dr. Donald McCabe of Rutgers University and the International Center for Academic Integrity measured the extent of academic dishonesty among graduate students and undergraduate students, compiling data based on surveys conducted between Fall 2002 and Spring 2015 [1]. Although the results (Table 1) show more undergraduate students admit to cheating than graduate students, cheating is still prevalent among both groups to a significant degree.

Table 1

Overall Trends 2002-2015	Graduate Students	Undergraduate Students
Estimated number of respondents	17,000	71,300
Admitted to cheating on exams	17%	39%
Admitted to cheating on written assignments	40%	62%
*Data excludes first-year students, code schools, and two-year schools.		

[1] Statistics, International Center for Academic Integrity, 2017, academicintegrity.org/statistics/.

A separate study by Dr. Donald McCabe of Rutgers University shows the percentage of students who have engaged in academically dishonest behavior at least once, as well as faculty who have observed the behavior themselves. The survey results (Table 2) collects responses from 64,000 undergraduate students, 9,700 graduate students, and 9,650 faculty from colleges and universities in both the U.S. and Canada from 2002 to 2005 [2].



Table 2

Cheating on Tests and Examinations

	Undergraduate Students	Graduate Students	Faculty Observing the Behavior
Learning what is on a test from someone who has already taken it	33%	17%	35%
Using false excuse to delay taking test	16%	9%	49%
Copying from another student on a test/exam <u>without</u> their knowledge	11%	4%	41%
Copying from another student on a test/exam <u>with</u> their knowledge	9%	3%	33%
Helping someone else cheat on test	10%	6%	29%
Using unauthorized crib/cheat notes	8%	4%	26%

[2] McCabe, Donald L. "Cheating Among College and University Students: A North American Perspective." *International Journal for Educational Integrity*, vol. 1, no. 1, 2005, pp. 2-3., www.ojs.unisa.edu.au/index.php/IJEI/article/view/14/9.

Student Perceptions

It's widely accepted in academia that students won't learn the course material as well as they should if they cheat on exams, but cheating can be difficult to prevent without exam security because dishonest tendencies may often stem from differing student perceptions of college and the purpose of education.

Many students attend college with the belief that earning a degree will ultimately lead to satisfactory employment upon graduating; consequently, students could consider cheating an acceptable way to obtain this goal [3]. Furthermore, there are studies that have consistently indicated that students are more likely to cheat if they observe other students cheating or if they perceive that cheating is commonplace or acceptable among peers [4]. Therefore, while temptations to cheat may always be present in some form in higher education, it's vital that educators continue to work toward reducing the ways in which students can engage in academically dishonest behaviors.



An exam process that does not successfully prevent the opportunity for students to cheat through proven exam security is doing a disservice to students' learning process and future academic success. The level of academic integrity that is expected of students throughout their academic careers should be reinforced with opportunities to see how their exam performance truly reflects their personal knowledge of the content.

[3] Andrade, Alison. "The Cheating Epidemic: Reducing Academically Dishonest Behaviors Amongst College Students." *ACPA College Student Educators International*, 1 June 2015, www.myacpa.org/article/cheating-epidemic-reducing-academically-dishonest-behaviors-amongst-college-students.

[4] Gerdeman, Dean R. "Academic Dishonesty and the Community College." *ERIC Digest*. ERIC Institute of Education Sciences, Office of Educational Research and Improvement (ED), Washington, DC, July 2000, eric.ed.gov/?id=ED447840.

There are the typical ways to increase exam security, but how much strain is put on educators?

In order to maintain an optimal and controlled learning environment, most colleges and universities have policies and guidelines that address academic dishonesty including what educators should do if a student is caught cheating.

For example, the University of Illinois' Center for Innovation in Teaching & Learning (CITL) recommends educators take numerous precautions to curb attempts at cheating [5]. Many of the recommendations do not account for the use of computer-based testing or lab environments, and can also require much greater time commitments on the part of educators. Other recommendations, like the need for suitable proctoring/invigilation, may drive up institution costs and make the entire exam process impractical.

University of Illinois' CITL Recommendations

- Write new tests each semester, or whenever possible. By doing this, students are less likely to use past students' exams to gain an unfair advantage.
- Prepare more than one form of the exam. You can have the same questions on each form, but (1) Present questions in a different order on each form, or (2) Vary the order of the response alternatives.
- Pre-code answer sheets and test booklets by using a numbering system so that the number on each test booklet matches the one on each student's answer sheet.
- Require students to bring their student IDs and another form of identification to each exam. To implement this requirement, have proctors look carefully at each ID and student.
- Systematically hand out alternative forms, taking into account students sitting laterally as well as those sitting in-front and in-back of each other.
- Have sufficient proctors/invigilators for the exam; recommended one proctor/invigilator per 40 students.

[5] "Dealing with Cheating." Illinois CITL, citl.illinois.edu/citl-101/teaching-learning/resources/classroom-environment/dealing-with-cheating.

There are some experts who argue that cheating is not a high-priority concern for university leaders and, as a result, faculty claim they are not trained or supported well enough to properly combat instances of academic dishonesty [6]. However, despite having guidelines and recommendations created for the purpose of minimizing cheating in and out of the classroom, there may be instances where faculty are ignoring them completely.

According to research by Arthur Coren, 40.3% of faculty members included in a study admitted to ignoring student cheating on one or more occasions. The stated reasons for ignoring cheating included insufficient evidence, triviality of the offense, and insufficient time; and faculty who ignored academic integrity violations felt more stressed when speaking to students about cheating. [7] Therefore, institutions that invest in more pragmatic solutions that are specially designed to save time and effort on behalf of faculty and staff could help minimize academic dishonesty more effectively.



[6] Callahan, David. "Faculty Need More Support to Go After Cheaters." *Huffpost*, 25 May 2011, www.huffpost.com/entry/faculty-need-more-support_b_787714.

[7] Coren, Arthur. "Turning a Blind Eye: Faculty Who Ignore Student Cheating." *Journal of Academic Ethics*, doi:10.1007/s10805-011-9147-y.

The Digital Era & Higher Education

Online Courses

Today's institutions are face-to-face with the digital era, but can educators really expect cheating to be any less a problem for online courses as live class environments?

A survey of 635 undergraduate and graduate students, conducted by George Watson and James Sottile of Marshall University, compared cheating behaviors in online courses and campus courses [8]. The results (Table 3) showed nearly 33% of respondents admitted to cheating in an online class at some point in their higher education coursework, similar to the 32% who admitted to cheating in a live class. Furthermore, the number of students who admitted to being caught cheating is staggeringly low, accounting for just 2% in an online class and 5% in a live class.

Table 3

Students Self-Reporting Dishonest Behaviors for Live and Online Courses

Survey Statement	Live Class Percentage	Online Class Percentage
I have cheated on an assignment, quiz, or test	32.1%	32.7%
I have been caught cheating	4.9%	2.1%
I have had someone give me answers during a class quiz or test	18.1%	23.3%
I have received answers to a quiz or test from someone who has already taken it	33.2%	20.3%
I have used instant messaging through a cell phone or handheld device during a quiz or exam	3.0%	4.2%

Watson, George, and James Sottile. "Cheating in the Digital Age: Do Students Cheat More in Online Courses?" *Online Journal of Distance Learning Administration*, vol. 13, no. 1, 2010, <https://eric.ed.gov/?id=EJ877536>.

Computer-Based Testing

Exams should be delivered in a way that proactively prevents cheating, and there is an increasing number of methods to do so with the improvements in education technology. Transitioning to computer-based testing can be a solution worth exploring to give students a level playing field when it comes to exam day, while helping make educators' lives easier in turn. However, without proven exam security features, computer-based testing can still be flawed.

Taking a screenshot of an exam question can be done with a few quick keystrokes that even the most perceptive proctors/invigilators can miss completely. Of course, those captured questions can then be easily distributed to other students through websites and apps used to help cheat, which seem to be ever-increasing in popularity [9]. While there should still be some element of proctoring/invigilation on exam day, utilizing an assessment platform that completely secures exam takers' computers is mission critical.



A complete computer-based testing solution should be able to provide an abundance of security features while being easy for faculty to manage and invisible to students.

Learning Assessment Platforms

Knowing Which Features Will Protect Exam Integrity

As many educators know, students looking to “beat the system” may still find inventive ways to cheat with basic computer-based testing solutions. That’s why it’s important to understand what key features of a complete learning assessment platform will provide more reliable exam security.

[9] McKenzie, Lindsay. “Learning Tool or Cheating Aid?” *Inside Higher Ed*, 14 May 2018, www.insidehighered.com/news/2018/05/14/professors-warned-about-popular-learning-tool-used-students-cheat.

When searching for the right assessment solution with proven exam security features, here's what educators should look for:

- **Device Locking**

Any testing service that requires the use of standard or locked down web browsers is often susceptible to cheating through the use of “virtual machines” that can bypass security features. Only an assessment platform that completely locks down the student device itself, and works without the use of a WiFi connection, is truly secure and should be the minimum requirement for any program wanting to deter academic dishonesty completely.

- **Auto-Randomizing**

Educators and administrators should enjoy peace of mind knowing questions cannot be compromised after students complete an exam. The ability to auto-randomize both questions and answers, for one or multiple exam variations, can make it significantly more difficult for students to copy specific exam items for other students to use in the future.

- **Expanded Solutions**

For the educators who know it's always better to be safe than sorry, an assessment platform that can integrate expanded product solutions, like student ID verification and virtual remote proctoring/invigilation capabilities, can add truly unmatched exam security and effectively prevent virtually all forms of academic dishonesty.

- **Question Review**

In addition to the benefits of a completely locked-down device, another key element for more advanced exam security features revolves around maintaining a secure and controlled environment in which students can immediately review the correct answers to any questions they missed once an exam is completed. This way, educators avoid running the risk of exam questions being erroneously shared with other students.

- **Category Tagging**


With capabilities that allow for customizable category tagging, student performances can be measured against specific learning outcomes. Students can be provided rationale and meaningful feedback without the need to review or distribute old exam questions—protecting exam integrity and ensuring questions can be reused multiple times, on multiple exams.


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In all consideration, it may be said the value of exam security extends beyond stopping students from cheating on any one exam. It creates a culture of fairness and a measure of a program's credibility and integrity. It also ensures the reliability of the data collected, which can be used to provide students actionable insights to learn from past exam performances and improve future learning outcomes.



To learn more about how ExamSoft can provide a secure, reliable exam day experience, request your personalized demo today.

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