



FULLY ONLINE MATH COURSES:

Cheating and Proctored vs. Unproctored Assessments



ONLINE EDUCATION IS A REALITY

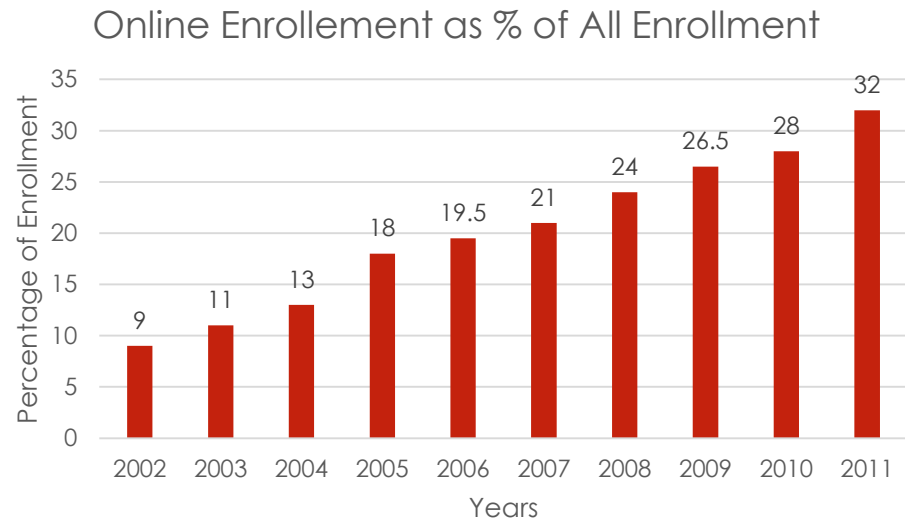
Online Education is critical to my college and my school's (Kinlin School of Business) long range plans and success

As I am sure it is to other colleges and schools

- Increased enrollment
- Decreased cost

ONLINE EDUCATION IS A REALITY

Demand for online courses is increasing and continues to increase (Allen, I. and Seaman, J. (2014))



Trend in percent of students taking at least one online course in American degree-granting colleges and universities, 2002–2011, Source: Adapted from data in Allen and Seaman (2013 The Impact of Exam Environments on Student Test Scores in Online Courses (PDF Download Available). Available from: https://www.researchgate.net/publication/276366299_The_Impact_of_Exam_Environments_on_Student_Test_Scores_in_Online_Courses [accessed May 24, 2016].

- From 9% of enrollments in 2002 to 32% of enrollments in 2011
- Allows asynchronous education so students not suited to the face to face education course can participate: working students, non traditional students and part time students and so on.

ACADEMIC INTEGRITY

In a product-based world where institutions of higher learning offer services focused on a somewhat elusive product (a specified knowledge base in a given discipline or disciplines, acknowledged by degrees from those institutions), it is critical that the institutions can attest to the value of the products they offer. If an institution claims to provide a service, they must *prove* to society that they do so by some formally recognized assessment mechanism; otherwise, their reputation may come into question causing potential problems with recruitment, enrollment, and even accreditation. In large measure, accurate assessment methods help to insure the survival of educational institutions (Rowe, 2004, p. 2).

Academic integrity in both face to face and online is imperative to our institutions.

ONLINE AT FANSHAWE COLLEGE

- At the Kinlin School of Business we have or are in the process of putting EVERY math course and business program into an online format.
- In a first semester business math course there are four unit tests.
- In first semester General business program there 6 are courses.
- At least three of these courses require “proctored” tests with up to four tests per course

ONLINE AT FANSHAWE COLLEGE

A student has three options to write these “proctored” test.

Face to Face
No Cost

Proctoring Centre
\$40 Canadian

B-Virtual
\$25 American

Problem 1: This is a nightmare to track and execute.

Problem 2: If a student chooses to use the last two options the cost of their semester has increased by $12 \times \$40$, a significant expense.

ONLINE AT FANSHAWE COLLEGE

- We have to be sure that our online assessments reflect academic integrity
- We have to reduce costs and increase accessibility to our online students

AND

- Work smarter
- So investigating online Math assessments without formal proctoring, one size fits all?



CHEATING IN THE ONLINE ENVIRONMENT

Is there more cheating in the Online Environment?

- Certainly many “believe” there is more cheating.
- Certainly studies support that student willingness to cheat has increased exponential in the past decade both online and face to face

73 PERCENT

Of all test takers believe that every student cheats at one point in their academic career



Students paraphrasing from
the internet without footnoting

36% Undergraduate
24% Graduate



Students paraphrasing from
books without footnoting

38% Undergraduate
25% Graduate



Students that copy nearly
word for word without citation

7% Undergraduate
4% Graduate

Why? Students will do whatever it takes to get an "A"

Academic dishonesty

Academic dishonesty is a problem online and on campus



In a study of 635 undergraduate and graduate students

33% admitted to cheating in online classes

32% admitted to cheating in traditional classrooms

2% of online students were caught cheating

5% of students in a traditional class were caught cheating

CHEATING IN THE ONLINE ENVIRONMENT

BUT there is evidence that cheating in the Online Environment is a bigger problem than face to face?

Most studies suggest that academic integrity is a problem with both face to face AND online and there is not a statistically significant difference in cheating in the online vs. the face to face assessment. (Hollister and Berenson, (2009); Stuber-McEwen et al. (2009); Steven Stack (2015))

Caveat: Assuming the online assessment is properly structured. Wachenheim

CHEATING IN THE ONLINE ENVIRONMENT

How do students cheat in the online environment (Math only)?

Identity misrepresentation – having someone else write the assessments

Sharing information between sessions - student or sacrificial lamb, taking test first, record the answers and/or copy the questions then disseminate to others.

Students team up and do test together (not a problem with truly distance learners.)

Cheat sheets, note books, unauthorised helps.

Inappropriate access on online resources during the test



A PROPOSAL FOR ONLINE NON-PROCTORED ASSESSMENTS

Have non-proctored assessments online in our Business Math courses.

Specifically designed so address issues of cheating and academic integrity

A PROPOSAL

1. While writing the test students will be required to use *Respondus Lockdown Browser (RBL)* to “access” the exam.
 - RLB is a special browser where students are “locked” into the exam. They are unable to exit/return, cut/paste, or electronically manipulate the system.
 - An advantage to the student is that RLB creates a more stable Blackboard platform which is not likely to lock up or freeze students out when they submit their exam answers.
 - Easy to access, download and use.

**Addresses:
Searching internet
Copying, printing and
disseminating assessment.**

A PROPOSAL

2. Carefully create a test that requires the time set and enforce it. This focuses the students on the test, not on cheating
 - The goal is for the “A” and “B” students to complete the exam with little more than a few minutes left. The “C” and “D” students may or may not complete the exam. These students have a trade-off dilemma to solve. .
 - Assume the tests are open book. Thus the students may verify a tough definition or find a unique formula. However, **they do not have time to learn the theory nor learn how to solve the problems.**

**Addresses:
Searching internet
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A PROPOSAL

3. Create a test with a bank of unit test questions with questions **and** answers randomized.

- Instructors should change at least one third of the questions each term. This rotation of questions gives instructors the equivalent of a new test every three terms.
- No two tests have the questions in the same order. If two students take the test at the same time won't be able to work through each question at the same time.
- No two tests have the same exact question or answer.

Addresses:

Students working together.

Copying, printing and disseminating assessment to others.

A PROPOSAL

4. Create a test with no ability to back track. Once a student answers the question they can't go back and change their answer.
 - Minimizes opportunities for cheating. If students take the test together and discover that they had the wrong answer 10 minutes ago, you can't go back and give the perceived correct answer.

**Addresses:
Students working
together.
Copying, printing and
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assessment to others.**

A PROPOSAL

5. Take the test ONCE no further access.
No Exam Resets.

Students are advised:

- (1) do not use wireless,
- (2) take the exam in a library, computer lab, or testing center, and
- (3) save each answer individually, before submitting the exam.
- (4) If a thunder storm, Blackboard outage, or act of God occurs, then students are advised to contact Blackboard IT immediately for an analysis. If Blackboard IT confirms the problem was not the student's fault, the exam may be reset.

**Addresses:
Searching internet
Copying, printing and
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assessment to others.**

IN CONCLUSION

Assessments in online have to address academic integrity and student needs.
(time, distance and cost)

Students will always cheat and increasingly want to cheat whether it be online or face to face. Some students will attempt to cheat in spite of our best efforts.

Research suggests there is little statistically significant data that students cheat MORE online. Even with proctors, we all know grim stories of collusion and “cheating”.

A properly crafted and implemented assessment can provide **reasonable assurance** that cheating is absent (like an audit)

- Internal controls are implemented to raise the cost in the cheater's cost/benefit analysis.

IN CONCLUSION

Will be implementing unproctored online assessments with in Business Math courses in Fall of 2016.

Will compare class results with previous proctored online assessments from same course, same instructor from previous semesters.

**Thanks for
your time!!**



CHEATING CONCERNS

- 1) ensuring the student's identity (is student taking the test him/herself or getting outside help?),
- 2) discomfort of faculty with technology;
- 3) can online tests evaluate difficult concepts?,
- 4) how does online testing limit student's options?,
- 5) how can qualitative results be determined online?,
- 6) will wording on online test affect students' responses?,
- 7) ease of technology for student use;
- 8) ease and timeliness of data collection, and 9) difficulty of administering an online test (Mallory, 2001, p. 2).