# Maintaining Academic Standards and Integrity

# in Online Business Courses

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# Abstract

As the number of online courses being offered at universities has increased dramatically over the past several years, the level of oversight has lagged and created an environment ripe for cheating. We find that students admit to higher levels of cheating in online classes and believe other students also cheat more relative to face-to-face classes. This is likely due to the lack of tools to combat online cheating and the lack of policy from universities. We know from previous studies that business colleges have a comparatively high level of cheating and the amount of cheating at universities has been rising. These trends threaten to create an unfair system where cheaters are rewarded with higher grades than non-cheaters, thereby encouraging otherwise honest students to cheat. This may result in declining and erratic knowledge among university graduates, diminishing the value of a university education.

Keywords: higher education, online learning, academic integrity, cheating

#### 1. Introduction

Extensive research has been conducted on cheating in face-to-face classes and more research is examining cheating in online courses as they grow in popularity. Enrollment in online classes has been growing five times faster than total enrollment, and over 30 percent of college students were enrolled in an online course in 2012 (Bailey, Barton, & Mullen, 2014).

Studies consistently show that cheating is common among college students. Whitley (1998) reviewed 46 studies on cheating from 1970 to 1996 and found the average for total cheating prevalence exceeded 70 percent. Mangan (2006) found that 47 percent of nonbusiness graduate students and 56 percent of business graduate students admitted to cheating. In addition to being common, cheating appears to be a growing problem. Ogilby (1995) found that college-level cheating had increased from 23 percent in 1940 to 84 percent in 1982. McCabe, Trevino, and Butterfield (2001) similarly found that cheating on exams had increased from 39 percent in 1963 to 64 percent in 1993. Teachers expect cheating to increase due the rising use of e-assessments according to Mellar, Peytcheva-Forsyth, Kocdar, Karadeniz, and Yovkova (2018).

The potential to get exam answers from others, have outside assistance, and use unauthorized material is a much more serious problem for online classes. Typically, students take face-to-face exams at the same time with a reasonable amount of monitoring. Online students are often given a window of time to complete their exams and may photograph or screenshot exam questions to provide to other students. Nearly all publisher test banks are available online. Students can often search the Internet and find the exact question and answer quickly. This is difficult to do in a monitored classroom. Students may also get someone else to do their work. Although this may also happen in face-to-face classes, it is much more likely to occur in unmonitored online classes because the likelihood of being caught is much lower.

Research comparing the levels of cheating in face-to-face and online classes takes two approaches. The most common approach to determine whether cheating is more prevalent in online classes has been to measure the difference between online and face-to-face test scores. The results have been mixed. Peng (2007), Schultz, Schultz, and Round (2008), and Yates and Beaudrie (2009) found no statistical difference in test scores and concluded there was no additional cheating in online classes. Rakes, Fields, and Cox (2006), Kibble (2007), and Harmon and Lambrinos (2008) found online students had significantly higher test scores, which may be attributed to cheating. A

drawback to this approach is that a difference in test scores, or lack thereof, does not provide much evidence of cheating. Students may simply adjust their study efforts to compensate for the ability to cheat.

Student surveys have also been used to measure cheating and perceptions of cheating in online classes. King, Guyette, and Piotrowski (2009) found that nearly 74 percent of students reported it was easier to cheat in an online class compared to a face-to-face class. Miller and Young-Jones (2012) surveyed students in both face-to-face and online classes. Students believed it was easier to cheat in online classes. However, students taking only online classes reported lower levels of cheating.

The Federal Higher Education Opportunity Act (2008) requires universities to verify the identity of students taking online exams. The use of proctors is one method to meet that requirement and reduce the likelihood of cheating in online classes. A proctor can verify the identity of the student and monitor for unauthorized materials. Fask, Englander, and Wang (2014) examined the performance of students taking the same class at the same time. All students took an in-person midterm exam, but half took an online, unproctored final while the other half took an in-person final. After controlling for their midterm exam performance and other factors, the unproctored group had significantly higher scores on the final. The authors concluded that students taking online exams have an unfair advantage due to cheating. Hylton, Levy, and Dringus (2016) compared monitored and non-monitored students and concluded that web-based proctoring can decrease cheating on online exams.

A university diploma provides a certification of knowledge and is a substantial portion of its value to the university students and community. Higher levels of cheating reduce the level of knowledge of graduates and are a threat to the value of the institution. Higher levels of cheating also create a disconnect between student ability and GPA as cheating students receive higher grades than honest, knowledgeable students.

We have three objectives for this study. First, we survey students about cheating in business courses. The survey helps us gain insight into the following questions:

- Is cheating more prevalent in online courses than in face-to-face courses?
- What course assessment methods lead to a higher occurrence of cheating?
- What are common methods students use to cheat in online courses?
- What motivates students to cheat?

The second objective is to raise awareness about the prevalence of cheating in online versus face-to-face courses. We believe that many faculty members do not realize and therefore do not take steps to reduce the ability to cheat in online courses. Although there is research available regarding cheating in online courses, there is little research relating it to business schools.

Our final objective is to provide recommendations for reducing cheating in online courses. Although it is impossible to eliminate cheating, universities should continually try to reduce it by adjusting policies and course-delivery methods. There are steps that substantially reduce the prevalence of cheating in online classes.

# 2. Methodology

The face-to-face classes surveyed contained primarily business majors nearing graduation. We focus on senior-level classes because seniors typically have taken more classes, both face-to-face and online, and are more likely to offer candid answers as graduation approaches. The survey was voluntary and anonymous. There were 146 surveys completed out of the 183 distributed.

The survey consists of eight sections. The first three sections ask questions regarding demographics, preferences, and the number of online classes the student has taken. The fourth and fifth sections gather information on whether students have witnessed cheating and whether students have been caught cheating. The sixth section gives insight into the prevalence of cheating in face-to-face and online courses. The seventh section examines the motivations for cheating and the eighth section concludes by asking for comments.

# 3. Results

# 3.1 Demographic Information

Table 1 analyzes the demographics of our survey respondents. The target group of seniors represent 94.5 percent of our sample and juniors make up the remaining 5.5 percent. Males provide 71 percent of the 146 responses, and 57 percent of the students have jobs. Most of the students are business majors. Finance is 28 percent of our sample with the next highest coming from accounting at 25 percent. Insurance and management are both above 10 percent. An overwhelming majority of the students, 88 percent, preferred face-to-face over online classes.

Table 1. Demographic information for survey respondents

 Attribute	Number	Percent
Classification		
Junior	8	5.5
Senior	138	94.5
Gender		
Female	42	28.8
Male	104	71.2
Employed		
No	62	42.5
Yes	84	57.5
Major		
Accounting	43	24.7
CIS	6	3.0
Economics	2	1.2
Finance	49	28.2
Hospitality	2	1.2
Insurance	20	11.5
Int'l Business	10	5.8
Management	18	10.3
Marketing	14	8.1
Other	10	6.0
Preferred class type		
Face-to-Face	123	87.9
Online	17	12.1

# 3.2 Respondents' Knowledge of Cheating

The survey results regarding the frequency and types of cheating in both face-to-face and online classes are given in Table 2. Students could respond with never (1), rarely (2), sometimes (3), often (4), or always (5). Less than 30 percent of students admit to cheating in face-to-face classes whereas more than 50 percent admit to cheating in online classes. Nearly 10 percent admit to cheating "often" or "always" in online classes.

		1	Face-to-	-Face (	%)		Online (%)					
Behavior	1	2	3	4	5	Mean	1	2	3	4	5	Mean
How often you cheat	71.9	24.7	3.4	0.0	0.0	1.32	46.6	24.7	19.2	7.5	2.0	1.94
How often friends cheat	32.9	44.7	19.6	2.8	0.0	1.92	14.0	30.8	33.5	18.9	2.8	2.66
How often other students cheat	6.3	37.8	47.5	8.4	0.0	2.58	3.5	20.1	41.0	29.9	5.5	3.13
Students copy assignments	19.2	34.9	36.3	9.6	0.0	2.37	11.0	26.9	37.9	22.1	2.1	2.77
Students plagiarize	29.9	42.4	21.5	6.2	0.0	2.04	26.6	38.4	23.8	10.5	0.7	2.20
Copy from others during exams	26.7	45.2	24.0	4.1	0.0	2.06	19.3	28.3	28.3	21.4	2.7	2.60
Get answers prior to exam	16.7	39.6	30.5	13.2	0.0	2.40	16.6	22.8	33.1	24.1	3.4	2.74
Use notes or search online during exam	44.8	35.9	16.5	2.8	0.0	1.78	14.5	12.4	30.4	31.0	11.7	3.13
Assistance from others during exam	45.1	38.2	14.6	2.1	0.0	1.74	13.1	25.5	33.1	22.8	5.5	2.82

#### Table 2. Respondents' knowledge of cheating

Survey results regarding knowledge of cheating by students where the choices were never (1), rarely (2), sometimes, (3), often (4), and always (5).

Students believe cheating is higher among friends and other unacquainted students. Three percent of respondents believe their friends cheat often (4) or always (5) in face-to-face classes compared to 22 percent in online classes. Other students, students unknown to the survey respondent, are believed to cheat often (4) or always (5) at a rate of 8 percent and 35 percent in face-to-face and online classes, respectively.

The students were asked to specify what type of cheating is occurring. Students believe that cheating is more prevalent in online classes across all categories. We looked at the totals from the often (4) and always (5) categories to reveal where the significant cheating is believed to be occurring. Ten percent of students believe that others copy assignments in face-to-face classes compared to 24 percent in online classes. Plagiarizing assignments happens 6 percent of the time in face-to-face and 11 percent in online classes. Respondents believe that students have copied from others during an exam at a rate of 4 percent and 24 percent in face-to-face and online classes, respectively.

Thirteen percent of students are getting answers before an exam in face-to-face classes compared to 27 percent in online classes. Only 3 percent are using notes or searching online during an exam in face-to-face classes compared to 42 percent in online classes. Students receive assistance from others during an exam at a rate of 2 percent and 28 percent in face-to-face and online classes, respectively. These last two categories, using unauthorized material and receiving assistance from others during an exam, are substantially higher for online classes and should receive additional attention to lower the prevalence of cheating.

# 3.3 Cheating Differences between Face-to-Face and Online Classes

Table 3 shows the mean difference in the prevalence of cheating between face-to-face and online courses. Across all categories, the difference between cheating in online and face-to-face classes is positive and significant. Getting help on homework or other assignments was expected but the amount of cheating on exams is remarkable. Using notes or searching online and getting exam assistance from others have the highest difference.

Behavior	Face-to-Face	Online	Difference	T-statistic
How often you cheat	1.32	1.94	0.62	7.66***
How often friends cheat	1.92	2.66	0.73	9.89***
How often other students cheat	2.58	3.13	0.55	7.82***
How often students copy assignments	2.37	2.77	0.40	5.53***
How often students plagiarize	2.04	2.20	0.16	3.75***
How often students copy from others during exams	2.06	2.60	0.54	7.41***
How often students get answers prior to exam	2.40	2.74	0.34	4.88***
How often students use notes or search online during exam	1.78	3.13	1.35	12.68***
How often students get assistance from some else during exam	1.74	2.82	1.08	11.43***

#### Table 3. Knowledge of cheating differences between face-to-face and online classes

\*\*\* p < 0.01 significant difference between groups.

3.4 Cheating Perception Based on the Number of Online Classes Taken

Our findings are confirmed when we divide the sample into students who have taken two or fewer online classes and students who have taken three or more. The results are given in Table 4. There is no significant difference between the two groups in the amount of cheating the student admits to in face-to-face classes. However, students who have taken more online classes admit to cheating at a significantly higher rate than students who have taken fewer online classes. Students with a higher inclination to cheat may prefer online classes because of the ease of cheating.

Table 4. Knowledge of cheating differences by number of online classes taken

Behavior	0–2	3–4+	Difference	T-statistic
How often you cheat in face-to-face classes	1.33	1.31	-0.02	-0.15
How often you cheat in online classes	1.63	2.07	0.44	2.30**
How often friends cheat-face-to-face	1.86	1.95	0.09	0.62
How often friends cheat-online	2.49	2.73	0.24	1.29
How often other students cheat-face-to-face	2.50	2.62	0.12	0.98
How often other students cheat-online	3.05	3.18	0.13	0.79

\*\* p < 0.05 significant difference between groups.

3.5 Types of Cheating Observed

The results of the types of cheating observed and the number of students caught cheating are given in Table 5. Writing assignments and in-class quizzes have the least amount of observations at 24 percent and 37.7 percent, respectively. Take-home quizzes or exams see a 26 percent rise in cheating at 63.7 percent, and online quizzes or exams are the highest at 74 percent.

#### Table 5. Types of cheating observed by respondents

Cheating Witnessed	Number	Percent
Writing assignments	35	24.0
In-class quizzes or exams	55	37.7
Take-home quizzes or exams	93	63.7
Online quizzes or exams	108	74.0
Knowledge of others caught cheating		
No	96	65.8
Yes-respondent	1	0.7
Yes-another student	53	36.3
Type of class others caught cheating		
Face-to-face	45	81.8
Online	10	18.2

Nearly 66 percent have no knowledge of anyone caught cheating. Those who admit to being caught represent only 0.7 percent whereas those who witness another being caught represents 36.3 percent. Nearly 82 percent of the students caught cheating are caught in a face-to-face class. Although our earlier results show significantly more cheating in online classes, it is far less likely that students are caught.

#### 3.6 Additional Observations

Students were asked their level of agreement with a number of statements regarding the motivation for cheating. Students could respond with strongly disagree (-2), disagree (-1), neutral (0), agree (1), or strongly agree (2). The results are given in Table 6. The students are roughly neutral with the first three statements. Nearly 43 percent agree with the statement that cheating is easy whereas 29 percent disagree. The statement that students cheat because professors are unaware or uncaring receives agreement from 42 percent and disagreement from 33 percent. A student cheating because it is the only way to pass a class is the only statement to receive more disagreement (39 percent) than agreement (34 percent).

Table 6. Respondents' attitudes and motivations for cheating

Statement	-2	-1	0	1	2	Mean
Cheating is easy	4.9	24.0	28.2	38.0	4.9	0.14
Professors unaware or do not care	6.3	26.8	25.4	36.6	4.9	0.07
To pass a particular class	15.5	23.2	27.5	28.9	4.9	-0.15
Easier to cheat in an online class	2.1	2.1	13.4	45.8	36.6	1.13
Proctored exams make it more difficult	1.4	2.1	20.4	47.2	28.9	1.00

Note: Strongly disagree = -2; disagree = -1; neutral = 0; agree = 1; strongly agree = 2.

The final two statements receive substantially more agreement from students. More than 82 percent agree that it is easier to cheat in an online class and 76 percent agree that exam proctoring makes cheating in an online class more difficult.

Students were asked about the number of online classes taken and how many of those classes used proctored exams. The results are given in Table 7. The average student has taken nearly three online classes and that number appears to be rising. Unfortunately, a majority of the students (67.8 percent) have not had a proctored exam.

Table 7. Number of online classes taken by respondents and the use of	proctored exams

	0	1	2	3	4+	Mean
Number of online courses taken	2	18	23	53	50	2.90
Percent	1.4	12.3	15.7	36.3	34.3	
Number that used proctored exams	99	28	13	1	5	0.53
Percent	67.8	19.2	8.9	0.7	3.4	

The final section asked what was effective at preventing cheating and requested comments. Although difficult to categorize, the results are insightful. There were a total of 61 comments with the most common suggestion (16) being to use in-person or proctored exams. Fourteen students believe using multiple exams or a unique exam for each section is important. Similarly, six students argue against the use of test banks. They point out that most test banks are now available online. This is particularly troubling for online exams as the students are able to search for the exact question and get the answer. Finally, six students suggest teacher attention during exams and having the teacher walk around the room.

#### 4. Conclusion

An important role of a university is to certify that all of its graduates have some basic level of knowledge. If the ability of an institution's graduates declines or becomes inconsistent across programs, the value of that institution's degree becomes questionable. The rise in the use of online classes makes this certification role more challenging but certainly not impossible. A student comment presented the problem quite well: "It's hard to cheat face to face. It's much easier to sit with a buddy and knock out an online test with no chance of getting caught."

Universities should provide a proctoring infrastructure and require their teachers to use it. Some classes use projects and writing assignments instead of exams and would be exempt. However, online classes should be compared to their face-to-face counterpart to verify that similar content is being covered and comparable evaluation methods are being used. It is important to verify that the person receiving the credit is also the person doing the work.

In addition to fundamental knowledge such as communication and problem-solving skills, students learn social skills at their universities. Specific social skills are often important to employers for appropriate job placement. University transcripts should include the percentage of classes that were taken face-to-face versus online.

Given that every test bank is available online, instructors should write their own exam questions or substantially rewrite questions from a test bank. Those teaching online classes should write multiple exam copies to combat students simply taking pictures of the exam and passing the exams to other students. A final remedy would be the adoption of testing similar to graduate school entrance exams before graduation. This would allow a uniform evaluation of knowledge across schools and delivery platforms.

The rise of online course delivery increases the likelihood of cheating and diminishes the value of a college degree. Measures must be adopted to ensure the integrity of the university system and its long-term viability

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# **Appendix: Student Survey**

1. Please complete the following background information.

<u>Class</u>	Gender	<u>Employn</u>	ment Major (check two if o	<u>double major)</u>	
	Junior _	_ Female	None	Accounting	Insurance
	Senior	Male	Part-time	CIS	Int'l Business
	Graduate		Full Time	Economics	Management
				Finance	Marketing
				Hospitality	Other

# 2. Which type of class do you prefer?

- \_\_\_\_ Face-to-face
- \_\_\_ Online

3. How many online courses have you taken? Of those online courses, how many used proctored or in-person exams?

Online courses completed	Proctored or in-person exams
0	0
1	1
2	2
3	3
4 or more	4 or more
4. Where have you witnessed cheat	ing by others? (check all that apply)
Writing assignments	Take home quizzes or exams
In-class quizzes or exams	Online quizzes or exams
5. Are you aware of anyone caught	cheating? If yes, what type of class was it in?
(check all that apply)	
No.	Face-to-face
Yes – I have been caught.	Online
Yes – a friend.	
Yes – a student that I don'	t know.

6. Cheating prevalence in face-to-face and online classes.

Face-to-face classes			(	Online classe	25	
Never Rarely Sometimes Often Always		Never	Rarely	Sometimes	Often	Always
	How often do you cheat?					
	How often do your friends cheat?					
	How often do other students cheat?					
	Assignments					
	How often do students copy					
	How often do students plagiarize?					
	Exams					
	How often do students copy					
	answers from others during exams?					
	How often do students get answers from					
	someone that has already taken an exam?					
	How often do students use unauthorized notes					
	or search online sources during an exam?					
How often do students get unauthorized assistance						
	from someone else during an exam?					
7. Do you agree or disagree with the following	ng statements?					
	Strongl	v				Strongl
<u>Statement</u>	disagre	e Dis	agree	Neutral A	Agree	agree
Students cheat because it is ea	isy.					
Students cheat because some	e					
professors are unaware or do not	care.					
Students cheat because it is the	he					
only way to pass a particular cl						

It is easier to cheat in an online class.

Proctored exams make it more

difficult to cheat in an online class.

8. What actions are effective at preventing cheating? Add any other comments.