

Academic Integrity: Online Classes Compared to Face-to-Face Classes

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Abstract

Trends toward an increase in online courses suggest the need for more research on differing levels of cheating and other acts of academic disintegrity as compared to face-to-face classes. We surveyed 639 students in both types of classes. Students felt it was easier to cheat in online classes than face-to-face classes. For students taking both online and face-to-face classes, we found that cheating occurred more frequently in online classes. However, students who took only online classes were less likely to cheat than students who took only face-to-face classes. The relationship of age to taking online classes and cheating offered an explanation for the contradictory finding. Sex differences in cheating behavior were absent.

Academic Integrity: Online Classes Compared to Face-to-Face Classes

Since 2003, online enrollments have grown 358%, and 31% of students now take at least one course online (Allen & Seaman, 2011). But this research also shows that about a third of academic leaders perceive online outcomes to be inferior to traditional classes and that faculty members have misgivings about online classes. These misgivings include lack of course comparability, more opportunities to cheat in online classes, and a greater attraction to students whose goal is to cheat (Bailey & Bailey, 2011). Youngberg's (2012) commentary in the *Chronicle of Higher Education* argues that the number one reason why online education will not replace college is "It's too easy to cheat." The majority of faculty (64%) and students (57%) believe it is easier to cheat in online classes (Kennedy, 2000).

Despite this common belief, there is a lack of adequate research comparing academic disintegrity online (OL) to face-to-face (FF) classes. Existing research has found higher levels of cheating in online classes (Lanier, 2006). But others have found lower levels of cheating in online classes (Hart & Morgan, 2010; Kidwell & Kent, 2008, Stuber-McEwen, Wisely, & Hoggatt, 2009) or cheating levels comparable to other research studies of FF classes (Grijalwa, 2006, Watson & Sottile, 2010). But comparing findings to other studies that estimate cheating in traditional classes, as Grijalwa did, is a weak methodology not suited to hypothesis testing.

Research has found lower levels of cheating in online classes may have been subject to volunteer biases that influence findings. In Hart's (Hart & Morgan, 2010) study, the 44 participating students from traditional classes represented 44% of the cohort, while the 330 students from online classes represented only 16% of the cohort. Research shows that volunteerism is related to higher levels of altruism (Rosenthal & Rosnow, 1975), and thus may be selective for lower levels of cheating (Miller, Shoptaugh, & Parkerson, 2008). The online class cheating assessments, having lower response rates,

would be more significantly reduced by volunteer biases. Similarly, Kidwell and Kent (2008) had a much higher response rate among traditional students (42%) relative to online students (24.8%).

When comparing online students to traditional students, the glaring differences in attributes of online versus face-to-face students that are plausible explanations for any differences are often missed. Residential students are more likely to be in the 18-22 range, while non-traditional and older students are more likely to be enrolled in online classes. For example, Dutton, Dutton, and Perry (2002) found that the average age of their students in lecture classes was 22.5 as compared to the average age in online classes of 27.6. Previous research has demonstrated that older students are less likely to cheat (Miller, Shoptaugh, & Parkerson, 2008). Past research has also indicated that, in general, undergraduates members of Greek social organizations tend to cheat more (Iyer & Eastman, 2006), and these students are likely to be traditional, face-to-face students. A variety of other attribute characteristics that may differ between online and face-to-face students could be determining factors behind the inconsistency of findings regarding cheating in online and face-to-face classes.

What seems to be missing from these comparison studies is the fact that many students take both sorts of classes. The benefit of surveying these students resides in the control of attribute differences between online and traditional classes, making the students their own control. Our present research will consider differences in cheating during online and face-to-face classes for students enrolled in both types of classes. We will also consider between subject comparisons for students having only one type class.

Additionally, we investigated whether there were differences in online and face-to-face student's perceptions of how severe consequences should be and beliefs about the student's responsibility to prevent cheating. Previous research has found students who cheat more believe consequences should be less severe (Kufahl, Shoptaugh, Miller, & Levesque, 2005) and demonstrate lower levels of Academic Integrity Responsibility (Miller, Shoptaugh, & Wooldrige, 2011). Academic Integrity Responsibility

(AIR) is the extent to which it is believed that students are responsible for deterrence of cheating in coursework. Low scores indicate the belief that promotion of academic integrity is primarily or solely the responsibility of the teacher.

The purpose of this study was to compare online course cheating to face-to-face course cheating using between subjects (students enrolled in only one type) and within subjects (students enrolled in both online and face-to-face classes) comparisons, with an established survey (Miller, Shoptaugh, & Wooldridge, 2011). The survey has extra items added to accommodate differences in cheating that occur in an online class. Additionally, comparisons will be made on the AIR (Miller, et al., 2011).

Method

Participants

Participants were 531 undergraduates and 108 graduate students from two south-midwest universities. Extra credit was given as determined by their individual instructor. While 144 were solicited through an introductory psychology pool at one university, 279 participants from the same university and 214 participants from the second university volunteered with varied incentives offered by their instructor. Students were sent to a web page that provided the consent form, with consent acknowledged by entering the survey web form. Median age was 22 with a range from 17 to 56 with 67.5% of participants being female. We received 639 responses. Participants were fairly evenly distributed across college class. Of these, 289 had both types of classes, 246 had only face-to-face classes, and 104 had only online classes.

Procedures

All items were completed in an html formatted web survey. At the outset it was made explicit that all responses were entirely anonymous. The anonymous survey included 18 items to address categories of cheating with choices of: “never”, “once”, “more than once”, or “frequently”. With permission, these items were derived from McCabe’s surveys that have been widely used (McCabe & Trevino, 1993). However the items have evolved through two research studies (Miller, Shoptaugh, & Parkerson, 2008; Miller, Shoptaugh, & Wooldridge, 2011) and were updated to address both online and face-to-face classes, see Table 1. Participants also completed a five-item survey to assess Academic Integrity Responsibility (AIR) (Miller, Shoptaugh, & Wooldridge, 2011). Students were asked how often they witnessed cheating in the past year using the same choices as above and whether they thought it was easier to cheat in online classes (1 = strongly disagree, 5 = strongly agree). Students also gave their sex, age, class, and GPA.

After the anonymous survey was completed, students were taken to a new web form which allowed them to enter their names into a second database in order to receive participation credit.

Results

Frequency of Cheating

While 15.7% disagreed, 57.2% agreed that is easier to cheat in online classes. We analyzed the accuracy of that belief in two ways. Within-subject comparisons were made with students having both types of classes followed by between-subjects comparisons for students having only online (OL) or only face-to-face (FF) classes.

Students taking both types of classes reported more cheating in OL classes, $M = 4.15$ than in FF classes, $M = 3.15$, $t(288) = 4.35$, $p < .001$. The fact that these subjects took significantly more FF credits, $M = 21.9$, than OL credits, $M = 17.8$, $t(289) = -6.73$, $p < .001$, demonstrates that cheating frequency findings cannot be explained by differences in number of credit hours completed. To the contrary it raises the possibility that these differences could be underestimated.

Secondly, we made between subject comparisons for students having only one type of class. We found lower rates of cheating in the only-OL students, $M = 2.52$, than in only-FF students, $M = 4.66$, $t(265.4) = -3.64$, $p < .001$. Number of hours were not significantly different, $t(348) = -1.85$.

Since the between subjects findings differed from within subjects findings, we explored the most obvious attribute difference between online only and face-to-face only: age. Our introduction reviewed the evidence that online students are older on the average and that older students cheat less. When age was entered into the regression alone, the standardized regression coefficient was substantial, $b^* = -.235$, $t(346) = -4.51$, $p < .001$. When entering class type second in the regression, the effects the differences between the two groups was no longer significant, $b^* = .069$, $t(345) = 1.16$.

Literature often describes cheating data in percentages who have cheated. Fewer OL only students cheated, 51.9% than FF only students 71.5%, $\chi^2(1) = 12.49$, $p < .001$. This is likely due to the older age of the OL only students. For students with both types of classes, we compared cheating within subjects

and found more students had cheated OL classes, 64.7%, than in FF classes, 49.1%, $\chi^2(1) = 14.3$, $p < .001$.

An item by item view of differences for each type of cheating behavior in Table 1 shows how these specific behaviors differ in OL and FF classes. In general there appears to be more unauthorized use of the crib notes, text, and web searches in online courses for students taking both types of classes. However, students in only face-to-face classes are more likely to use someone else's work or provide it to another student, receive improper help in completing an assignment, get questions from those who have taken the test and give questions to others, and misuse the internet relative to students who take only online classes.

Differences in Online, Face-to-Face, and Students with Both

To conduct an analysis of variance comparing the three groups, a cheating score for students with both types of classes was counted as their highest cheating rate for either the OL courses or the FF courses. Significant findings were explored using Scheffe post hoc tests. Students in OL courses cheated less than others, $F(2, 636) = 5.90$, $p < .01$, see Table 2. Students taking OL classes were older, $F(2, 633) = 59.31$, $p < .001$ and witnessed less cheating in the past year, $F(2, 636) = 10.9$, $p < .001$. They were more inclined to take responsibility for the integrity environment, scoring higher on Academic Integrity Responsibility (AIR), $F(2, 635) = 4.11$, $p < .05$. OL-only students were less likely to believe that it is easy to cheat in OL than in FF classes, $F(2, 628) = 16.3$, $p < .001$.

Sex Differences

There were no significant sex differences or interactions with sex for any measures of cheating behavior. Females scored higher on AIR, $M = 15.9$ than males, $M = 14.73$, $t(634) = -2.95$.

To consider arguments that differences in findings on sex often follow from differences in populations, we analyzed sex differences in cheating for each student source. While there was a non-

significant trend for males, $M = 5.33$, to cheat more than females, $M = 3.95$, in the population from the second university, $t(212) = 1.58$, the opposite marginally significant trend, females cheating more, $M = 5.96$ than males, $M = 3.95$, was found among introductory psychology students at the first university, $t(142) = 1.68$, $p < .10$, with no such trends in the second population at the first university, $t(277) = .32$.

Other Correlations

Older students were less likely to cheat, more likely to take responsibility for academic integrity, perceived consequences should be more severe, and witnessed less cheating, see Table 3. This table shows a variety of correlations relevant to understanding cheating in OL and FF classes. Higher Academic Integrity Responsibility is related to a preference for more severe consequences, less cheating, and less witnessing of cheating.

Discussion

Within the academic community, it is commonly believed that cheating is more likely to occur in online classes than face-to-face classes. Such pervasive notions exist despite a lack within the literature to support this comparative idea. Our study builds on previous research, which has attempted to compare OL and FF cheating, by using a between subjects and within subjects design of participants taking both types of classes ($n = 289$), only FF ($n = 246$), and only OL ($n = 104$). While the overall consensus agreed that cheating is easier in online classes (57.2%), there is a level of complexity to this assertion. Specifically, our findings indicate that students taking both types of classes are more likely to cheat in their online classes. However, a seemingly contradictory finding occurred when we considered students who only took OL or only FF classes, because students who took only OL classes cheated less than other students. The findings showed that the population who take only online classes are older, take more Academic Integrity Responsibility, and cheat less.

The present research supports previous findings that cheating occurs within the academic setting. However, specific cheating behaviors differ for students taking both types of classes and only FF courses. Students in both types of classes were significantly more likely to report the usage of cheat sheets during tests, paraphrasing without proper citation, assisting others cheat, and unauthorized use of text or web in answering items. An overlap occurs for only FF students in helping someone else cheat and paraphrasing without appropriate citations. Additionally, only FF students are more likely to turn in work done by someone else, complete work for someone else, give/receive inappropriate help, use a false excuse, or submit previous work in subsequent classes.

The pattern of correlations suggests that there is a culture or social component to cheating. Students who cheat more also witness more cheating and do not perceive they have any role in reducing cheating. This could suggest acceptance of cheating in many academic subcultures. Findings of higher

rates of cheating in fraternities and sororities supports the notion of disintegrity-accepting subcultures (Iyer & Eastman, 2006).

While some studies report males cheat more than females, and a sex differences is often presumed, many studies, including this one, failed to find sex differences in cheating. Miller, et al. (2008) argue that the differences in these findings occur primarily due to sex differences in volunteerism and as these differences are very small and unreliable; sex should not be considered a significant factor in cheating behavior. The fact that three different sources for participants resulted in minimal but diverse sex differences underscores the weakness of any expectations about cheating behavior as a function of sex.

While we found significant results in the present study, limitations exist regarding the nature of sampling. Participants volunteered for extra credit points; individuals who desire extra credit may have different characteristics than those who do not wish to participate. While using non-volunteers is ethically problematic, varieties in incentive strength may influence the responding population (cf., Miller et al, 2008). Additional research should also extend the understanding of disintegrity subcultures and explore methods to prevent such disintegrity. As there is an increasing trend toward online courses, extended research within this domain is necessary.

An additional weakness resides in the selection of disintegrity survey items. The more comprehensive the survey, the higher the rates of cheating that are typically reported (Miller et al., 2008). If the survey were more comprehensive in covering forms of cheating common in one type of class than in another, this could generate significant differences in cheating rates. Particularly when we consider differences in how students might cheat in an online class, attention must be paid to comprehensive coverage in surveying disintegrity.

It is common in the literature to report cheating as percentages of students who have cheated and we included that statistic in our results. Although that is useful for comparing the results of different

studies, it can be misleading. If a treatment reduced students cheating from 12 times per semester to one or two times per semester, it would not impact the percentage who have cheated. Yet treatments to prevent frequent cheating are probably more important than a treatment that affects a person who would cheat once. Unfortunately, a common metric, while desirable for discussions, is not very practical for testing hypotheses.

Regardless of teaching modality, educators should be aware that cheating occurs at rather high levels. Overall, despite perpetual reminders that disintegrity is not acceptable, it is actually quite common within the academic setting. Deterrence of cheating in online classes requires attention to new strategies that may be different from conventional classes. It appears that professors must be as, or more, vigilant in addressing cheating in online classes.

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Table 1

Individual cheating item (1 = never) differences within students having both types of classes and between groups for students with only one type of class.

	Both Types		One Type	
	OL*	FF	OL*	FF
1. Turning in work done by someone else.	1.06	1.07	1.01*	1.09
2. UNauthorized use of the text or other book in answering items on a test, quiz, or other assessment.	1.45*	1.14	1.42	1.20
3. UNauthorized use of a web search or other digital media in answering items on a test, quiz, or other assessment.	1.50*	1.22	1.38	1.26
4. Writing or providing a paper or assignment for another student.	1.17	1.12	1.06*	1.25
5. Receiving help on an assignment that exceeds that which would be acceptable to the teacher.	1.39	1.32	1.11*	1.53
6. Getting questions or answers from someone who has already taken a test.	1.34	1.41	1.06*	1.50
7. Providing questions or answers to a student who will be taking the test at a later time.	1.35	1.39	1.10*	1.54
8. Helping someone else cheat during a quiz or exam.	1.20*	1.12	1.07*	1.23
9. Copying or getting help from another student during a quiz or exam.	1.23	1.16	1.11	1.24
10. Paraphrasing (copying with rewording) a sentence from a written or internet source without footnoting or referencing it in the paper.	1.47*	1.36	1.36*	1.60
11. Copying a sentence directly from a written or internet source without quotes and proper referencing.	1.20	1.20	1.14*	1.31
12. Turning in a paper obtained in large part from a term paper "mill" or website.	1.06	1.07	1.00*	1.06
13. Using unpermitted crib notes (or cheat sheets) during a test.	1.20*	1.11	1.10	1.13
14. Altering a graded test and submitting it (as misgraded) for extra credit.	1.07	1.05	1.00*	1.07
15. Turning in a paper copied, at least in part, from another student's paper.	1.10	1.08	1.02	1.07
16. Using a false excuse to obtain an extension on a due date or to take a test at a different time.	1.19	1.14	1.06*	1.24
17. Participating in the exchange or sharing of a stolen copy of the test.	1.08	1.05	1.02	1.09
18. Turning in a paper that you originally wrote for another class without awareness of the professor regarding its previous use.	1.14	1.16	1.04*	1.20

* = $p < .01$ two tailed

Table 2*Differences in online only, face-to-face only, and student with both types of classes*

Variable	Class Type		
	Online (N = 104)	Face-to-Face (N = 246)	Both (N = 289)
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>
Self-reported Cheating *	2.52 (4.45) ^a	4.66 (6.18) ^b	4.81 (6.44) ^b
Age **	28.8(7.90) ^a	21.2(5.36) ^b	23.65(5.65) ^c
AIR (p < .05)	16.6(4.84) ^a	15.1(4.44) ^b	15.44(4.40) ^{a b}
Online Cheating is easier **	3.08(1.31) ^a	3.88(1.13) ^b	3.72(1.20) ^b
Witnessed cheating**	1.74(1.06) ^a	2.29(1.11) ^b	1.99(1.03) ^b

* Difference significant at the $p < .01$ level** Difference significant at the $p < .001$ level^{abc} Means with the same letter do not differ on Scheffe test

Table 3*Correlations between selected variables*

	AIR	2	3	4	5	6
1. AIR	-	-.275*	.369*	-.339*	-.116*	-.083
2. Cheating		-	-.276*	.376*	.150*	0.058
3. Consequence			-	-.137*	0	0.018
4. Witnessed				-	.198*	-0.062
5. OL cheating easier					-	-0.077
6. GPA						-

* $p < .01$