Academic Cheating in Online and Live College Courses During the COVID Pandemic

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The topic of cheating at the college level has received greater attention since the 2019 pandemic. This is in part because countless institutions of higher education switched many of their live/in-person classes to an online learning format. In comparing cheating in live classes to online classes during the 2020-2021 academic year, our survey study results showed a stronger prevalence of cheating in online classes, and more than half (53.2%) of the students reported knowing a classmate who cheated during the pandemic. The aspects of gender and class rank are also discussed related to cheating.

Keywords: academic cheating and dishonesty, live and online classes, pandemic impacts

Introduction

College student cheating is not a new topic (McCabe et al., 2001). There have been many theories related to moral development, moral reasoning, and cheating that postulate why a person cheats or engages in amoral behaviors (Kohlberg, 1971, 1975; Kitchener & King, 1981, 1990; Gilligan, 1972, 1977, 1979, 1986; Perry, 1970). During the pandemic, many universities and colleges switched from traditional face-to-face classes to some type of online learning where the teaching and learning approach was delivered via the internet. Given this huge increase in internet-based course offerings, the concern is whether student cheating increased, given the lack of a professor (instructor) being physically in the classroom.

Literature Review

While some, albeit not enough, studies have focused on cheating in live or online classes (Grijalva et al., 2006; Lanier, 2006; Stuber-McEwen et al., 2009; Szabo & Underwood, 2004; Underwood & Szabo, 2003; Haines et al., 1986), there remains limited research as to connecting the phenomenon of cheating in both online and live contexts. With the advent of web-based assessments, the opportunity to use illegitimate means to improve grades is a concern (Kennedy et al., 2000; Smith et al., 2003).

There has been an increase in media coverage related to academic online cheating (Newton, 2020). Also, it is worth noting that in a study of the individual and situational factors affecting cheating in a rural college, Robinson et al. (2004) concluded that “the dynamics behind cheating might be universal” (p. 380), stating that “while rural communities might offer different dynamics for some issues, the extent of cheating at this campus mirrored the rates of studies from many urban schools” (p. 380). In alignment with this perspective, our following review of

the relevant literature is not necessarily directed by the geolocation of the institution of higher education; rather, it attends to the core issue of college student cheating.

Cheating: A Persistent Issue

The literature reveals that cheating is a prevalent and long-standing issue on college campuses long before the COVID pandemic. According to Anderson (1998), cheating has been considered a serious problem on college campuses for over 100 years. In their longitudinal study of cheating, Vandehey et al. (2007) found that cheating has persisted over time, noting that 54.1% of students reported cheating in 1984, 61.2% in 1994, and 57.4% in 2004. In a 1995 study, Lord and Chiodo (1995) found that "eighty-three percent of the respondents [college students] had cheated in science sometime in their lives" (p. 317). And, almost two decades later, in another study, Berry et al. (2014) found that "at least 90% of students surveyed engage in some form of cheating, and students did not view digital cheating as an academic violation" (p. 82).

The point is that with the advancement of sophisticated search systems via the internet, wireless electronics, and artificial intelligence (AI), cheating has now evolved in the digital age. Students today are now part of the "copy and paste" generation in which dishonest behavior is only a mouse click away. For instance, King et al.'s (2009) study concluded that "73.6% of the students in the sample held the perception that it is easier to cheat in an online versus traditional course" (p. 1).

Similarly, a study by Raines et al. (2001) found that 60% of students self-reported breaking the rules, engaging in dishonesty, and not using their "own brain" to complete academic work (p. 83). Dawson (2020) also noted similar issues of widespread academic cheating and the use of technologies to cheat. Research conducted by Roy and Edwards (2023) found that about

16.7% of National Science Foundation (NSF) graduate research fellows self-reported cheating where the "rate of academic cheating was 16.7% and of research misconduct was 3.7%," (p. 1) "31% of fellows reported direct knowledge of graduate peers cheating, 11.9% had knowledge of research misconduct by colleagues," (p. 1) but "only 30.7% said they would report suspected misconduct" (p. 1).

Cheating under the COVID Pandemic

The pandemic has raised global concerns of an epic nature and resulted in lockdown and isolation for many college students in the pursuit of their future goals and dreams. The COVID pandemic has led to disruptions that are unprecedentedly broad in scope and deep in extent. Most, if not all, higher education institutions were forced to shift almost all their courses to fully online almost overnight. For many students, social isolation from friends, family, and peers were the result of this shift. As concerns related to mental health and well-being of students were elevating, academic institutions also had to scramble to adjust to the rapidly changing dynamics of online education in order to keep a sense of continuity in courses and allow students to progress amidst the pandemic.

Because of the possibly different collaborative nature of online education relative to live/face-to-face formats, this shift to online platforms for courses has brought about concerns related to academic integrity. In interviewing undergraduate student participants, Adelrahim (2021) found that the pandemic's undue influence on stress and anxiety created a sense of justification of unethical behavior in cheating. Adelrahim (2021) attributed the stress leading to cheating to the following factors: social pressure, peer pressure, academic pressure, instructors not using anti-cheating software, the ease of cheating, the desire for an increased GPA, worries about jobs during the economic fallout, and the fear of not being competitive in the job market.

Given that the student participants reported feeling anxious, isolated, bored, nervous, sad, and uncertain of their future, Adelrahim (2021) postulated that the student's sense of uncertainty added more stress and exacerbated the conditions that affect ethical reasoning where there was no fear about achieving personal goals through cheating. Similarly, in their review of academic integrity and mental health during COVID-19, Eaton and Turner (2020) concluded that the moving to online-based academic integrity tools such as e-proctoring added to the already stressful situations mounting from the pandemic for students. According to these two researchers, students reported feelings of anxiety, discomfort, nausea during testing, and financial concerns due to costs of proctoring (Eaton & Turner, 2020).

Other concerns related to cheating amidst the COVID pandemic are also noted. According to Lancaster and Cotarlan (2021), an online file sharing website has been used beyond "homework help" to contract cheating on exam questions under the pandemic. The lack of monitoring mechanisms from the academic/educational institutions and communities on such websites is particularly concerning as it further threatens the already weakening capacity of enforcing academic integrity from individual faculty and colleges/universities (Lancaster & Cotarlan, 2021). Also, assessments such as exams have become more challenging with an online platform under the sudden, forced shift to a virtual course delivery. According to Nguyen, Keuseman, and Humston, (2020), the exams were particularly challenging to convert to an online system that would still differentiates the performance of students especially considering the tendency for online students to utilize online information or online peer supports. Likewise, in their study, Bilen and Matros (2021) found that students tend to utilize peers, social media, notes, and other collaborative methods in online tests that are not proctored. Bilen and Matros (2021) underscored that even the thought that others could cheat can further be a motive for a student to

engage with academic cheating – as s/he believes that others' cheating would affect the overall mean score of the test, potentially affecting negatively on those who do not cheat if the scores are curved by the instructor.

Research Purpose and Questions of the Study

The purpose of this study was to examine: (1) the prevalence of cheating, particularly given the COVID-19 pandemic; (2) whether students cheat more in online courses than in traditional live classes; and (3) what specific dishonest behaviors students engage. The study also examined the demographic factors of gender and academic class in relation to cheating. With such research purposes in mind, three research questions were asked: RQ1 – Do students cheat more in online courses than in live courses? RQ2 – Are gender and academic class significant factors for academic dishonesty related to online and live courses? RQ3 – Did students cheat more, given the switch from face-to-face to online during the pandemic?

The Guiding Theoretical Framework

The guiding theoretical framework for the current study was Kohlberg's (1971) psychological theory concerning moral reasoning. Kohlberg's (1971) theory of moral reasoning contains three levels of moral development. The three levels are Preconventional Moral Reasoning, Conventional Moral Reasoning, and Postconventional Moral Reasoning. At the Preconventional Moral Reasoning level, moral judgments are based on personal needs and cultural rules. At the Conventional Moral Reasoning level, ethical judgments are based on the expectations of one's family, society, or nation regardless of the perceived consequences. At the Postconventional Moral Reasoning level, a person's moral values or principles are defined and have validity beyond those held by any individual person or group.

Kohlberg's (1971) theory is a good fit for this study since the current literature suggests that predominantly personal needs trigger cheating as noted at the preconventional level. Cheating at the college level has received noticeable amount of print media coverages (Caplan-Bricker, 2021; Hobbs, 2021; Moody, 2021; Newton, 2020). Reporters for The Washington Post, New Yorker, The Wall Street Journal and U.S. News & World Reports have covered stories in this topic area in addition to issues of technical bias related to assessments. Given the change from traditional (face-to-face) teaching to online teaching formats, the belief is that cheating has alarmingly increased over time. The assessment process has been affected as well in that the majority of tests, quizzes, and other similar tools, also moved to an online format. This research provides an empirical vista into the cheating debate, given that the different teaching formats have changed over time.

Methods

A survey was used, which contained four sections (Demographics, Live Class Behaviors, Online Class Behaviors, and Miscellaneous). The Demographic section asked students about their gender, race/ethnicity, academic standing (freshman, sophomore, junior, senior, and graduate), and college of their academic major (College of Education, College of Health Professions, College of Business, to name a few). The Live Class Behavior and Online Class Behavior sections contained the same 16 statements about academic dishonesty and dishonest behaviors and requested students to rank their answers on a five-point Likert scale. Each statement was written in the first person and asked the students to respond regarding how often they have participated in the behavior ("Never", "1-2 times", "3-5 times", "5-10" times, ">10 times"). For this study, live classes were defined as courses that met in person at least three times in a semester while online classes were those that were either fully asynchronous or only met in

person three or less times per semester, with the rest meetings all being online. The final section, Miscellaneous, asked questions about participant feelings regarding how rampant cheating is, how their behavior changed since the onset of the COVID-19 pandemic, and how they perceive other students' behaviors have changed since the pandemic. For each survey item, descriptive statistics were obtained, and a regression analysis was used on the behaviors and questions listed in the Live, Online, and Miscellaneous sections. All demographic factors except for race (due to the unbalanced and insufficient sub-sample size for each sublevel) were utilized as the independent variables for regression analyses on behaviors. A review of survey questions was completed by a panel of faculty and students for content validity, and Cronbach's Alpha on standardized items was .850.

Student participants were recruited via an email sent to approximately 10,000 undergraduate and graduate students at a mid-size, major university located in a rural state of the United States. The email with a web link included was used to invite students to participate in this study on academic dishonesty. Potential participants were informed that their participation was anonymous, voluntary, and that no means of tracing or tracking would be implemented to potentially identify a student. Of the student population invited, 701 completed the demographic information. The university officially lists its female/male ratio of students as 60% to 40% and, of those who completed the demographic portion of the survey, 448 were female (64% of the sample), 230 were male (33%), and 23 chose "Other/Choose not to identify" (3%). The sample was congruent with the racial makeup of the student body, with 90% listing themselves as White/Caucasian, compared to the official university count enrollment of 89%. The graduate/undergraduate distribution was somewhat higher for graduate students (32% in the sample vs. 23% by the official university statistics).

Results

Survey Questions Directly Related to the COVID Pandemic

The study asked participants a total of four questions directly related to the COVID-19 pandemic and academic dishonesty; two of those related to the transition from live coursework to online/virtual in Spring 2020 (Q1 and Q2, see Table 1) and the other two related to changes in behavior since that time (Q3 and Q4, see Table 2). At the university where this research was conducted, that transition period was between mid-February and mid-March of 2020. The possible response options for the first two questions were "Yes, No, Not Sure, and I was not a student during the Spring 2020 semester," and "Yes, No, and Don't know/Not Sure" for the third question, and "More, Less, and I do not cheat" for the fourth question. Table 1 shows the frequency distribution of the student responses for the survey questions related to live-to- online transition, and Tables 2 show the frequency distributions for the survey questions related to the changes in behavior since the transition. One interesting observation of the results is that, for the survey question, "Have you cheated more or less since the COVID-19 pandemic (February 2020) than before the pandemic?", almost four times as many participants said they had cheated "More" than those responding "Less."

Table 1

Frequency Distribution for Survey Question 1 and 2

Survey Question	Yes	No	Not Sure	I was not a student during the Spring 2020 semester.
During the spring semester classes of 2020 the university transitioned its in-person classes to online/virtual. Do you know of students who cheated in those classes that transitioned, during or after the move to online teaching?	115	111	102	96
During the spring semester classes of 2020 the university transitioned its in-person classes to online/virtual. Did you cheat in those classes that transitioned, during or after the move to online teaching?	71	217	34	104

Table 2

Frequency Distribution for Survey Questions 3 and 4

Survey Question	Yes	No	Not Sure
Have you researched ways to cheat since the COVID-19 pandemic (February 2020)?	18	400	7
	More	Less	I do not cheat
Have you cheated more or less since the COVID-19 pandemic (February 2020) than before the pandemic?	105	25	236

Live Course Academic Dishonesty Behavior

As noted above, live or in-person courses were courses where students were physically in the same classroom as the instructor at least three times during the semester. It is necessary to note that 178 of the 701 participants who completed the demographic section of the survey chose to stop participating at the first question about specific academically dishonest behaviors. While it is beyond the scope of the current study to explain this large exit of participants, it has implications for future research (will be addressed later in this paper). Of those who did respond (n = 523), 28.3% of students said they have cheated on an assignment, quiz, or test at least once. Table 3 lists the frequency of each academic dishonesty behavior, with the last column showing the cumulative percentage of the participants who noted committing the behavior at least once.

Table 3

Frequency of Academically Dishonest Behaviors in Live Courses

Dishonest Behavior	Never	1-2 times	3-5 times	5-10 times	>10 times	Cumulative % of those who cheated at least once
I have cheated on an assignment, quiz, or a test.	375	87	30	11	20	28.3
I have submitted others' work as my own.	507	9	3	0	2	2.7
I have had someone give me answers during a class quiz or test.	468	42	9	2	2	10.5

Dishonest Behavior	Never	1-2 times	3-5 times	5-10 times	>10 times	Cumulative % of those who cheated at least once
I have received answers to a quiz or test from someone who has already taken it.	449	49	17	4	3	14.0
I have helped someone cheat on an assignment, quiz, or test.	436	62	14	8	3	16.6
I have used instant messaging through a cell phone, smartwatch, or handheld device during a quiz or exam.	484	22	6	2	8	7.3
I have used a cell phone, smartwatch, or handheld device to look up answers during a quiz or exam, when the instructor did not allow it.	459	30	17	5	11	12.1
I have copied another student's work with their permission and submitted it as my own.	489	21	5	2	5	6.3
I have copied another student's work without their permission and submitted it as my own.	509	9	1	0	1	2.1
I have been caught cheating by the instructor.	511	9	0	0	0	1.7
I have knowingly copied passages from an article or book directly into a paper without citing it as someone else's work.	490	26	3	0	1	5.8
I have let someone else take an exam for me.	515	4	0	0	1	1.0
I have used a term paper writing service to complete an assignment.	510	9	0	0	1	1.9
I have placed notes out of sight of cameras during an online exam.	445	51	11	5	8	14.4
I lied and told the instructor that my computer crashed during the exam, just so I could see the test questions and look up the answers.	509	10	1	0	0	2.1
I used a second computer during an exam, when the exam software "locked' my computer screen to prevent me from looking things up.	491	21	4	1	3	5.6

The top four specific dishonest behaviors for in-person classes as self-reported by student participants were helping others cheat (16.6%), placing notes outside of camera range (14.4%), acquiring answers from someone who has already completed a quiz or test (14.0%), and using a smart cellphone or tablet during a quiz or test (12.1%). Furthermore, the extensiveness of cheating, particularly related to using a cell phones or other handheld devices was alarmingly concerning, with over half of those admitting to using a device three or more times (n=33, 52.4%) and 17.7% (n=11) having done so more than 10 times.

For demographic factors, each was dummy coded because of the categorical nature of the factors. Next, a linear regression analysis was performed, treating each of the dummy variables as the independent variable. For anonymity and confidentiality reasons, the names of the colleges have been altered to a more generic form. For the purpose of the study, live classes were defined as classes that meet in person more than 80% of the time, per the definition used by the university where the survey took place.

In Table 4, the regression analysis results reveal that, for live classes, gender was a significant factor for the following statements: 1) “I have received answers to a quiz or test from someone who has already taken it.”, 2) “I have helped someone cheat on an assignment, quiz, or test.”, and 3) “I have copied another student’s work without their permission and submitted it as my own.” Given that the regression was significant for both male and female students, it suggests that both genders are likely to engage in this type of academic dishonesty behavior.

To eliminate multicollinearity issues within the regression analysis, the dummy factor of the “Master’s” level was removed from the regression equation, as the independent dummy variable had a tolerance level less than .20. In Table 5, the results show that being a freshman, sophomore, or junior had some significant statistical relations with certain cheating behavior

statements. Being a senior was found to be statistically significantly related to six cheating behaviors. No statistically significant relationship was found for the Doctoral level.

For the demographic factor, Academic College of Major, the "College of Education" level was removed as a dummy independent variable due to multicollinearity issues, as its tolerance level fell below the .20 level. Table 6 shows that majors in three of the colleges (Business, Fine Arts, and Liberal Arts) were found to be a statistically significant predictor of a single cheating behavior; the College of Engineering was found to be a significant predictor of two behaviors.

Table 4

Academic Dishonesty Linear Regression Scores for Live Courses by Gender

Survey question	*B*	*Std. error*	*t*	*p*
I have received answers to a quiz or test from someone who has already taken it.				
Male	-.421	.149	-2.829	.005**
Female	-.192	.072	-2.657	.008**
I have helped someone cheat on an assignment, quiz, or test.				
Male	-.526	.159	-3.297	.001**
Female	-.230	.078	-2.958	.003**
I have copied another student's work without their permission and submitted it as my own.				
Male	-.133	.059	-2.237	.026*
Female	-.081	.029	-2.794	.005**

*$p < .05$. **$p < .01$.

Table 5

Academic Dishonesty Regression Scores for Live Courses by Academic Class

Survey question	*B*	*Std. error*	*t*	*p*
I have cheated on an assignment, quiz, or a test.				
Junior	.349	.142	2.453	.015*
Senior	.356	.124	2.868	.004**
I have submitted others' work as my own.				
Sophomore	.096	.046	2.110	.035*
I have had someone give me answers during a class quiz or test.				
Senior	.119	.061	1.970	.049*
I have received answers to a quiz or test from someone who has already taken it.				
Freshman	-.194	.085	-2.295	.022*
I have used instant messaging through a cell phone, smartwatch, or handheld device during a quiz or exam.				
Senior	.200	.076	2.651	.008**
I have used a cell phone, smartwatch, or handheld device to look up answers during a quiz or exam, when the instructor did not allow it.				
Senior	.188	.096	1.965	.050*
I have placed notes out of sight of cameras during an online exam.				
Senior	.194	.088	2.204	.028*
I lied and told the instructor that my computer crashed during the exam, just so I could see the test questions and look up the answers.				
Senior	.043	.021	2.054	.040*

*$p < .05$. **$p < .01$. *Note.* Levels of Academic Class: Freshman, Sophomore, Junior, Senior, Master's, and Doctoral.

Table 6

Academic Dishonesty Regression Scores for Live Courses by College of Major

Survey question	*B*	*Std. error*	*t*	*p*
I have cheated on an assignment, quiz, or a test.				
College of Liberal Arts	.262	.130	2.022	.044*
I have used instant messaging through a cell phone, smartwatch, or handheld device during a quiz or exam.				
College of Business	.335	.100	3.351	.001**
I have used a cell phone, smartwatch, or handheld device to look up answers during a quiz or exam, when the instructor did not allow it.				
College of Fine Arts	.369	.160	2.306	.022*
I have copied another student's work with their permission and submitted it as my own.				
College of Engineering	.220	.111	1.990	.047*
I have placed notes out of sight of cameras during an online exam.				
College of Engineering	.364	.148	2.451	.015*

*$p < .05$. **$p < .01$. *Note.* Academic College of Major levels: College of Business, College of Education, College of Fine Arts, College of Engineering, College of Science, College of Pharmacy, College of Health Professions, College of Liberal Arts, College of Medicine.

Online Course and Academically Dishonest Behaviors

The same set of dishonest behavior questions were asked for online courses as well. For this study, online classes, as defined by the university where the survey took place, are courses taught either totally asynchronously or have a blend of asynchronous learning and synchronous teaching held virtually 100% of the time. The survey responses revealed that, for almost every behavior listed, students in online courses scored higher for academic dishonesty, with 42.3% admitting that they have cheated on an assignment, quiz, or test, which is an almost 50% higher score than that of live courses (28.3%). Table 7 lists the frequencies of academic dishonesty with the cumulative percentage of those who cheated at least once listed in the final column.

Table 7

Frequency of Academically Dishonest Behaviors in Online Courses

Dishonest Behavior	Never	1-2 times	3-5 times	5-10 times	>10 times	Cumulative % of those who cheated at least once
I have cheated on an assignment, quiz, or a test.	250	74	50	19	40	42.3
I have submitted others' work as my own.	418	9	3	2	0	3.2
I have had someone give me answers during a class quiz or test.	374	35	10	6	5	13.0
I have received answers to a quiz or test from someone who has already taken it.	367	37	19	2	4	14.5
I have helped someone cheat on an assignment, quiz, or test.	357	46	15	6	6	17.0
I have used instant messaging through a cell phone, smartwatch, or handheld device during a quiz or exam.	362	38	13	7	11	16.0
I have used a cell phone, smartwatch, or handheld device to look up answers during a quiz or exam, when the instructor did not allow it.	331	47	24	13	15	13.0
I have copied another student's work with their permission and submitted it as my own.	409	10	8	1	1	4.7
I have copied another student's work without their permission and submitted it as my own.	423	3	3	0	0	1.4
I have been caught cheating by the instructor.	427	3	0	0	0	.7
I have knowingly copied passages from an article or book directly into a paper without citing it as someone else's work.	416	11	3	0	0	3.3
I have let someone else take an exam for me.	422	5	3	0	0	1.9
I have used a term paper writing service to complete an assignment.	424	4	0	0	0	.9
I have placed notes out of sight of cameras during an online exam.	357	42	16	13	2	17.0
I lied and told the instructor that my computer crashed during the exam, just so I could see the test questions and look up the answers.	423	4	1	1	0	1.4
I used a second computer during an exam, when the exam software "locked' my computer screen to prevent me from looking things up.	398	17	10	3	1	7.2

Similar to the results for cheating in the live courses, the item rated the highest was "I have cheated on an assignment, quiz, or test." Also, the behaviors rated the highest for the live

courses were the ones most predominate for the online courses, as self-reported by the student participants in the study: helping others cheat (17.0%), placing notes outside of camera range (17.0%), getting answers from someone who had already completed a quiz or test (14.5%), and using a smart cellphone or tablet during a quiz or test when the instructor did not allow such items (13.0%). Unlike the results from the live courses, another two cheating behaviors were rated high for the online courses, that is, using instant messaging through a cell phone, smartwatch, or handheld device during a quiz or exam (17%) and having someone provide the respondent answers during a quiz or test (13.0%). Furthermore, the volume or number of times participants claimed to have engaged in these cheating behaviors tended to be higher for online classes, particularly when it relates to using electronic devices during quizzes and tests (n=99 for online versus n=63 for live, at least once). As an example, for the statement, "I have placed notes out of sight of cameras during an online exam," 32.0% of live class participants admitted to this behavior more than 1-2 times, but 42.4% did so more than 1-2 times in online classes.

Tables 8–10 show statistically significant results from the regression analyses for academic dishonesty behaviors by gender, academic class, and college of academic major. As shown in Table 8, for online classes, gender was a significant factor for female only for the statement, "I have helped someone cheat on an assignment, quiz, or test." Gender was a significant predictor for both gender on three statements: 1) "I have copied another student's work with their permission and submitted it as my own." 2) "I have copied another student's work without their permission and submitted it as my own." and 3) "I have knowingly copied passages from an article or book directly into a paper without citing it as someone else's work." This suggests that both genders are likely to engage in the types of academic cheating behaviors noted in these survey statements.

As shown in Table 9, there was a divergence in the results for college of academic major between live courses and online courses. While having a major within the College of Business was a significant predictor for three academic dishonesty behaviors, there was only one for live courses. Also, majors in the College of Engineering and College of Fine arts were significant predictors for two behaviors, and the College of Pharmacy and College of Liberal Arts had one each. Table 10 shows that being an underclassman (freshman or sophomore) was only a predictor for one dishonest behavior – this was consistent with the results found with lives courses. Being a junior did show as a significant predictor for more behaviors in online courses, that is, five behaviors in online courses versus one in live courses. Being a senior was a predicting factor in three of the behaviors examined in the survey. Furthermore, while doctoral level was not a predictor for any of the cheating behaviors examined for the live courses, it was found to be significantly related to one for online courses – "I have someone else take the exam for me."

Table 8

Academic Dishonesty Linear Regression Scores for Online Courses by Gender

Survey question	*B*	*Std. error*	*t*	*p*
I have helped someone cheat on an assignment, quiz, or test.				
Male	-.333	.203	-1.643	.101
Female	-.201	.099	-2.043	.042*
I have copied another student's work with their permission and submitted it as my own.				
Male	-.216	.109	-1.983	.048*
Female	-.108	.053	-2.037	.042*
I have copied another student's work without their permission and submitted it as my own.				
Male	-.127	.052	-2.445	.015*
Female	-.063	.025	-2.474	.014*
I have knowingly copied passages from an article or book directly into a paper without citing it as someone else's work.				
Male	-.184	.064	-2.882	.004**
Female	-.090	.031	-2.894	.004**

*$p < .05$. **$p < .01$.

Table 9

Academic Dishonesty Regression Scores for Live Courses by College of Major

Survey question	*B*	*Std. error*	*t*	*p*
I have cheated on an assignment, quiz, or a test.				
College of Business	.921	.244	3.776	.001**
I have submitted others' work as my own.				
College of Pharmacy	.187	.087	2.143	.033*
I have had someone give me answers during a class quiz or test.				
College of Fine Arts	.391	.158	2.481	.013*
I have helped someone cheat on an assignment, quiz, or test.				
College of Engineering	.394	.172	2.293	.022*
I have used a cell phone, smartwatch, or handheld device to look up answers during a quiz or exam, when the instructor did not allow it.				
College of Business	.375	.188	1.994	.047*
I have placed notes out of sight of cameras during an online exam.				
College of Fine Arts	.343	.168	2.042	.042*
College of Engineering	.629	.168	3.741	.001**
College of Liberal Arts	.265	.102	2.589	.010*
I used a second computer during an exam, when the exam software "locked' my computer screen to prevent me from looking things up.				
College of Business	.189	.090	2.100	.036*

*p < .05. **p < .01.

Table 10

Academic Dishonesty Regression Scores for Online Courses by Academic Class

Survey question	*B*	*Std. error*	*t*	*p*
I have cheated on an assignment, quiz, or a test.				
Junior	.814	.218	3.736	.001**
Senior	.476	.175	2.715	.007**
I have used instant messaging through a cell phone, smartwatch, or handheld device during a quiz or exam.				
Senior	.286	.113	2.534	.012*
I have used a cell phone, smartwatch, or handheld device to look up answers during a quiz or exam, when the instructor did not allow it.				
Junior	.594	.165	3.595	.001**
I have let someone else take an exam for me.				
Freshman	-.071	.031	-2.320	.021*
Sophomore	-.071	.031	-2.308	.021*
Junior	-.071	.034	-2.122	.034*
Doctoral	-.071	.035	-2.026	.043*

Survey question	*B*	*Std. error*	*t*	*p*
I have used a term paper writing service to complete an assignment.				
Junior	.041	.016	2.480	.014*
I have placed notes out of sight of cameras during an online exam.				
Junior	.318	.121	2.624	.009**
Senior	.307	.098	3.145	.002**
I lied and told the instructor that my computer crashed during the exam, just so I could see the test questions and look up the answers.				
Senior	.061	.027	2.230	.026*

*$p < .05$. **$p < .01$.

Discussion

It is important to note that the study was conducted to get a timely glimpse of academic dishonesty in an unprecedentedly wide-scope shift to online instruction under highly stressful circumstances associated with a global pandemic. While the issue of academic dishonesty is a long- standing issue (Berry et al., 2014; King et al., 2009), the overall results of the current study show, not only the continuity in such a trend, but also indications of the growing severity of the problem. The study's findings reveal that 28.7% of students cheated more since the pandemic started than prior to it, and the results speak to the compounding effects of more opportunities for students to cheat and to easily do so in online courses. The increased stress levels, due to the COVID-19 pandemic on students, may have further motivated and engaged students to cheat more in online classes. This is supported by the fact that very few students, when asked in the survey, stated that they had researched ways to cheat since the pandemic transition. In other words, the students already knew ways to cheat but the pandemic circumstances had weakened extant ethical principles, promoting certain justifications for engaging in academically dishonest behaviors and subsequently the actual enactment of such behaviors. As a result of increasing access to digital based tools that students have and are capable of mastering and the lag-behind institutional mechanism (i.e., faculty technology competency, online program/course structures,

etc.), resources, and policies in preventing and addressing online cheating, the opportunities to cheat, without being caught, have grown substantially within the last few years.

The findings of this study confirm what the existing literature has indicated, that is, cheating in online courses is more prevalent than cheating in live courses (Bilen & Matros, 2021; Newton, 2020). The specific cheating behaviors that scored high for online courses, but not live courses, was using instant messaging during a quiz or exam. This was not surprising, given it would be very difficult to do so without being caught cheating in a live course. Also, it is clear from the findings of this study that few students were caught cheating, which reduces student anxiety about being caught. Only 1.7% of students responded they have been caught cheating in a live course, even though 28.3% admit to cheating. The numbers are also concerning in online courses, with only 3 of the 186 (about 1.6%) students that admitted to cheating indicated that they got caught. This could suggest two things: there is a lack of consequences associated with engaging in academic cheating, and the prevention and discovery of cheating is challenging for faculty and institutions.

There was no notable difference related to whether the students themselves benefitted from cheating, or whether they helped someone else to cheat. In both live and online courses, the high prevalent cheating behaviors involved both types, that is, giving help to others and receiving help from others, albeit, at a relatively similar extent. It seems to suggest that self-serving motives may not be the simple explanation for the student participants' motives to cheat. Admittedly, one could argue that helping someone to cheat may also be self-serving, if the "someone" is likely to be a friend or a teammate.

Overall, demographic factors examined do not dictate the cheating patterns, except in a few very specific circumstances for live courses. Academic standing was found to be a

significant indicator for the cheating behaviors of receiving answers to a quiz or test from someone who has already taken the assessment. There are two possible reasons for this outcome. First, upper graduate/graduate students have been in school long enough that they have built longer lasting interpersonal relationships with other students compared to underclassmen. These relationships possibly encouraged students to "collaborate" more on assignments, quizzes, and tests. Second, it is often the case that courses in higher academic levels tend to have more project-based assignments rather than quizzes or exams due to considerations such as curricular objectives and/or class size. The shift to online instruction in weeks because of the COVID-19 could force instructors for those courses to rely on quizzes or exams as an only feasible alternative – a change that could have led to pressure and testing anxiety that were not present previously and have been noted in the literature as factors contributing to cheating (Adelrahim, 2021; Nguyen et al., 2020). This could have triggered a motive to cheat when it was not the case necessarily prior to the pandemic.

The survey results for academic major, as associated with the college where the major was placed, was noteworthy. It is difficult to pinpoint why some majors were significant predictors for certain behaviors, but there are some possible explanations. First, different majors require different levels and types of academic work from students and these differences might mean that certain behaviors may not be available or feasible as often. For example, a major that requires students to perform individual and group projects in multiple courses may not require tests as often as the majors that do not use projects as part of the grading process, therefore reducing the opportunity for the first group of students to cheat on tests. Additionally, some majors have far more pressure on class ranking than others, especially in relationship to graduate school or career placement after graduation.

Gender was found to be a significant indicator for cheating behaviors of receiving answers to a quiz or test from someone who has already taken it and helping someone cheat on an assignment, quiz, or test. Interestingly, both male and female gender type was found significant, meaning that identifying a gender on the survey was a generic predictor of behavior. The authors in no way argue that students who do not identify as male or female are more likely to cheat, but instead consider this to be a statistical anomaly/failure of the study analysis.

Furthermore, while not directly related to the statistical results, one prominent observation in the survey responses is worth noting. As noted earlier, a high number of survey participants who completed the demographic section of the survey exited right after seeing the questions related to cheating. Typically, in an electronic survey, some respondent attrition occurs, as participants will either skip questions or stop answering after a certain point, due to lack of interest, connectivity issues, or other reasons (Fan & Yan, 2010). Having stated this, the number of respondents (n = 178) who stopped immediately after seeing the first academic dishonesty question was high and the researchers can only conjecture as to why this may have occurred, since survey respondent anonymity prevented any type of follow-up. The researchers of the study believe this could have something to do with the topic itself making some students uncomfortable answering the survey questions. This is understandable in the sense that the survey potentially asked students to admit to behaviors that may lead to academic sanctions, despite all the mechanisms in place to ensure anonymity and confidentiality. This could possibly mean that the presence of student cheating might very well be higher if the non-responders were hiding their academic dishonesty behaviors by not answering the questions in the survey.

Lastly, it is necessary to note the study's two limiting factors that could potentially make generalization of the findings difficult. The first was the relatively low response rate (7%), which

due to the anonymity of the survey, prevented the authors from following-up to encourage greater participation. The second was the lack of proportionality of the respondents to academic majors and colleges at the university, which meant that some majors could be over-represented or under-represented in the results.

Implications for Practice

There are numerous approaches university faculty and administrators can take to decrease cheating. One aspect is to address student behavior. All academic majors should have an ethics course within their program of study. In addition to an ethics course, ethical behavior and moral development should be an integral/integrated part of the curriculum for all majors and be structured as a continuous process in a student's academic development. Students should be taught about what cheating is and the consequences of cheating. Students should be provided resources, such as a mandatory learning module/course and library training related to academic dishonesty. There should be consistent and immediate consequences for students who cheat. Academic dishonesty and cheating policies should be clear, easy to follow, and transparent for both students and faculty. Such policies should be in the syllabus and University website.

Faculty also have responsibilities in the process to decrease cheating. Faculty can change test questions each semester if a test bank is used to generate test questions. If it is an online course, engage lockdown browser technology and use of student camera to monitor if students are cheating while taking the test/assessment. Test completion can be completed in the classroom with a live test proctor. The assessment questions can be project-based assessments that are unique in nature and changed each semester. Given the increased use of artificial intelligence (AI) to cheat, professors need to create assignments that are process based and applied because

AI programs are less likely to have a complete answer in the immediate future until AI becomes more widespread.

Administrators should support faculty at all levels in the appeal process if policies were followed by the faculty member. Such support would be both legal and via a faculty advocate/ombudsperson. The university pays for cheating detection tools and a testing resources center that is secure if a faculty member wants testing to take place beyond the classroom. Assessment and testing have become a competitive process nevertheless the main objective is to ensure that learning has taken place given the objective of the class/course. No one wants an incompetent physician or emergency medical technician (EMT) treating them if he/she cheated to secure a license.

Conclusion

For future studies, replications, and expansion beyond a single institution to a variety of institutional types, sizes, and geographic locations can help test the applicability of the current findings. Qualitative or mixed-methods studies need to be conducted where relationships between demographic factors and cheating behaviors can be investigated in depth from the participants' own perspectives, so do those related to how students define, experience, and explain academic dishonesty in general and under a pandemic situation. For educators and educational institutions, it is necessary to realize that cheating is not going away any time soon, especially in a more digitalized world. As King and Case (2014) found, the most common form of cheating reported by students was downloading papers from the internet and claiming them as their own. Often students justify such behavior with a mentality that other students cheat more (King & Case, 2014). Given that education is a significant factor in increasing moral development (Kohlberg, 1984), it is essential for institutions to continue to address the need of

moral or ethical development within each major, even when students have already been oriented to ethical behaviors prior to entering higher education.

Collaborations across sectors to strengthen the institutional and faculty capacity to detect and catch cheating are essential. While the best outcome is increased moral values and decision making in students, appropriate policies (i.e., consequences for academic dishonesty) and infrastructures should not be overlooked, nor should their effects be underestimated or understated. It is important for faculty to recognize that such disciplinary actions, while undeniably having consequences, are educating opportunities for impactful life lessons. Helping faculty and staff to engage such difficult circumstances skillfully through meaningful professional development. That means rather than the typical sit-in lecture and discussion format, multimodal training such as simulations can more effectively building the competencies in faculty and staff as they not only learn the knowledge, skills, and dispositions but also apply and practices themselves in real-life scenarios.

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