

Does Gender Impact Cheating: An Empirical Study of Online Classes



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The popularity of on-line education continues to grow, and one must ask is this due to the convenience for the student, or the lack of direct oversight which allows academically dishonest behaviors to occur. Encompassing many forms, academic dishonesty includes plagiarism, note cards, having someone else do your work, and the unapproved usage of the ubiquitous World Wide Web. The authors sought to determine if cheating on online tests was occurring, and if so, was there a difference between males and females. The results of nearly 2200 exams taken by nearly 750 participants over multiple business courses were analyzed. Conclusive evidence of widespread cheating on exams was found. The introduction of the Respondus Lockdown Browser revealed lower grades (8.4% - 13.8%) when utilized. The specific results and comparison by gender is revealed along with recommendations for improving academic honesty.

1. Introduction

Academic dishonesty is prevalent in education. Regardless of the educational level, these behaviors manifest themselves in a variety of ways. The diminished shame of being caught coupled with reduced penalties have not curtailed these behaviors (Long, 2020). Faculty want to trust and respect their students, but their naiveté may be leading to inflated grades and less student learning. Some faculty argue higher stakes assessments exert greater pressure for cheating and they seek to counter this pressure by creating lower point assessments. However, if students are prone to commit academically dishonest behaviors, does the point value of the assignment really matter?

Academic dishonesty encompasses copying material from any source and turning it in as your own work, fabricating or falsifying a bibliography, turning in work done by someone else, copying from another student with or without their permission, using an unpermitted crib or cheat notes, and helping someone else cheat on a test/exam, (McCabe, Trevino & Butterfield, 2002).

Ironically, advancements in technology have increased learning, but also inadvertently have led to increased cheating. Cifuentes, & Janney, (2016) assert the use of laptops, tablets, smartphones, and the internet has increased the temptation to cheat because their use makes it so easy. However, technology is also a tool for the prevention of academic dishonesty. There are numerous academic tools to assist

faculty in assessing the originality of work. These products include Formative, Prototrack Turnitin, Honorlock, and Respondus.

There are stark contrasts between the stereotypes of studious females spending their evenings in the library while males are just dumb jocks wasting their time on the field. Therefore, the question is, are there differences in academic dishonesty by gender?

Purpose

The purpose of this paper is to determine if there are differences in the level of academic dishonesty between female and male university students. This assessment will be completed by analyzing the results of exams before and after the implementation of the Respondus Lockdown Browser© on exams.

2. Literature Review

Academic Dishonesty and Cheating

Cheating is a common behavior in elementary, secondary, and post-secondary institutions. Lack of brain and or the lack of motivation are perceived to be the major causes of these behaviors. However high-grade point average students also commit academic dishonesty Pérez-peña (2012). Cheating transcends ethnicity, education, and income levels as many of these behaviors have been learned and have been successfully utilized in high school. In surveys from 2002-2015 which comprised of over 70,000 high school students from across the United States, the International Center for Academic Inquiry found 58% of high school students admitted to cheating on a test, 64% admitted to committing plagiarism, and an astonishing 95% admitted to any form of cheating (Simmon, 2018). In a survey with over 23,000 students in public, private, and charter high schools, the Josephson Institute of Ethics Biennial Report Card on American Youth (2012) found 51% of students surveyed admitted to cheating on an exam at least once in the past academic year. Further, the majority (57%) agreed with the statement *"In the real world, successful people do what they have to do to win, even if others consider it cheating."* In addition, The Educational Testing Service found two-thirds of school students reported they cheated on a test and ninety percent copied another student's homework. Further, in a survey of 1246 students from public and private high schools, Dejene (2021) found approximately 80% of students were actively committing dishonest academic behaviors. Finally, in a study of approximately seven thousand participants comprised of five age groups (17 and under, 18-24, 25-40, 41-50, and over 50) the Josephston Institute (2009) found some connections between high school cheating and dishonesty later in life, which included cheating at work, cheating on spouses, and cheating on taxes.

Online Dishonesty

While many students prefer online courses for convenience, others choose these classes for the easier opportunities for cheating as evidenced by the many studies that report online systems in education are highly susceptible to academic dishonesty (Wolverton, 2016). Students confirmed this by admitting they were more than four times as likely to cheat in an online class as in face-to-face classes (Watson & Sottile, 2010). Interestingly, the majority of both, faculty and students, 64% and 57% respectively, felt it was easier to commit dishonest academic behaviors online than in a traditional classroom setting. However, half of the students surveyed felt the

frequency of online cheating was the same as in face-to-face classes (Harmon, Lambrinos, and Buffolino, 2010). Similarly, Dietz-Uhler, & Hum (2011) found the same prevalence of cheating regardless of the modality. Farisi (2013) found cheating was statistically more likely in unsupervised environments. This “*Online Disinhibition Effect*” is a socio-technological phenomenon that may be supported by digital technologies.

The members of the American Society for Clinical Laboratory Science noted the variance between exam scores and other work completed by the same student. Namely the high-test scores did not lead to the commensurate articulation of concepts in class. This disparity raised cautionary flags, but the hands of faculty were tied due to lack of evidence of cheating (Conway-Klaassen & Keil, 2010). Over 62% of college students concede professed to committing academic dishonesty and over three-fourths affirmed that cheating is a commonplace occurrence as over 20% sought assistance from friends, and a quarter received help from other sources (Elsalem, et al, 2021). Even in prestigious Ivy League institutions, cheating is a common occurrence. In 2018 Yale News conducted a survey that received over 1400 responses. Over 24% of the respondents copied another student’s answers and 14% admitted to cheating on exams. Sadly, only 8% were caught cheating (Prihar and Wanna, 2019).

Cheating has been a plague on educators for decades and has established itself in professional disciplines (Fontana, 2009). Research shows the specific disciplines of engineering, business, and nursing have particularly elevated levels of academic dishonesty. Dyer, Pettyjohn, & Saladin, (2020) studied approximately 500 freshman and sophomore engineering students at four institutions and found cheating was a normal occurrence. In a study of business school, alumni 86% admitted to cheating during their time in college (Burton, Tapade & Haynes, 2011).

Gender

Female business students viewed distinct types of cheating actions as more unethical when compared to their male counterparts (Elias, 2020). Further, female accounting students were more apt to rationalize unethical behaviors, but in totality, males cheated more. This finding is troubling since these unethical behaviors in college will be used when the student enters the workplace (Nonis & Swift, 2001).

Rabi et al (2006) studied Pharmacy students and found males were more apt to report others who cheated but ironically, males may have less self-control which leads to engaging on more academic dishonesty. Women on the other hand were more likely to feel shame and were less likely to cheat. Further, females, older students, and students with higher grade point averages were less likely to commit academically dishonest behaviors.

In a study of nearly 300 students at a large public university in the United States, Hensley, Kirkpatrick and Burgoon (2013) found 57% admitted to some form of academic dishonesty. Men were found to have a statistically higher rate of dishonest behaviors than females. In addition, students with lower grades were more apt to cheat. Caron, Whitbourne, and Halgin (1992) and Thorpe, Pittenger, and Reed (1999) found men were more likely to plagiarize the work of others or cheat on exams. Similarly, McCabe and Trevino (1997) and Jensen et al (2002) found males cheated more on tests and participated in higher levels of academic dishonesty. In a study of more than

1400 students, Korn and Davidovitch (2016) found males (36%) cheated more than females (29%).

In a study of nursing students, Arhin (2009) found males self-reported engaging in academic dishonesty more frequently than did female participants. Interestingly, even though males were a much smaller component of the total nursing workforce, a higher proportion of male nurses received discipline from their state boards of nursing (Zhong et al., 2009)

There have been many studies which have shown females were less likely to engage in academically dishonest behaviors: (Ives and Giukin, (2020), Krueger, (2014), Newstead et al (1996), Niiya et al (2008), Unal (2011), Whitley, (1998) Yu et al. (2017), Zhang et al. 2018).

In a study of students from around the world Sideridis et al (2015) found males were more likely to participate in dishonest behaviors. This can be partially explained by the stigma associated with female cheating in the Middle East (Al-Qaisy, 2008). Further, in a study of over 2000 college students in Taiwan, Lin, & Wen, (2007) found 62% admitted committing some type of academic dishonesty with males were more prone to commit dishonest academic behaviors than females. In a study of 212 students and 162 teachers in Norway, Chirumamilla (2020) found impersonation, forbidden aids, peeking, peer collaboration, outside assistance and student-staff collusion and seven different countermeasures were considered – proctors, biometry, mingling, shuffling, random drawing, sequencing, and broadcasting. Both students and teachers perceived cheating as easier with e-exams. They also thought some countermeasures would be easier to implement and could curtail cheating.

However, Naghdipour, (2013) did not find any statistically significant difference by gender and contends cheating may be a sexless behavior that could affect anybody. Interestingly, males were more apt to make excuses for cheating. In addition, males felt that cultural expectations such as beginning work directly after graduation resulted in added pressure to cheat to make sure they graduated timely.

Other studies found no differences in cheating by gender (Krueger, (2014), (Kucuktepe, (2011), Moberg et al., (2008). Finally, Crown and Spiller (1998) empirically reviewed studies published after 1982 did not find significant gender differences in academically dishonest behaviors.

Methods to Reduce Academic Dishonesty

Bain (2015) contends faculty can use traditional pedagogical methods for educating, preventing, and reporting dishonest academic behaviors and utilize technology to assuage cheating. To ascertain if online testing produced inflated grades, Alessio, et al, (2017) compared the work of nearly 150 students in different sections of the same class. Half the students used proctoring software, Software Secure and Respondus Monitor, which videotaped the students while they took the tests, while the others did not have any encumbrances. Proctored students' exams quicker and scored approximately 17 points lower than the unproctored students. However, even with lockdown browsers preventing cheating is not always effective since students can use other materials, their phones, or another computer to find the answers. Perhaps educating students on the value of academic integrity coupled with a variety of assessment instruments could curtail academic dishonesty (Supiano (2020).

Medical students recommended other forms of assessment in lieu of exams, the use of online proctoring solutions and compulsory pass/fail grades to curtail cheating. Their faculty used different exams, placed limits on the time to take the exam and applied one-way navigation to reduce the students' dishonest behaviors (Elsalem, et al, 2021).

McCoy (2017) cites a Kessler International survey of three hundred college students, 86 percent of respondents admitted to cheating in some manner. Of those who acknowledged cheating, 97 percent indicated that they had gotten away with it. He posits, it is the fault of the faculty for not creating an engaging environment, not making the material relevant, and not instilling a culture of unshaking academic integrity. Interestingly, students who felt their instructors were interested in them as individuals and were more engaged in their learning were less likely to commit academically dishonest behaviors (Al-Qaisy, 2008).

Educating students about the importance of academic integrity is critical. This includes e-cheating or digital cheating where students use a myriad of unauthorized electronic resources. Multiple studies have shown that universities with pre-emptive policies are seeing some improvement in misconduct rates as well as more involvement from faculty (Jarc, 2009, Shelling, 2008, McCabe, 2005 and Harmon, 2008).

Chiesl (2007) asserts making strong policies to provide a sound moral and ethical framework, limited time for the exams, personal or video surveillance, randomized questions and employing a statistical analysis to find abnormalities that could not have occurred naturally. Moten et. al. (2013) found successful exam proctoring occurred when the academic institution has a testing center and student identification cards were checked and verified the student is the one taking the exam.

King et al., (2009) recommended using shorter timed exams and essay questions to minimize online cheating. Christe (2003) recommends using multiple low-stakes assessments to display their level of learning. For exams, faculty should rearrange and rewrite exams every semester, have a time limitation and have them proctored and use plagiarism software such as Turnitin. The University of North Texas (UNT) recommends making your expectations clear for students and utilizing the learning management system to track students to see if they are viewing and participating. Therefore, it is imperative to establish a culture and expectation in higher education around the purpose of testing and assessment that incorporates the impact of academic dishonesty (Dyer, Pettyjohn, & Saladin, 2020).

The Educational Testing Services produced a cheating fact sheet which was utilized by Jaffe (2020), a Stanford faculty member. Despite the facts about academic dishonesty, Stanford contends the bottom line is bleak as cheating does not end at graduation. These unethical behaviors are serious issues for employers who are concerned about the integrity of new employees.

3. Methods

Undergraduate and Graduate classes in Business Management were selected as they were offered online over the previous 5 years. Data was obtained from the official grade rosters from Summer 2017, 2018, 2019, and 2020, Spring 2021 and Summer 2021. Beginning spring of 2021 the Respondus Lockdown Browser was introduced into these classes. This initial usage explains the lower number of respondents.

The Respondus Lockdown Browser® is an add-in to the institution's learning management system. It is being used at more than 2000 higher educational institutions. The assessments are displayed full-screen and cannot be minimized, and the browser menu and toolbar options are removed. In addition, the program prevents access to other applications including messaging, screen-sharing, virtual machines, and remote desktops as well as disabling printing, screen capturing, and copying and pasting (web.respondus.com/he/lockdown browser/) Before taking the exam, students are required to download the program, have a webcam and a microphone. Students first take a photo of their picture ID to ensure it is the same person taking the test. Then a brief live video showing what is on their desk and their surroundings. When the student begins the timed exam, both sound and video are recorded. The program flags head and eye movements, or any questionable behavior which is marked for review as low, medium, or high priority. The exact minute and second when the incident occurred is delineated. Faculty can then watch the entire video or skip to the issues to see for themselves if there is an issue. In some cases, behaviors were flagged but no discernable academic dishonesty was witnessed by the instructor. However, in other cases, the flagging revealed students had utilized notecards or their phone.

Results

A total of 741 participants engaged in 2183 tests. Seventy percent of the responses were before the introduction of the Responds Lockdown Browser (RLB). Sixty-five percent of the participants were female (see Table 1).

Table 1

Gender	No Lockdown	RLB	Total	Gender %
Female	354	128	482	65%
Male	165	94	259	35%
	519	222	741	
Browser %	70%	30%		

The students, based on the class, took either two or three exams. The students took their tests on their honor and achieved scores which were unusually high averaging 84%. There was remarkable inconsistency between the student test scores online when compared to students who took the exams in a face-to-face proctored environment. The faculty suspected academic dishonesty but had no way to prove it until the adoption of the Respondus Lockdown Browser.

After the Respondus Lockdown Browser was implemented, the test average dropped to 72.5%, a decrease of 11.5%. In other words, the average student's grade decreased by over a full grade meaning the students earned a full letter grade more for cheating. The scores for females decreased between 10.5%-13.8% while the male scores decreased from 8.4%- 13.5%. These differences from pre and post-RLB were statistically significant at the .000 level. These results are compelling evidence that academic dishonesty was occurring before the implementation of the RLB (see Table 2).

Table 2

			TEST 1	TEST 2	TEST 3
No Lockdown	Female	Mean	82.9%	84.6%	82.4%
	Male	Mean	81.4%	87.6%	87.6%
	Average		82.4%	85.6%	84.1%
	Differences Female to Male		1.5%	-3.0%	-5.2%
RLB	Female	Mean	70.6%	70.8%	71.9%
	Male	Mean	69.8%	74.1%	79.2%
	Average		70.3%	72.2%	75.0%
	Differences Female to Male		0.8%	-3.3%	-7.3%
	Difference RLB to No Browser				
	Female		-12.3%	-13.8%	-10.5%
	Male		-11.6%	-13.5%	-8.4%
	Diff by No Browser to RLB		-0.72%	-0.29%	-2.08%
	sig		*		***

For Test 1, the difference for females pre and post-RLB was -.72% which was significant at the .05 level. For Test 2, no differences emerged. For Test 3, females' pre and post-RLB scores were -2.08% over males. This difference was statistically significant at the .000 level. However, when viewing the results by gender in their totality no significant differences emerged ($t = .501$, $df = 737$, $sig = .616$).

4. Conclusion

Faculty had surmised cheating on tests was occurring but lacked sufficient evidence to pursue sanctions. However, after the implementation of the Respondus Lockdown Browser which records both sound and video of the student while they are taking the exams, faculty now have a resource to combat dishonest academic behaviors and make cheating more difficult to commit. The exams were completed much quicker and the scores were statistically significantly lower (-13%) which confirms academic dishonesty was occurring. The students were receiving an inflated score, more than a full grade, over what they earned. This finding is disconcerting since both males and females were equally dishonest.

The findings of this study support the work by Alesso et al (2017) who found students scored 17 points lower than those unproctored utilizing the Respondus Lockdown Browser.

In terms of gender, this study supports the findings of (Krueger, (2014); Naghdipour, (2013); Kucuktepe 2011; Moberg et al. (2008); Crown and Spiller (1998), who did not find significant differences in academic dishonesty based on gender.

This study does not support the numerous authors who found males cheated more than females.

At the most basic level cheating is wrong. We condemn it in sports and should harness that rightful indignation to instill values in our students since there is a connection between cheating at school and then later in life (Josephston Institute, 2009). It is the responsibility of the faculty to create the culture of honor and use the tools available to curtail or eliminate it. The United States Airforce Honor Code states it best *"We will not lie, steal, or cheat, nor tolerate among us anyone who does."*

Recommendations for Future Study

This study could be replicated to compare graduate or undergraduate students. Also, it would be enlightening to compare results outside of the College of Business with classes in Business. This study should also be replicated in other countries to determine the cultural impact.

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