Cheating in Online Classes: A Preliminary Investigation

by
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Approval Page

This applied dissertation was submitted by Mirella Baker Bemmel under the direction of the persons listed below. It was submitted to the Abraham S. Fischler School of Education and approved in partial fulfillment of the requirements for the degree of Doctor of Education at Nova Southeastern University.

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I dedicate this dissertation to my father, whose spirit was my guiding light. His life story inspired me to persevere with an insatiable hunger for intellectual growth and steadfast determination.

Abstract

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This applied dissertation was an inquiry into the phenomenon of cheating among students who take their classes online. There is a common perception that cheating is rampant in online classes and the Southern Association of Colleges and Schools, the accreditation association in the South, implemented policies, which mandate stricter monitoring of students. In turn, colleges have reevaluated or implemented integrity policies, but there is inconsistent enforcement of said policies.

Online faculty at three Florida community colleges were invited to complete a modified version of the Academic Integrity Survey, which provided insights into their perception of cheating, their awareness and enforcement of institutional policies regarding cheating and safeguards used or desired. The survey was followed up with an eight-member focus group discussion, and the results were triangulated.

An analysis of the data revealed that faculty is uncertain about the extent of cheating at their college, but most take action once they discover an instance of cheating. Their reaction to cheating may not necessarily be in line with the institutional policy although they are aware of the required steps. Different safeguards are used to protect the integrity of their courses, but there is an apparent lack of knowledge about available safeguards and their use.

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Chapter 1: Introduction

Online course availability appears to be the answer to increased interest in higher education, but questions regarding cheating in this environment have become more intense. The ability to take courses at remote locations has opened doors to students globally who may not have thought they would be able to further their education. While online education has been growing (Sloan Consortium, n.d.), questions about the integrity of courses offered online have gotten more intense (Mills, 2010; Parry, 2009; Roach, 2001). Faculty, administrators and even students continue to question whether the online environment is secure or if it provides an invitation for academic dishonesty (Mills, 2010; Parry, 2009; Roach, 2001).

Description of the Problem

The problem addressed by this study was the lack of documentation about the phenomenon of cheating in online instructional environments in terms of the extent, causes, effects, procedural preparedness, and future planning.

Background and Justification

The federal government's increased scrutiny pertaining to integrity in courses that are delivered via computer, according to the Southern Association of Colleges and Schools (SACS, 2010; WCET, n.d.), comes from the widespread belief that many higher education institutions have not closely monitored authentication in this environment. There are indications of widespread concern about cheating among college students, which has resulted in much research devoted to the topic of academic dishonesty (e.g., Black, Greaser, & Dawson, 2008; Eckles, 2010; Grijalva, Nowell, & Kerkvliet, 2010; Hollinger & Lanza-Kaduce, 2006; Moeck, 2002). The research for this study took place

in Florida, where the problems of dishonesty have also been evident. In 2007, Kaczor wrote about athletes at a Florida university who were involved in different forms of cheating in their online classes, a case that received nationwide attention. The Obama Administration has implemented revised regulations to the Higher Education Act (Higher Education Opportunity Act, 2008) designed to protect the integrity of online courses. These changes mandate that accreditation of institutions of higher education will be contingent upon the establishment of a process which ensures that the student who submits assignments in an online class is the same student who is actually enrolled in the program (Higher Education Opportunity Act, 2008).

The Southern Association of Colleges and Schools (SACS) adopted this revision in 2010 and offered suggestions for different methods in which this could be accomplished: "(1) a secure login and pass code, (2) proctored examinations, and (3) new or other technologies and practices that are effective in verifying student identification" (SACSCOC, 2010, p. 1). Educators and administrators have collaborated through organizations, such as the Western Cooperative for Educational Telecommunications (WCET, n.d.), where attempts have been made to uphold the standards of online classes by offering solutions to the growing concern about integrity in the online environment.

The institutions at the focus of this study were three community colleges based in Florida where online course offerings are available in both fully online and blended formats. Records at one of the colleges where the researcher is a faculty member showed that from 2006 to 2010 the number of students enrolled in blended courses at this institution grew from 3,983 to 21,028, while the number of students enrolled in fully online courses during that same time grew from 13,369 to 31,669 (R. Adkins, former

Vice President of Instructional Technology, personal communication, September 23, 2011).

Instructors who teach online can elect to have their students take proctored exams at the institution's online testing center available on site. According to their records, the online testing center served 11,530 students during the 2010 academic year (J. Davidoff, E-Assessment and Learning Resources Manager, personal communication, August 25, 2011). Since instructors who teach blended courses likely deliver exams in class, there is a surveillance gap between the 31,669 students enrolled in fully online classes, and the 11,530 presumed fully online students taking proctored exams at the testing center on site. This apparent gap has led the researcher to ask what measures were being taken by instructors to ensure that the remaining students do not cheat on their exams.

About the Researcher

The researcher of this study works at a community college where she is the Lead E-Associate. In this position, she mentors instructional faculty who are in the course development process, while she guides the developers through the implementation of quality standards mandated at the researcher's site. Additionally, she frequently facilitates E-Learning workshops face-to-face and online. She holds an instructional faculty position in Sociology and offers her classes face-to-face, fully online, and in blended format. She has been teaching online for 12 years and has developed several online courses that have also been delivered by other faculty.

Purpose of the Study

The purpose of this study was to provide an inquiry into the phenomenon of cheating in online courses. This study critically evaluated Gallant and Drinan's (2008)

institutional theory regarding academic dishonesty: factors that lead to cheating, what constitutes cheating, influences on cheating, and measures currently taken by instructional faculty to safeguard integrity in their online courses. The information gained from this study is intended to clarify existing perspectives on cheating, including influences on individual cheating and cheating in collaborative environments, the cheating culture, and motivations for cheating. Additionally, the research may help the participating institutions determine to what degree steps must be taken to ensure implementation of existing or newly proposed safeguards and to what extent the college is enforcing the code of conduct pertaining to academic dishonesty. The researcher offers suggestions on tools and professional development opportunities that need to be implemented to have an effective online program.

Definitions of Major Concepts and Terms

Online course assessment. For purposes of this study, online course assessment is defined as testing performed by students "with the assistance of the Internet and related technologies" (Watson & Sottile, Abstract, para. 1). Testing is performed by students whose courses are delivered via the computer through the use of the Internet or an online environment. The examinations are taken online by students and submitted electronically through the course website (Watson & Sottile, 2010).

Cheating. For the purposes of this study, cheating is defined as "academic dishonesty" (Watson & Sottile, Abstract, para. 1) including, but not limited to "cheating and receiving assistance during tests and quizzes" (Watson & Sottile, Discussion section, para. 4).

Plagiarism. For the purposes of this study, plagiarism is defined as "the intent to

claim as one's own someone else's words or ideas" (Simonson, Smaldino, Albright, & Zvacek, 2012, p. 285).

Chapter 2: Literature Review

Introduction

Distance education has opened doors to many who may not have thought that education was an option for them because of limitations of time or the distance to a specific location. Online education has been growing exponentially over time, and the questions about the integrity of courses offered online have been described as having gotten more intense (Mills, 2010; Parry, 2009; Roach, 2001). Face-to-face classes have been indicated to have fewer incidents of cheating, but also that faculty, administrators, and students have continued to question whether the online environment offers enough security to prevent them (Mills, 2010; Parry, 2009; Roach, 2001). Some studies have proposed that the distance between the teacher and the student is a factor that increases the instance of cheating in online courses, inasmuch as a student's identity can be assumed by someone else (Davis, Drinan, & Gallant, 2009). The purpose of this literature review is to address the issue of dishonesty online by providing information on the theoretical framework of academic dishonesty, the background, the importance of addressing dishonesty, and ways to help combat cheating in online classes.

Existence of Online Cheating

The question of whether students in online courses are submitting their own work continues as is the concern of students taking exams at home in a nonproctored environment (Black et al., 2008; Guernsey, 2001; Mills, 2010; Prince, Fulton, & Garsombke, 2009). These same studies state that online students are often not monitored and are free to share answers to exams, which are taken at home, or in any environment that provides Internet access. Patnaude (2008) concluded that the lack of monitoring may

give faculty the perception that students are more likely to cheat in online courses. The issue of cheating in the online environment has been addressed before, and some researchers agree that there is reason to be concerned, but that cheating online is not a bigger problem than it is in face-to-face classes (e.g., Grijalva et al., 2010; Kwong, Ng, & Mark, 2010). In fact, several studies have concluded that postsecondary students in online classes are less likely to cheat compared to students in the traditional face-to-face setting (e.g., Eckles, 2010; Grijalva et al., 2010; Guernsey, 2001; Hart & Morgan, 2010; Kwong et al., 2010).

Studies that have evaluated academic dishonesty have relied on self-reported surveys that asked undergraduate college students questions about whether they had cheated or how frequently they thought their peers engaged in dishonest academic behaviors (Mills, 2010; Stuber-McEwen, Wiseley, & Hoggatt, 2009). King, Guyette, and Piotrowski (2009) and Kelley and Bonner (2005) proposed that cheating is more common among postsecondary students from departments where the stakes of passing exams are high, such as nursing programs. Although there has not been evidence to support these claims, questions regarding the issue have continued to come up (Kelley & Bonner, 2005; King et al., 2009). The range of cheating varies, as do the demographics of college students who cheat. A study conducted among 1,390 postsecondary students revealed 70.2% of those who cheated were between the ages of 18 and 22 (Stearns, 2001).

Stearns (2001) classified cheating as an overarching term that includes a number of dishonest behaviors among college students, including copying from another student, giving other students access to the exam, taking the test for another student, getting answers from someone who previously took the exam, among other behaviors. Cheating

does not only pertain to dishonest activities on exams. Stearns (2001) showed that students allow others to copy their homework or papers they wrote, and they frequently engaged in acts of plagiarism. There are individuals and agencies that have made writing papers for others their way to earn money (Spaulding, 2009; Watson & Sottile, 2010). Although it does not seem to be one of the leading ways of cheating, it still occurs and therefore needs to be acknowledged according to Shaw (2004) and Stearns (2001). Shaw found that postsecondary students are more likely to cheat on exams than they are on writing assignments completed at home. His study set out to find out the extent of cheating in online courses among postsecondary students. Of the 581 students in his study, only 0.7% asked others to take their exam for them. Spaulding stated that self-reports on cheating are often unreliable, since postsecondary students may not provide frank answers if they fear that their academic standing may be placed in jeopardy. Additionally, Spaulding noted that postsecondary students may lie on a survey about academic dishonesty because they fear that their level of acceptance among their peers will be negatively affected. Findings from Jones (2011) supported Spaulding's conclusion on the unreliability of self-reports. In his study, Jones found that 92% of students indicated that they had personally cheated or knew of others who had cheated. He compared those results to results of similar studies where the self-report rate is much lower. Jones concluded that self-reporting must be unreliable, reasoning that otherwise the results would be similar.

In the online environment, cheating extends beyond signaling and exchanging answers. Moten, Fitterer, Brazier, Leonard, and Brown (2013) detailed some options of online cheating that included students waiting for their classmates to get the answers.

Moten et al. pointed out that when students take their exams in a nonproctored environment, they may also use multiple computers to facilitate cheating. On one computer, they will have the exam open, while the others provide Internet access, which is used to browse for answers. Moten et al. mentioned that students fraudulently claim that their computer showed error messages. While the instructor researches the problem, the student has a chance to look up the answers. At times, students will submit corrupted files to buy more time to complete a writing assignment (Moten et al., 2013). Students will ask others to take the exam for them, by providing their user name and password to third parties.

Extent of Online Cheating

The concern about cheating among college students resulted in much research devoted to the topic of academic dishonesty (e.g., Baron & Crooks, 2005; Boehm, Justice, & Weeks, 2009; Brown, Weible, & Olmosk, 2010; Eckles, 2010; Hollinger & Lanza-Kaduce, 2006; Moeck, 2002; Thomas & De Bruin, 2012). Newspapers have reported on different cases of cheating in higher education. Zou (2011) reported that students at a Boulder, Colorado institution cheated on assignments by having their peers submit in-class assignments during their absence. The students used hand-held devices, called clickers, which were registered under the owner's name, to submit class work when they were not in class. Zou's interview with a professor from the University of Texas revealed that many students exchanged answers, which were then submitted via the clickers. This resulted in students' receiving credit for work that was completed by their friends. The Air Force Academy in Colorado Springs, Colorado, also reported cheating among 78 cadets whose scores on a calculus final exam were much lower than

the scores on their previous online math exam (Rodgers, 2012). The cadets apparently used a math program, called Wolfram Alpha, to obtain questions from the same test bank that was used to create the exam. The extent of cheating could be influenced by field of study, as found by Sendag, Duran and Fraser (2012). Their study found that engineering and physical science students showed disproportionately higher numbers of cheating compared to their social science and education peers. Another influence to the extent of cheating, as indicated by Sendag et al., is the modality in which courses are taken. They found that students who only took face-to-face classes admitted to more cheating practices than students who took at least one class online.

Florida has not been spared from cheating and had made national headlines in 2007 when almost two dozen athletes at Florida State University were caught cheating in their online classes (Kaczor, 2007). The students involved in online academic dishonesty were all athletes who were either receiving scholarships at the time of the incident, or had received scholarships in the past. That incident revealed several common forms of online cheating: having someone else take the exam, receiving the answers from someone who has already taken the exam, receiving strictly prohibited assistance during the examination (Kaczor, 2007). Specifically, these Florida athletes had others write their papers for them and submitted them as their own and had their tutors take their exams for them (Kaczor, 2007).

For-profit schools are also under fire when it comes to issues of integrity. Their continued growth and cost of tuition are often mentioned as reasons why they may be lacking in rigor and integrity (Klor de Alva, 2011). The extent of cheating and concerns about it are not limited to the United States. Thomas and De Bruin (2012) surveyed 917

full-time faculty in Johannesburg, South Africa, to learn about the faculty perceptions of online cheating and actions they take to prevent it. The data that were gathered showed that 92.6% of the respondents felt that online cheating compromised the university's ideals.

No Evidence of Cheating

Attempts to find out whether the problem of cheating online is more serious than cheating in face-to-face classrooms have not been successful. Several studies consistently concluded that cheating online is as much of an issue as cheating in the traditional classroom (e.g., Grijalva et al., 2010; Klor de Alva, 2011; Krsak, 2007; Watson & Sottile, 2010). The studies reported a considerable amount of evidence of cheating being a serious problem, but the extent of the problem varied (Grijalva et al., 2010; Klor de Alva, 2010; Krsak, 2007; Watson & Sottile, 2010). Some of the shortcomings in the findings stem from the fact that the research is limited by privacy issues. As such, Watson and Sottile (2010) could not provide additional information regarding the majors of the undergraduate college students to show whether students with specific majors were more likely to cheat. Their study also failed to address the frequency of cheating by individuals. Witherspoon, Maldonado, and Lacey (2012) showed in their study that students who cheat are more likely to cheat by using contemporary methods ($r = .78$, $p < .001$), rather than the more traditional forms of cheating ($r = .68$, $p < .001$). Contemporary methods include, but are not limited to, the use of cell phones, text messages, and the purchase of research papers on the Internet. The researchers considered some examples of traditional forms of cheating to be whispering during the exam, turning in work completed by someone else, improper citations, and copying someone else's answers.

In one study where 225 postsecondary students completed the Academic Dishonesty Survey, findings showed that students enrolled in face-to-face courses appeared to be more likely to cheat compared to their online peers (Stuber-McEwen et al., 2009). There is only speculation about the reason(s) why online students do not appear to cheat as much, but researchers indicated it may have to do with the increased level of motivation by online students. The students' motivations and self-direction in the online environment may also be at a higher level, as more independent work is required (Stuber-McEwen et al., 2009).

Brown et al. (2010) conducted a study among administrators to gauge their perceptions of online dishonesty. A survey was sent to 555 business school deans who held a membership at the Association to Advance Collegiate Schools of Business. The responses sent back by 177 deans showed that 78% of them thought that less than 40% of their students participated in cheating. Only 5.1% indicated that cheating was a very serious problem, while 48.3% stated the problem was moderate. The perception of deans who had an honor code at their school was that cheating was not a serious problem, in contrast to the deans whose schools were lacking an honor code. Those latter deans perceived the problem of dishonesty to be more serious. Overall, the results show that the deans underestimated the overall extent of dishonesty. Brown et al. (2010) speculated that the deans may have lacked awareness of the problem of dishonesty because most of them did not teach and may have had poor communication with faculty who experienced these problems in their classrooms.

Federal Regulations

The Obama Administration implemented revised regulations to the Higher

Education Act motivated by the rationale of protecting the integrity of online courses. These changes mandate that accreditation of institutions of higher education will be contingent upon the establishment of "processes through which the institution establishes that the student who registers in a distance education or correspondence education course or program is the same student who participates in and completes the program and receives the academic credit" (2008, pp. Pub. L. No. 110-315, para. 115, II, ii, Stat. 3325). The 2010 adoption of this revision by the SACSCOC Board of Trustees has, in turn, increased the pressure on institutions which seek their accreditation.

Comparison of Online Cheating to Traditional Cheating

In a study by Black et al. (2008) about the prevalence of online cheating as compared to cheating in the face-to-face environment, it was found that there was a high proportion of postsecondary students who cheated in both online classes and face-to-face classes. But the authors proposed that their reasons for cheating might have been different. Black et al. compared 1,068 participants' perceptions about cheating and found that several factors contributed to the likelihood of the postsecondary students resorting to dishonest behavior. These factors ranged from the students' credit load to the level of interaction with their instructor. Contrary to other studies (Shaw, 2004; Spaulding, 2009; Watson & Sottile, 2010), postsecondary students in Black et al.'s study perceived that online students engage in less cheating than those in traditional classrooms. Watson and Sottile (2010) conducted a study among undergraduate and graduate university students to expand the limited amount of research that had been done in regard to online cheating. The participants of their study self-reported on cheating, including ways in which they cheated. Stuber-McEwen et al. (2009) explained that face-to-face university students are

more likely to cheat because of pressures they feel from instructors who set date and time deadlines. Such pressures could result in students' cheating out of panic. According to this hypothesis, they are less likely to panic in online classes where they have more flexibility with their time (Stuber-McEwen et al., 2009).

A quantitative survey was administered among 635 undergraduate and graduate students at a medium-sized university in Appalachia (Watson & Sottile, 2010). The focus of the study was on cheating behaviors in online and face-to-face classes by examining cheating behavior and perceptions of whether or not online or traditional face-to-face classes experienced greater cheating behaviors. Gender and participation in sports were seen as contributing factors to cheating as males and athletes showed higher instances of cheating. The conclusion of the study was that students in face-to-face classes were more likely to cheat, possibly because of their stronger social relationships with their classmates (Watson & Sottile, 2010). These connections purportedly enabled students to find peers willing to share information that led to dishonest behavior.

Turner Dille (2011) studied 343 students from various institutions throughout the United States to find whether or not there is a difference between face-to-face students and online students and their reported cheating behaviors. Findings were that cheating was prevalent in both modalities, but that students who cheated in face-to-face courses were 7.3 times more likely than online students to cheat in their online courses as well (Turner Dille, 2011). Furthermore, Turner Dille's results showed that 15.5% of students admitted to cheating in their online courses, compared to 18.4% who admitted to cheating in their face-to-face courses.

In general, students are much more likely to engage in face-to-face cheating

methods, than they would in digital forms of cheating, claimed Stephens, Young, and Calabrese (2007). In their study, they found that cutting and pasting information from the Internet is far more common now than it was in the past, and students create cheat sheets on their electronic devices rather than using notes. In general, students' self-reports indicated that 19% of the 1305 students in the study were more likely to resort to traditional cheating methods, compared to the 7% who reported using handwritten notes. Stephens et al. (2007) found that students who cheat did not exclusively rely on either type of cheating, but instead, they used both types of cheating as dictated by the circumstance. The findings also suggested that students view both types of cheating as equally serious.

Theoretical Framework

To gain better understanding of how academic dishonesty can be prevented, this study has drawn upon Gallant and Drinan's (2008) institutional theory to explain what motivates students to cheat and the faculty and administrative role in preventing it. Gallant and Drinan proposed a four-stage process, which is to guide an institution toward change. The stages are recognition and commitment, response generation, response implementation, and institutionalization. During Stage 4, Gallant and Drinan advised that the institution should focus on academic integrity. They suggest that academic integrity is considered institutionalized when policies and procedures related to it become widely accepted and implemented. Gallant and Drinan (2008) contended that a new norm would emerge upon this institutionalization. A case study by Gallant and Drinan illustrated the progression through the four-stage model, as they examined the lack of faculty response to academic dishonesty. During the recognition and commitment stage, the institution

would have to recognize that the problem exists and commit to taking the necessary steps to change it. The institution's response to the existing problem is said to occur in the second stage, while moving into Stage 3, the implementation stage. Finally, acceptance in the institutionalization stage would result from a buy-in by faculty, administrators and students who would all see the benefits and the long-term effects from the new process (Gallant & Drinan, 2008).

Hart and Morgan (2010) reported on a comparative, descriptive study of nursing students based on Gallant and Drinan's (2008) theoretical framework. The 377 students who took part in their study were composed of traditional face-to-face and online students. Hart and Morgan found that students reported low levels of cheating in both groups and high rankings in terms of how they rated academic integrity. Face-to-face students reportedly had more instances of cheating, which Hart and Morgan (2010) speculated to be possibly the result of the way integrity information and other academic policies are disseminated. According to their analysis, online students have to exert more independence and are expected to seek out written materials and policies on integrity, as compared to face-to-face students who experience the verbal dissemination of this information by their instructor. The information obtained by the online students is more in depth than the condensed version presented in a traditional classroom (Hart & Morgan, 2010). Hart and Morgan suggested that upholding and supporting the policy of academic integrity by the online students may be their attempt to protect the reputation of their degree and reduce the general concerns of academic dishonesty in online courses.

Honor codes. Contrary to the findings of Hart and Morgan (2010), Patnaude (2008) found that the presence of an institutional honor code does not decrease the

likelihood of cheating among students. As part of a study conducted by Patnaude (2008), 365 online faculty from five campuses at the University of Houston completed a "Faculty perceptions of academic honesty online" survey (p. 37). The study compared the perceptions of faculty who had reported to have taught at a university that had an honor code to faculty who had reported to have taught at a university that had no honor code. There was a significant statistical difference ($p = .009$) between the two groups: faculty who taught at a university that had an honor code perceived cheating to be higher among their students compared to their colleagues at universities without an honor code. Patnaude indicated, however, that no significant statistical difference in perceptions of student cheating existed between faculty who did not know whether an honor code existed and those who were aware of the honor code. In concurrence with Hart and Morgan (2010), Miller, Shoptaugh, and Wooldridge (2011) concluded that internalized integrity standards can be highly effective. They found that honor codes can be effective in that regard, as they underscore the students' moral character and instill in the student a responsibility that is integral in addition to their contribution to the academic community as a whole.

In their study, LoSchiavo and Shatz (2011) found that the impact of honor codes depends on the course delivery method. They implemented three studies in their Introductory Psychology course. Students in their fully online sections did not show a significant drop in cheating when they signed the honor code. The students in the blended courses who signed the honor code were 30% less likely to cheat ($N = 165$) than the students who did not sign the honor code (57.6% and 81.8% respectively; LoSchiavo & Shatz, 2011). Loschiavo and Shatz attributed the significant difference between cheating

patterns of students in the blended classroom versus those in the fully online classroom to the academic setting. LoSchiavo and Shatz (2011) hypothesized that when students have personal interactions with their peers and their teachers, they may feel a sense of moral obligation to be honest.

Reasons for cheating. Mayhew, Hubbard, Finelli, Harding, and Carpenter (2009) pointed out that cheating in high school could be an indicator that the student will cheat in college. Of the 527 college students who participated in their study, they found that 71.3% of the students reported that they never cheated on in-class exams while in college, compared to 50% who reported that they cheated while they attended high school. Twenty-seven percent reported that they cheated only a few times while in college, whereas the remainder reported more instances of cheating. Additionally, 40% reported that they cheated a few times on their tests while in high school. Mayhew et al. (2009) claimed that cheating in high school is highly predictive of cheating in college. They suggested that cheating can be diminished if instructors develop better understanding into the motivations of cheating and if the students are made aware of their violation of academic expectations that Mayhew et al. dubbed the "cheating norm" (2009, p. 432).

Chase's (2010) study of academic dishonesty with 2,302 students enrolled at a university in South Florida revealed that student connectedness played a significant role in their engagement with dishonest behavior. Chase concluded that the more connected students were, the less likely they were to cheat. Chase also found a positive correlation between the number of classes a student is enrolled in and their likelihood to cheat. Findings showed that the more classes the student was enrolled in, the more likely they were to cheat in their online classes. Students in Chase's (2010) study reported that they

were less likely to cheat if their instructor showed engagement within the course and care for the students. Findings by Sendag et al. (2012) did not fully support the notion that institutional policies served as a deterrent. They surveyed 1,153 students from a Midwestern university regarding the extent to which they cheated. Humanities and Education students were least affected by the policies, which led Sendag et al. to question whether the distribution of such policies varied and if such variations influenced their effectiveness. Their findings also showed that freshmen were more likely to engage in cheating compared to older students in their sophomore or senior year.

Gross (2011) challenged institutions and instructors to reevaluate their views on cheating, as the values of students from this new millennium have shifted. As a result of this shift, students look at cheating as a legitimate way of getting through school. Gross argued that ignoring this value shift will keep institutions stuck in their old views where they fail to become more tolerant of behaviors that are now widely acceptable and no longer condemned. In turn, negative, moralistic reactions to cheating only address the issue on a superficial level. Gross (2011) suggested "the need is to adapt performance criteria to these new realities rather than act to repress or punish them" (p. 436). Gross concluded that educators should therefore reevaluate expectations of their students by searching for new ways to contribute to the student's personal growth and learning process. Students' level of motivation also plays a role in their likelihood to cheat. Sendag et al. (2012) stated that more than two fifths of the 1,153 students they studied reported that they felt overwhelmed by their assignments. About 32% did not feel motivated by their assignments, or they did not feel capable of doing them or felt pressured to get good grades. Gross pointed out that the current generation of students is

pressured by the values of the work environment they strive to enter, where striving for credentials and good grades on a transcript lead them to a sense of entitlement. They feel empowered to challenge their teachers and offer suggestions for grade improvements, so they have a chance at competing against their peers. A solution to making improvements in academia is to encourage instructors to become more flexible by allowing students to have a say in their individual learning plan (Gross, 2011). According to Gross, this will likely enhance learning and make the relationship between the student and their teacher more effective.

What is considered cheating? In a study with 81 second-language instructors at 22 colleges across the United States, Correa (2011) found that what they consider dishonesty in their classrooms varies. While there might be agreement on some forms of dishonesty, for example, submitting a paper that was purchased online or one written by another student, the instructors varied in the way they rated the seriousness of cheating. Some forms of cheating that ranked low on perceived seriousness were asking another student what was on the test when they took it, enlisting help from tutors or native speakers, and using online translators. On the question related to who the ultimate victim of cheating is, participants almost unanimously agreed that the student is the ultimate victim (98.8%), while the institution ranked second (80.2%; Correa, 2011). Jones (2011) found that a student's perception of what qualifies as teaching depended on the scenario. The students unanimously agreed that turning in someone else's assignment as their own is cheating. Most (92%) of the 48 students sampled agreed that improperly citing information that was directly copied from an Internet course is cheating. Only 75% of students considered the purchase or download of a paper dishonest. A clear majority

(73%) of students did not think that submitting the same paper in multiple classes is cheating (Jones, 2011).

The results of Correa's (2011) study further showed that most instructors (70.6%, *n* = 75) preferred to handle cheating by giving the student a zero for their work, rather than following the institutional policy and dealing with the issue outside of the classroom. Approximately one third (34%, *n* = 70) of instructors who caught their students cheating indicated that they reported some (34%, *n* = 70) of the students, but not others; one third (31%, *n* = 70) reported all of the students; and one third reported none of the students who reportedly cheated. In their responses, instructors wrote that they lacked the support from their institution when it came to enforcing policies on cheating, while others wrote that dealing with the student directly was enough.

While academic integrity policies could offer clarity on cheating for full-time faculty, the buy-in may not be the same among part-time faculty (Hudd, Apgar, Bronson, & Lee, 2009). An example of how part-time faculty's understanding of the policies is slightly different from that of full-time faculty, was provided in a study by Hudd et al. in which the part-timers indicated that they did not see collaboration on homework and the use of notes during exams without authorization as serious violations of the dishonesty policy. While less than 5% of part-time faculty considered unauthorized collaboration a major violation, 41% of full-time faculty classified it as such. Their study also showed that for the most part, students felt that it was up to the instructor to take steps to prevent cheating, rather than for the students to take personal responsibility to conduct themselves honestly. The biggest difference among the responses received from full-time and part-time faculty was a matter of perception. While 68.5% of full-timers felt that

there was a lot of cheating, only 34.1% of part-timers concurred. This led Hudd et al. (2009) to conclude that part-time instructors may be less likely to include integrity policies on their syllabi and discuss issues of cheating in their classes. Hudd et al. concluded that part-time instructors may lack awareness because of their limited time on campus and limited involvement in professional development where more emphasis may be placed on institutional policies. Additionally, they thought that part-time instructors who teach at various campuses might have false expectations of the students based on their experiences on a campus where cheating rates are low.

When Pincus and Schmelkin (2003) reported on a study on the perceptions of academic dishonesty among faculty, they ranked their findings of the 212 usable surveys returned on a continuum. The majority of faculty considered behaviors like getting answers from another student during an exam and stealing exams extreme forms of cheating behaviors. However, the results showed mixed responses on whether using a previous exam to study is considered cheating or to be considered an excellent tool for preparation. The overall findings showed that faculty look at cheating on a continuum, which varies among the more serious to the less severe types of cheating (Pincus & Schmelkin, 2003). The differences between the student and faculty perceptions were highlighted as noteworthy, as students did not see sabotage of someone's work as a serious offense, whereas faculty ranked that very high. Pincus and Schmelkin (2003) recommended that institutional policies need to be clear on the different types of cheating and how to deal with them. They felt that existing policies often exclude what may be considered minor infractions, which could create confusion among students. Pincus and Schmelkin (2003) commented that faculty would benefit from having institutional

guidelines on how to deal with cheating that are on a continuum based on its severity. Sanctions should be determined based on the type of violation. Students might not understand that their behavior is considered cheating, as many of them underreported their own cheating that they saw as collaboration according to Williams, Tanner, Beard, and Hale (2013). At the Midwestern university where their study was conducted, Williams et al. found no institutional honor code, but they learned that the school had a student code of conduct in place. Furthermore, students were well informed of the school's policy during orientation in their freshman year as well as in classes that they attended. Despite the exposure to the policies, 67% of respondents admitted on the survey that they engaged in dishonest behaviors over the past year. Additionally, of the 562 responses that were received, 59% of the students indicated that they engaged in unauthorized collaboration.

According to Hudd et al. (2009), it is important to ensure that students receive the same message against dishonesty in classes taught by part-time and full-time faculty. This is especially important because of the large number of adjuncts that teach various classes at institutions across the United States (Hudd et al., 2009). Hudd et al. pointed out that faculty sometimes feel that enforcing rules against dishonesty is not their job and that students should have learned about integrity policies in high school. The authors claimed that attitude contributes to the perpetuation of cheating, especially since it makes the instructors less likely to reduce the perpetrator's grade or take any other corrective action.

In a study with 250 undergraduate students from a university in the northeast of the United States, Thakkar (2012) asked open-ended questions about their perceptions of different aspects of academic cheating. There were six main themes among the questions

asked, which touched on issues related to understanding the policy on academic integrity, the roles of the students, the roles of the instructors, prevalence, attitudes, and prevention. The survey revealed that the majority of students acknowledged that they were made aware of the institutional policy in cheating through student orientation and their instructor. The students' responses varied in regard to their interpretation of what constituted cheating, and they were particularly confused about plagiarism. The students mostly felt that an institutional policy was necessary, and that the burden of enforcing the policy rested on the instructors. Students in the study reported resentment towards instructors who chose to ignore reports of cheating (Thakkar, 2012).

Thakkar's (2012) study revealed that students felt strongly about implementation of preventative measures against cheating. The recommendations on prevention ranged from improved proctoring during exams to more individual instructor involvement with the students to help them improve. The students agreed that policy enforcement by faculty, in addition to frequent reminders of the policy, decreases the chances that students would resort to cheating.

Bruner's theory of learning. Insights into how students learn were provided by Bruner (1960), who argued that learning occurs when learners are motivated and information is presented to them in a structured fashion. When students are presented with new information, Bruner said that they will grasp this information best when they spend enough time to absorb it. If students are not excited about the materials they learn, they will lack excitement and they will be more likely to forget it quickly. Students are generally tested on what Bruner felt to be trivial facts which are only remembered through rote memorization. The intrinsic motivation to learn is thus displaced by the

pressures of getting credentialed, which in turn pushes some students to engage in dishonest behaviors. Bruner questioned the usefulness of "automizing devices" or "teaching machines" (p. 83), which may not adequately present challenging content and relevant exercises or aid in the student's ability to comprehend information presented through this medium.

Kohlberg's theory of motivation for cheating. Educators are responsible for teaching their subject matter, but arguably also for teaching morals and values to their students. Kohlberg (1981b) claimed that part of an educator's duty is to enforce classroom rules, and overlooking those would result in the decline of moral behavior among students. According to Kohlberg (1981a), people's motivation to cheat often relates to the norms of the group they are part of. This group determines a "moral atmosphere," which lays the foundation of how the group members will behave. As a result, Kohlberg concluded that it is not just the individual that should be addressed when it comes to moral decisions. Instead, he proposed that attempts should be made to raise the moral level of the entire group.

Kohlberg's (1981b) list of motives which determines people's choice of whether to behave morally provided insights which might be useful in a classroom setting. He identified the fear of being punished, expectation of receipt of rewards, anticipated approval, craving respect of others, and feelings of self-condemnation as motivators influencing why one would elect to make a morally sound decision. Furthermore, Kohlberg contended that the critical issue in cheating is "recognition of the element of contract and agreement implicit in the situation" (Kohlberg, 1981b, p. 44). Following from this reasoning, the likelihood of cheating increases if the situation is such that a test-

taker is not being supervised and the possibility of sanctions is unclear (Kohlberg, 1981b).

The psychology behind cheating was also studied by Staats, Hupp, Wallace, and Gresley (2009) who described students who do not cheat as heroes with special characteristics. Staats et al. found that the students who fit the attributes of being brave, honest and empathetic are most likely to be honest because cheating brings them a feeling of guilt, which has an overall restraining effect on their possibility of cheating at all. Based on these findings, Staats et al. suggested that attempts to prevent cheating must be influenced by an understanding of the psychology of the so-called heroes. Staats et al. (2009) compiled a list of traits to determine the characteristics of academic heroism. Based on their list, they created an instrument that consisted of questions that would help them determine where participants ranked in areas of empathy, honesty and courage. The Short Index of Bravery, the Morally Debatable Behaviors Scale, The Interpersonal Reactivity Index, and the Faces Index were existing instruments which laid the foundation for the modified instrument used by Staats et al. Their study of 383 Midwestern undergraduate students found in their anonymous, self-reported survey that the students who ranked high on bravery, heroism, and empathy ranked low on past, current, and future intent of cheating. Staats et al. (2009) found that the characteristics were weakly correlated with gender. Their theory suggested that combating academic cheating should involve an effort of institutions to increase the students' levels of bravery, courage and empathy. Students should be encouraged to be courageous, even when they are afraid of failing exams, and schools may consider awarding students who display those characteristics. Academic heroism, claimed Staats et al. (2009), should be

celebrated and acknowledged through formal ceremonies, like graduation. Additionally, Staats et al. encourage institutions to offer more support for faculty who often fail to follow through with reporting academic misconduct for fear of retaliation or wasted efforts.

One problem with cheating is that students may rationalize their behavior and not see any fault in their actions (Brent & Atkisson, 2011). This differs from purposeful cheating that is done in order to get admitted into an institution, or because of pressure or convenience (Devlin & Gray, 2007). When 56 Australian students participated in a study in 2003, they revealed that some of their cheating was done because of external pressures (Devlin & Gray, 2007). Claims about a lack of choice because of strict application policies and education cost were similar to the reasons used by students in the United States who justified cheating on exams (Brent & Atkisson, 2011; Devlin & Gray, 2007). Brent and Atkisson (2011) warned that these attitudes must be considered when an institution designs policies to prevent cheating.

In their study, Brent and Atkisson (2011) surveyed 420 students enrolled at a Midwestern university. The purpose of the survey was to compare different perspectives on cheating. The students were asked to answer questions related to the attitudes toward cheating among fellow students. The students' responses indicated that the perpetrators mostly denied their responsibility in cheating, a tactic in line with neutralization by Sykes and Matza (1957). Brent and Atkisson (2011) designed their survey to include questions related to a blend of theoretical perspectives. In addition to questions related to the Sykes and Matza theory, Brent and Atkisson included questions that were in line with Scott and Lyman's (1968) theory on reformulation. Brent and Atkisson (2011) found that students

most likely cheat because of personal crises they may be going through. The excuses fall under Scott and Lyman's theoretical perspective on neutralizing acts or consequences by offering excuses or justifications (Scott & Lyman, 1968). These are referred to by Scott and Lyman (1968) as "accounts" or explanations offered for behavior that is considered wrong or unacceptable. The act itself is not denied, but the reason for committing the act is somehow justified. Brent and Atkisson (2011) claimed that the theory of accounts offers a partial explanation of students' cheating behaviors. This helps to explain why Chapman, Davis, Toy, and Wright (2004) learned in their exploratory interviews with 40 students that the students saw nothing wrong with providing a friend with questions they could expect on an exam, as it would help the friend get a better grade. The students' answers led Chapman et al. to develop a questionnaire for a sample of 824 business students at a western university. Fifty-eight percent of students felt that it was considered cheating to pass information on a test to another student, after the professor's specific request not to do so. Further findings indicated that although students think cheating is morally wrong, they continue to do it because they perceive that the benefits are higher than the cost. The students also indicated that they felt that everyone else was doing it (Chapman et al., 2004).

Brent and Atkisson's (2011) study revealed that 245 of the 401 students who completed the survey indicated that cheating could never be justified. However, 144 students indicated that under certain conditions cheating could be justified; for example, if the result could move them further along. This justification supports Sykes and Matza's (1957) theoretical perspective on neutralization (Brent & Atkisson, 2011). Sykes and Matza (1957) studied different types of deviant behavior, ranging from minor offenses to

serious crimes, and concluded that much can be explained by the theory of association, which states that delinquency arises from the acceptance of new norms and behaviors. According to Sykes and Matza, delinquent behavior arises for different reasons, depending on which technique is adopted by the person who violates the norm. The type that is directly in line with Brent and Atkisson's (2011) findings is "denial of responsibility" (Sykes & Matza, 1957, p. 667). When it comes to exams, students more likely admitted their wrong-doings, but would often justify their response by offering excuses, such as stating that the material was not covered during class lectures (Brent & Atkisson, 2011). Students, according to Brent and Atkisson, see cheating on exams much differently than they see cheating on homework. Students in Brent and Atkisson's (2011) study reported that working together was almost an essential part of learning. As such, Brent and Atkisson stated that instructors must hold up their end of the bargain, and clearly indicate in their course contract what constitutes cheating and which behaviors would be considered unacceptable. Additionally, clear statements of the ramifications, including punishments, need to be mentioned on the contract (Brent & Atkisson, 2011; Chapman et al., 2004). Miller et al. (2011) found in their study, however, that students who were made aware of the harsh consequences of cheating were more likely to cheat. They concluded that "punishment has its effect when we make the salience of punishment high, but is likely to have little effect when the perception is that the probability of being caught is low" (p. 180).

Catalogue of Different Types of Combative Measures

Role of faculty. In an effort to increase credibility and to maintain accreditation status many schools have looked for ways to lower instances of cheating and also to

lower the perception that cheating is widespread, especially in online courses (Moeck, 2002; Parry, 2009; Prince et al., 2009; Roach, 2001). During their interviews of 225 upper- and lower-level undergraduate students, Stuber-McEwen et al. (2009) found that these adults who were also enrolled in traditional postsecondary classrooms all reported that they had cheated in the past. Their self-reports showed a higher instance of cheating in the classroom by students whose cheating was prompted by panic during the exam, rather than by deliberate planning to cheat. Stuber-McEwen et al. (2009) stated that students in online courses may be better motivated and therefore less inclined to cheat, and that instructors in online courses may be more vigilant about preventing cheating because of their perception that more cheating occurs online. The SACSCOC (2010) mandate that institutions wishing to retain their accreditation are under pressure to take measures to ensure that faculty strictly enforces their institution's code of conduct dealing with dishonesty.

In an effort to minimize the amount of cheating that takes place, Moten et al. (2013) suggested rapport-building on the part of the instructor. The instructor will get to know the student through frequent interactions, which will give an idea of the student's writing and testing style. Having the students sign a dishonesty statement with each submission, administering proctored exams and using multiple versions of exams were mentioned as viable options to curtail dishonesty. Other suggestions include setting cheating traps by creating websites that contain the exam questions with incorrect answers. The instructor can take on the role of "class mole" by enrolling themselves in the class under an alias (Moten et al., 2013). This fake student may then inadvertently be included in conversations that could catch cheating students in the act.

Harkins and Kubik (2010) suggested that in a face-to-face classroom, safeguards to prevent cheating could be proctoring written exams, assignments, or other graded class activities. Students do not always realize their behavior is considered cheating, claimed Harkins and Kubik, and these students sometimes feel that they are engaging in collaborative behavior with the resources that are available to them. According to Harkins and Kubik (2010), students make use of readily available tools online, and these students do not realize that the availability does not justify their use in the context of a summative evaluation. Harkins and Kubik mentioned that this form of cheating may be considered ethical by the students because it is widespread and seems to have become the norm. Harkins and Kubik dubbed this type of cheating "collaborative ethical cheating" (2010, p. 139), because it is common among students who, as he claimed, have learned to cheat defensively. Davis et al. (2009) stated that it is easier to plagiarize when information is so easily available through the Internet. Additionally, students are competing in a global environment where they often feel pressured to get ahead so they may enter the workplace, which embraces speed and innovation. Workers are expected to access information quickly and perhaps it is felt that copying from online resources is not frowned upon by employers (Harkins & Kubik, 2010).

Harkins and Kubik (2010) added that the types of cheating among students has moved beyond the traditional exchanges of answers or getting answers from the person who sits close enough to them that they can read their answers. Students now use devices that are not always easy to detect because they have gotten smaller and more sophisticated. Harkins and Kubik contended that students have easy access to digital media, the Internet, and software which can give them unauthorized access. Many cell

phones are now equipped with Internet access, which tempt students to take pictures of their exams for friends (Harkins & Kubik, 2010). Even teachers expect more collaborative work, as they encourage their students to tap into the multitude of resources available online (Davis et al., 2009). This can contribute to students' misunderstanding of their limitations when it comes to the use of the information that is obtained. The vast array of resources is beyond the teachers' control, and they struggle to prevent cheating or to enforce the school's honor code (Davis et al., 2009). Patnaude (2008) suggested that honor codes should be developed by instructional technology departments at their respective institutions, which should be specifically designed for courses that are delivered online. Enforcement and acceptance of those customized honor codes may be more successful than enforcement of general honor codes which were initially designed for face-to-face classes (Patnaude, 2008).

Preventative measures against cheating may need to start with a look at why students are inclined to cheat. Kohn (1999) posited that rewards and punishment are useful for training animals, but he warned that these behaviorist techniques impede learning. Instead of feeling motivated by good grades or awards, students need intrinsic motivation, which will help them understand the value of learning (Kohn, 1999). When students are motivated to learn, he argues, they will perform better as a result, and when their interest gets triggered, the students' overall achievement improves. Kohn therefore suggests that educators should design intriguing and engaging tasks to serve as intrinsic motivation for the students. Kohn (1999) says that when students are given the opportunity to play an active role in their learning process, they perform much better than when they are passive recipients of information who must demonstrate their knowledge

by scores on assignments and examinations. Students may perform well because of the immediate reward they work towards, but their long-term interest in learning is negatively affected by complying with the status quo. Kohn warns that students may lose their motivation to learn when the rewards cease to exist. Kohn (1999) challenged the system by questioning the value of the evaluation process that is currently in place in academia. The pressures are not only on the students who have to perform to standard, but also on the teachers who are restricted by measures set by the institutions. These measures are usually grade or performance related, which in turn drives the teachers to feel pressured to get the materials across to the students within a limited environment of constraint (Kohn, 1999). Sendag et al. (2012) mentioned that peer pressure contributes to the instances of cheating in online classes, and educators need to consider incorporating lessons on how to utilize positive peer pressure.

Correa's (2011) study concluded that many instructors do not take their role in combating cheating seriously. Correa complained that they do not explain to their students what cheating is and warned that there cannot be an expectation of integrity if the students are not given the academic policy on cheating. Correa stressed the importance of following the institutional policy on cheating to ensure the credibility of the school. Simply giving the student a zero and handling the matter individually, stated Correa, aids in poor record-keeping as future instructors would have no way of knowing whether the student committed a first offense. This point is supported by Thakkar (2012) who stressed the importance of following through after an incidence of cheating is discovered. Thakkar recommended that the burden of preventing cheating should be shared with students who can become anonymous informants who might get incentivized

by rewards. The role of faculty in the prevention of cheating was highlighted by Thomas and De Bruin (2012), who stated that barriers against cheating will only be effective when faculty commit to advising students what cheating entails, explain what the consequences are of cheating and finally, commit to taking steps to report cheating and follow through with disciplinary actions. In their research with online faculty in Johannesburg, South Africa, Thomas and De Bruin (2012) learned that some instructors do not feel responsible for curtailing cheating by their students. Conversely, of the 60% of faculty who reported that they had reported cheating in the past, 80% indicated that they would much rather provide students with policies regarding academic integrity, than take disciplinary action once cheating occurs. They blamed their inaction or unwillingness to take action on their workloads and lack of evidence that cheating in fact occurred, thus resulting in psychological discomfort. Faculty also blamed the institution's lack of consistency in dealing with reported dishonesty.

Williams et al. (2012) proposed that institutions should implement a required module on academic integrity that students must take within their first year of enrollment. The early exposure was expected to elicit open discussion of students with their peers and their instructors, which would address any questions the students may have. Additionally, Williams et al. claimed it would create a platform where incorrect information or misconceptions could also be cleared up. Williams et al. (2012) suggested that faculty members should also be educated on the topic to gain better understanding of dishonest behaviors and their responsibility to combat them.

Other suggestions on how to combat cheating range from the instructor checking the students' citations, to the use of webcams, increasing the number of required papers

that can be checked for plagiarism, limiting the exam time, incorporating the use of Skype for oral examinations, using different assignments in the classroom, providing clear guidelines on rules and expectations, locking Internet sites while the exam is in progress, and using full screen programs to create the exams, which prevent students from minimizing the screen (Cole & Swartz, 2013).

Ways to prevent plagiarism. Jones (2011) recommended the incorporation of the academic integrity policy and the institutional honor code as part of the syllabus. She suggested that the policies should be clear and the steps that would be taken when such policies are violated should also be mentioned. According to Jones, online instructors should make specific mention of what is considered cheating, because the expectations in the online environment may be different from face-to-face. The policies should be reviewed during the course orientation, and students should be quizzed on the policy to ensure their understanding (Jones, 2011). Jones proposed the use of an entertaining activity to draw students' attention to the policy. The syllabus or the learning activity related to academic integrity should include links to tutorials in the Internet, which provide additional background information.

Copyright issues have a bearing on the issue of plagiarism as they help students understand the problems with cheating. Since students come from diverse backgrounds and schools, they may not understand what constitutes plagiarism especially because of changes which almost seem to promote plagiarism. Farnsworth and Bevis (2006) argued that materials of others, such as information or photos should be assumed to be protected, and permission should be obtained prior to adopting the information. Farnsworth and Bevis (2006) stated that students over the age of 18 are protected by copyright laws, but

they must understand that information submitted for their classes for the purpose of assignments, for example, gets added to their institution's database. Students are often not allowed to submit the same work for different classes without the permission of the instructor, said Farnsworth and Bevis. Their views are not widely accepted because the interpretation of academic dishonesty in terms of submission of one's work for more than one class varies from institution to institution (Schmelkin, Gilbert, Spencer, Pincus, & Silva, 2008). In their study with 560 students, Schmelkin et al. found that students' perceptions of cheating on papers are different from how they perceive cheating on exams. The lack of clarity of what constitutes cheating may lead to unintentional cheating, misinterpretation, or lack of consistent action from the instructor in response to cheating behavior (Schmelkin et al., 2008). To prevent violations of the integrity policies, students should be asked to provide a written copy with citations for written and oral presentation according to (Jones, 2011). These submissions, Jones pointed out, can be submitted to plagiarism detection programs, such as SafeAssign.

In their article, Harkins and Kubik (2010) argued that "copyleft" encourages cheating, since it is the antithesis of copyright. They claimed that it allows users to find and modify materials and claim them as their own. Lessig (2008) pointed out that writers' creativity is stifled when they are unable to produce information that was modified, without the permission of the original author. While some consider it plagiarism, Lessig called this form of creative writing remixing, where authors freely use materials from others to create a different version. He argued that allowing users to edit web-based or print-based material encourages creativity and should therefore not be held by a standard of plagiarism rules which stand in the way of the creative process.

Harkins and Kubik (2010) stated that access to music and other software provides all users an opportunity to creatively make modifications. This applies to writings as well, and students have free access to papers they can in turn modify and call their own (Harkins & Kubik, 2010). Simonson et al. (2012) provided descriptions of various ways in which materials are protected by copyright laws. They stated that an instructor's notes are subject to protection. They further explained that since material in online courses is digitally presented to students, this material is considered "fixed" and may not be reproduced by the student without permission from the instructor. Simonson et al. (2012) also discussed different forms of plagiarism, and claim that "online entrepreneurs" are particularly troublesome because they sell prewritten papers to any interested buyer, who can make changes as they see fit, and submit the work as their own. Simonson et al. brought up the issue of student's intellectual property rights, as they mentioned that the services offered by websites such as Turnitin.com or SafeAssign could pose a breach of those rights. Their concern stems from the fact that the students' papers get added to the databases of the aforementioned companies without the students' permission. Witherspoon et al. (2012) and Heckler, Rice, and Hobson Bryan (2013) stated that students' awareness of technological cheating detection resources may serve as a deterrent and prompt students to take charge of their academic success with honest pursuit.

In their study, Heckler et al. (2013) found that when students knew their work was going to be submitted through a plagiarism detection program, they were less inclined to cheat, and the problem of plagiarism was reduced. The researchers used secondary data from Turnitin to review the scores of seven courses offered in the fall of 2010 and the

spring of 2011. In their courses, the students were provided with a syllabus which included the academic integrity policy. In the fall of 2010, the students were asked to submit their papers, without being told by their instructor that it would be submitted through a plagiarism detection system. In the spring of 2011, the students were required to submit their paper through the plagiarism detection service (Heckler et al., 2013). Turinitin results are expressed in percentages, which indicate the amount of overlap found. The results showed that students who were unaware that their paper was going to be submitted for plagiarism detection were most likely to plagiarize from other students. They ranged between 0% to 76% in overlap. The mean was 16.33% and SD = 16.92%. The students who were aware that their paper was going to be submitted to detect plagiarism had a range of 0% to 48.33%, mean = 9.34%, SD = 8.8% (Heckler et al., 2013). Their findings showed that males were more likely to plagiarize than their female counterparts. The researchers concluded that the use of plagiarism detection software provided a significant prediction of plagiarism. The conclusion is in line with Moten et al. (2013), which suggested the use of Turinitin.com, WriteCheck.com, and Duplichecker.com to detect plagiarism in submitted work.

In Baron and Crooks' (2005) research, they mentioned that instructors need to be vigilant about catching the students who engage in plagiarism. As part of a solution, they offered that instructors could provide students with in-class writing exercises, which helps to set a baseline for these instructors who later assign papers that have to be completed outside of the classroom. Baron and Crooks (2005) proposed that the instructor could compare the writing style of a student's in-class work to assignments completed at home. They also wrote that issues of instructors who notice significant

differences in a student's writing styles are not uncommon. In online classes, instructors have numerous ways of obtaining writing samples from students, because students are expected to engage in writing continuously through emails and discussions (Davis et al., 2009). Farnsworth and Bevis (2006) suggested that teachers can look for the sudden changes in writing style by looking for sudden changes in the font of printed work, and stylistic differences in the reference list, which may have been pasted from different sources.

Patel, Bakhtiyari, and Taghavi (2011) recommended that teachers should require students to submit documents that are unlocked. PDF documents often have a locking feature, which prevents the use of plagiarism detection tools. An instructor who tries to submit a paper in PDF format to verify originality will receive an error message and will not receive any results (Patel et al., 2011). There are ways around plagiarism detection tools, and Patel et al. stated that tricks are being used to make the tools ineffective. Replacing spaces with dots, called "Dot Replacement" and changing the dot color to white apparently tricks the detection programs. Rather than reading independent words, the program will process the text as single word sentences (Patel et al., 2011). Translator services on the Internet also offer an opportunity to change sentences, when text is translated into another language and then translated back. Patel et al. explained that the initial translation is often not a direct translation, but rather a paraphrased version of the text. This can be done multiple times with different languages, each one offering its own interpretation. When converted back, the translated text offers a paraphrased version of the original text with a different sentence structure, which will not be detected by originality programs, such as Turnitin.com, PlagiarismDetect.com, and iThenticate (Patel

et al., 2011).

When students are taught to use online citation tools, stated Jones (2011), they get in the habit of generating a reference list, which should be submitted with their work. Jones recommended that instructors familiarize their students with tools such as Easybib and the Citation Generator.

Another solution offered by Baron and Crooks (2005) is the use of portfolios. They mentioned that students who keep a portfolio during the semester would have multiple samples of their work, similar to the writing sample that can serve as a baseline of students' work. Additionally, Baron and Crooks stated that instructors need to increase their level of awareness, as students do not always remove the evidence of their cheating ways: they may leave information in the headers or footers, which instructors can detect if they activate those functions while reading the paper.

Baron and Crooks (2005) pointed out that reporting cheating students for disciplinary action is not consistent among instructors, who may see it as additional work or not worth the trouble of reporting. In their research, Williams et al. (2012) learned that of the 74% of faculty who acknowledged knowing that cheating takes place in their classes, only 18% reported it. Institutions often have policies on academic dishonesty, and instructors are advised to include those policies in their syllabi and apprise students of the consequences. Baron and Crooks (2005) speculated that these policies alone deter cheating and that therefore enforcement should be compulsory. If not enforced, Baron and Crooks argued, students quickly realize that they can get away with dishonest practices. They pointed out that students' work that is submitted online can be checked for plagiarism through available programs, such as Turnitin and Integriguard, or by

simple checks with search engines such as Google, which usually picks up exact sentences that were copied into a student's writing assignment. Farnsworth and Bevis (2006) also recommended the use of Google, which is an easily accessible search engine that can track plagiarism by typing parts of paragraphs or sentences in the search area to look for plagiarized information. Williams et al. (2012) found that faculty don't usually report instances of cheating as they lack evidence, see it as trivial, or that the student will eventually suffer the consequences when they get caught in future classes.

Chapman et al. (2004) suggested a college-wide campaign to combat cheating, that would enlighten the students with factual information regarding the extent of cheating. Since students overestimated the occurrence of cheating by others, Chapman et al. proposed that the tactic might be as successful as a similar approach used to combat alcohol use at universities. This, however, is not supported by McCabe and Trevino (1997) who reported that awareness of the academic integrity policy and peer reporting has not proven to make a significant difference.

High teacher and learner interaction. Like other researchers (Prince et al., 2009), Baron and Crooks (2005) have recommended high levels of interaction between students and between the student and their instructor. Prince et al. (2009) have listed other practices that deter online cheating, such as including group projects and requiring prompt feedback. Students can engage in group interactions by creating multiple discussion questions and posting them on the class discussion board. The instructor can then assign each student a set of discussion questions to answer (Farnsworth & Bevis, 2006). Prince et al. (2009) suggested that students should be assessed in multiple ways, so their final grade in the class is determined by their participation on exams, quizzes,

discussions, papers and group activities. The use of open-book exercises and collaborative work can foster students' ability to synthesize information from different resources, stated Farnsworth and Bevis (2006).

According to Lieber (2012), students form their own conclusions on cheating and faculty efforts to reduce it. Lieber observed that they reported lower incidences of cheating when their teachers used various versions of the test during the examination and if they only reused tests or portions of tests for 2 years or less. Changing the questions would lower the students' chances of obtaining an advanced copy. Random-spaced seat assignment and different exam versions were indicated as providing additional cheating barriers. The role of proctors was highlighted by Lieber (2012) as well, particularly the actions of the proctor who provides close monitoring of the students. Some examples included staying in the room, keeping a watchful eye and walking around in the room on occasion. Lieber examined whether providing instructors financial incentives for deterring cheating made a difference. His findings were that the likelihood of these incentives is rare because of budget constraints, and that instructors are generally intrinsically motivated to deter cheating.

Setup of online exams. Various researchers proposed that to lower the instance of cheating, instructors can change the order of the questions and change exams frequently to ensure that exam questions or answers are not shared between students (Baron & Crooks, 2005; Farnsworth & Bevis, 2006; Moeck, 2002). Open-ended questions require a deeper level of thinking and involvement, stated Baron and Crooks (2005), and could be used instead of multiple-choice questions. In turn, they explained that these essay questions should carry more weight than multiple-choice question. Other

ways to lower cheating offered by researchers include using a variation of different types of questions, varying the order of the questions (Moeck, 2002), and limiting the test availability to only one hour on a specific day to lower the chances of sharing test information (Farnsworth & Bevis, 2006). Students who are unable to take the test at that time should be given an alternate test with different questions, stated Farnsworth and Bevis (2006).

Baron and Crooks (2005) claimed that engagement in group projects shifts the responsibility as well, arguing that this makes the students responsible for their share of the work. Interaction with others supposedly makes it more difficult to cheat (Baron & Crooks, 2005). Moeck (2002) suggested that administering tests more frequently also deters cheating. Furthermore, he stated that conferences with students help establish rapport, which he claimed to be a deterrent against cheating. Moeck explained that as the students build a relationship with their instructor, they may feel a sense of guilt or may be fearful of the instructor's finding out about their dishonest behavior. Moeck (2002) pointed out that conferences can be set up via the telephone, the computer or even face-to-face.

Ullah, Xiao, Lilley, and Barker (2012) designed a "profile based authentication framework (PBAF)" to authenticate students who take online exams. Along with a user identification and password, students are required to answer challenging questions that are used to identify themselves. Ullah et al. stated that unlike the banking experience where users are less likely to share their user identification and password, students may be much more willing to share their personal information with others if their intent is to cheat. The PBAF uses a two-step approach to authenticate the student, namely, the initial

login with their username and password, followed by a series of profile and challenge questions. Students who fail to answer the questions correctly are denied access and are reported. In their study, Ullah et al. (2012) tested the PBAF on 34 participants from universities within the UK and other universities outside of the UK. The authentication process was done for 7 days spread over a 3-week span. The results of their study showed that well-designed questions make it difficult for inauthentic users to answer the questions correctly within a short time. Critical in the validity of the PBAF, said Ullah et al. is the selection and design of authentication questions which will not lead to misinterpretation or allow multiple ways to answer them.

Testing centers. One common practice to ensure integrity is that of using testing centers which have proctors who monitor test-takers (Baron & Crooks, 2005; Prince et al., 2009). Prince et al. (2009) suggested that proctors should require two forms of identification from the students, to ensure that they are indeed the person they claim to be. Institutions that do not have an on-campus testing center, or who have students who reside outside of the region where the institution is located, can seek the assistance of a nationwide testing center such as the National College Testing Association (NCTA, n.d., cited in Prince et al., 2009). Participating schools can join this consortium of 259 participants located throughout the United States as well as in two other countries. Students who wish to take their proctored exam at any of the NCTA centers need to pay a fee that ranges depending on the location of where the exam is administered.

Jung and Yeom (2009) offered an alternative to the use of proctors placed in the same room with the test-taker. An elaborate system which provides remote monitoring of students while also securing their identity is called the Security Control system in the

Online Exam (SeCOnE). Each student's computer would need to be equipped with a web camera and microphone and the SeCOnE system software would need to be installed. The software serves as a verification tool, which establishes the identity of the test-taker and delivers questions and answers through encryption. Additionally, screen shots of the examinee are taken throughout the test-taking period, which can be reviewed for suspicious behavior, such as navigation away from the screen. The system also provides a way to lock any communication tools during the examination, thereby minimizing a student's ability to strike up a chat or email conversation with someone else (Jung & Yeom, 2009). Prince et al. (2009) recommend that nonproctored exams should be used for extra credit type activities, and they should not make up a large percentage of the student's final grade in the course.

Mirza and Staples's (2010) study on the use of cameras for monitoring purposes during examinations found that 80% of the 33 students that were monitored reported feeling uncomfortable during the test. The students felt psychological pressure, which Mirza and Staples warned could lead to anxiety during the exam. The students did report, however, that they were more likely to cheat when they are being monitored by a camera as compared to having a live proctor in the room during the examination.

Some students fail to see the value of education and seem to worry more about the grade they will receive at the end of the term, than the quality of education and course outcomes, claimed Bedford, Gregg, and Clinton (2011). Bedford et al. (2011) observed that in order to be considered for jobs or universities, students focus on the grade, rather than their education. In their study, 20 faculty from University of West Alabama responded to the call for participation in a pilot program where the Remote Proctor was

going to be evaluated (Bedford, Gregg, & Clinton, 2009; Bedford et al., 2011). These instructors had their students complete their exams while being proctored remotely. Each participating student had to install the required software and submit their picture and fingerprint for identification purposes before they were allowed to take the exam (Bedford et al., 2009; Bedford et al., 2011). Students were made aware that they were being watched and that the Remote Proctor would record any suspicious behavior. The 30 students were asked to purposefully engage in suspicious behavior, and the recordings were given to the faculty for their review. Of the students who were part of the study, 15 responded favorably to the use of Remote Proctor, while 5 did not like it. The remainder of the 30 students who were part of the study had no opinion (Bedford et al., 2009; Bedford et al., 2011). Faculty also reported favorably in terms of the use, with 14 answering yes, three saying no, and three not expressing their opinion. Based on their findings, Bedford et al. (2011) recommend that institutions implement a policy to verify the students' identification prior to their taking an exam and using live or remote proctors to help curb the extent of cheating. The recommendations were made despite the limitations pointed out by the researchers: at the time of the study, the Remote Proctor was not available for Macintosh computers; it could not be installed on computers of military students in Iraq and Afghanistan; nor could it accommodate some students with special needs (Bedford et al., 2009). After the study and upon implementation of the Remote Proctor at the small southern regional universities, there were reports of 600 calls for IT assistance and students expressing privacy concerns (Bedford et al., 2009).

Tutors and biometrics. Students who work with tutors, or have a relationship with teaching assistants, also build connections that deter cheating, claimed Baron and

Crooks (2005). They have to answer to these individuals who closely monitor their progress. Any suspicious deviation from the norm might raise red flags, and the possibility of that happening may be enough to keep students on an honest path.

Baron and Crooks (2005) argued that the use of biometrics is the best method to prevent cheating. The student's handwriting can be sampled, and their voice and fingerprints can also be used as forms of identification. One example of a biometric program is Securexam Remote Proctor, which in addition to scanning fingerprints also provides a full camera view of the students while they are taking their exam (Parry, 2009). Some researchers (Baron & Crooks, 2005; Bedford et al., 2011; Parry, 2009) argued that the U.S. federal government's regulation online students' identity verification (Higher Education Opportunity Act, 2008) is something that would be best handled with the use of biometrics. However, Baron and Crooks mentioned that biometric verification is not only costly, but it also raises the issue of privacy, as it is not devoid of security issues and does not guarantee that students' records will be kept confidential. In a pilot study, 20 faculty used the Software Secure Remote Proctor, biometric software that verifies an individual's identity, with their college students to determine its effectiveness (Bedford et al., 2011). Students were encouraged to engage in activities which are usually forbidden during testing, such as using books and talking. All these activities were captured by the Remote Proctor and were reported by the monitoring company. Students were less likely to deny their guilt because their actions were recorded. As a result, the Remote Proctor was deemed to be a highly effective monitoring system, which helps increase student integrity (Bedford et al., 2011).

Chapter Summary

Although concerns about dishonesty in online courses continue, most research has not provided scientific evidence that academic cheating warrants special focus on the online environment. Assessments by Baron and Crooks (2005); Grijalva et al. (2010); Hollinger and Lanza-Kaduce (2006); Shaw (2004); Spaulding (2009); and Watson and Sottile (2010) of overall cheating have indicated that cheating is more common in face-to-face courses. Faculty have several available measures they can implement in their courses to prevent it from happening in the first place. Gallant and Drinan's (2008) theory pointed to the importance of implementation of institutionalized policies on dishonesty, which must be carried out by faculty and administrators, while Bruner (1960) focused on engaging students in thought-provoking materials and lessons to stimulate their honest participation. Kholberg and Kohn (1981a), on the other hand, argued that placing more importance on the intrinsic motivation of learning rather than credentialing would make students less likely to cheat. Understanding the motivations for cheating may offer insights into combative measures (Brent & Atkisson, 2011). A variety of techniques were reviewed, such as proctoring examinations (Baron & Crooks, 2005; Harkins & Kubik, 2010; Prince et al., 2009), in-class writing assignments (Baron & Crooks, 2005), and honor codes (Patnaude, 2008). Researchers also suggested the use of security or biometric systems (Bedford et al., 2011; Jung & Yeom, 2009; Parry, 2009). This study explored the current state of instructor and administrative awareness and involvement in ways to prevent cheating.

Research Questions

The research questions for this study are:

1. To what degree do instructional college faculty perceive dishonesty as a problem in their online classes?
2. How do online faculty judge the seriousness of online cheating and how well do they think their college deals with it?
3. What strategies are used by college instructors to safeguard online course integrity?
4. To what extent do instructional college faculty follow the institution's code of conduct in response to academic dishonesty?
5. What types of support do instructional college faculty desire to help lower online cheating?
6. To what degree do instructional college faculty perceive the acceptance of the use of institutional measures to prevent online cheating?

Chapter 3: Methodology

The problem addressed by this study was the lack of documentation about the phenomenon of cheating in online instructional environments in terms of the extent, causes, effects, procedural preparedness, and future planning.

Participants

The target population for this study was all instructors who teach fully online courses at the researcher's community college site, as well as online instructors from two other community colleges in Florida. According to Creswell (2005), the target population should consist of individuals with a common characteristic that the researcher can identify. The common characteristic among the selected participants is that they all teach fully online courses. Since approximately 289 instructors at the researcher's institution teach about 570 fully online courses, all instructors were invited to participate in the study (E. Muirhead, Executive Assistant of Distance Learning, personal communication, September 30, 2013). Among 120 institutions nationwide, the Aspen Institute ranked this institution in the top 10% of community colleges nationwide. It is the largest institution of higher education in its county, and its top four areas of study for 2010–2011 were business administration, liberal arts, criminal justice, and nursing. The college offers Bachelor and Associate degrees in addition to certificates and applied technology diplomas. With a student population of 67,258 in the 2010–2011 academic year, the college employed 1,182 adjuncts and 420 full-time instructional faculty. There are three main campuses and six centers spread throughout the county (Broward College, n.d.-a).

The researcher also invited all online instructors from a community college in a neighboring county to participate in the study. This institution had 48,966 students

enrolled for the 2011–2012 school year. The college offers Bachelor and Associate degrees, as well as certificates, vocational degrees, and preparatory programs. There are four campuses in the county and one satellite location (Palm Beach State College, n.d.). The highest number of graduates were in the areas of nursing, paralegal, emergency medical services, and business administration (Palm Beach State College, 2013a). In the 2011–2012 academic year, the college offered 802 online courses (Palm Beach State College, 2013b). In the spring of 2013, the college had 159 fully online instructors teaching 344 sections (S. Beitler, E-Learning Director, personal communication, January 29, 2013).

The third institution included in this study served over 25,000 students during the 2011–2012 school year. This college has six campuses and several centers spread throughout the county (Santa Fe College, n.d.-a). Like the other institutions included in this study, this college offers Associate and Bachelor degrees in disciplines such as Health, Early Childhood, and Nursing (Santa Fe College, n.d.-a). They offer approximately 400 online classes during the spring and fall semester, taught by approximately 200 online instructional faculty (L. Ciardulli, Assistant Vice President of Academic Technologies, personal communication, July 24, 2013).

The demographic makeup of the participants spans a wide range of age, race, and gender categories. Demographic information gathered from the participants at the time of participation provided exact information, but specific focus was placed on the extent of experience and gender of the instructors. The procedure followed to gather the sample for this study was to contact the directors of the instructional technology department at the selected institutions to either obtain a list of email addresses of all online instructors or

make arrangements to disseminate the survey (Fowler, 2009). The instructors were contacted via email and an invitation to participate in the study was extended, as proposed by Sue and Ritter (2007). The instructors were sent a reminder email approximately 10 days after the initial invitation in an attempt to reach as many participants as possible (Fowler, 2009). Creswell (2005) estimated that 350 individuals would be a good sample size to partake in a research study, thereby making the combined populations of fully online instructors at all proposed institutions a suitable size. Sue and Ritter (2007) posited that the number of participants likely increases if all the members of the population are invited to participate. They suggested that the number of participants who will respond increases when they are preliminarily contacted through various methods, such as email, telephone, and regular mail. An agreement to participate makes nonresponses less likely to occur. According to Fowler (2009), the importance of sample size depends on the nature of the study. Fowler stated that while a study which has been repeated many times may require a large sample size, studies that have not been done as much can be statistically sound even with a smaller sample. Fowler suggested securing a sample, which is reflective of the population by ensuring each individual had an equal chance of being selected, that probability sampling be used, and that the design be such that the sample reflects the entire population. Fowler warned that the appropriate size of the sample should not just be based on statistical suggestions, but rather on the individual study and its goal. He also cautioned that studies should not be approached solely based on predicated margins of error.

The research method used for this study was mixed-methods. Participants were asked to answer survey questions for the quantitative portion of the study. The qualitative

portion of the study involved a focus group meeting, which provided the researcher with information that was used to validate the data gathered from the surveys. According to Tashakkiro and Teddlie (2003), Creswell (2008), and Pinto (2010), mixed-methods research is a newer approach to research design, which enables the researcher to mix quantitative with qualitative data collection procedures to obtain deeper understanding of their topic. Pinto mentioned that mixed-methods offer deeper understanding of the data that are gathered and allows for triangulation between the quantitative and qualitative data. Triangulation is believed to improve the validity of the research. Though it does not come without critique, Pinto (2010) believes that triangulation provides a more holistic view than single method studies.

In the quantitative portion of this research study, the participants were asked to answer a questionnaire consisting of 18 multiple-choice questions consisting of multiple items. This questionnaire was securely delivered online via Google forms. Sue and Ritter (2007) warned about invited participants not responding to the request to partake in a study to which they were invited. There were people who wished not to be part of this research study, and others who initially agreed to complete the survey but changed their mind. The participants completed an online survey, which Sue and Ritter explained to be a relatively quick and low cost option to gather data. In an effort to increase the number of survey responses, Fowler's (2009) recommendations were followed. The potential participants were contacted via email to inform them of the study and the importance of their participation. The survey was easy to navigate and was kept short and concise. Participants were incentivized by an opportunity to win a prize. Fowler explained that there may be those who do not answer every question in the survey and more

importantly, there may be people who do not submit any response at all. To reduce this sample bias due to nonresponse, Fowler (2009) suggested sending an advance letter to inform the participants of the study. In the advance letter, the participants will learn of the purpose of the survey and the purpose of the study. For the qualitative portion of the research, participants were invited to a focus group meeting to further discuss the survey questions

Instrument

The instrument used for this study was a modified version of the Academic Integrity Survey (AIS, Appendix A), developed by McCabe in 1999 (McCabe, Trevino, & Butterfield, 1999). Revisions of the survey were made in 2003 (Eckles, 2010). Dr. McCabe, who is currently a professor of Management and Global Business at Rutgers University in New Jersey, was contacted via email by the researcher to request permission to use his survey. He gave written permission to the researcher to modify and use the instrument (D. McCabe, Creator of Academic Integrity Survey, personal communication, June 7, 2013). The revised survey, consisting of 96 items, was modified to fit the purpose of the study (Appendix B). According to Creswell (2005), it is important to establish the validity and reliability of an instrument. For the study to be considered valid, Creswell stated that the researcher should obtain useful information from the participants, which can be used to make generalizations about the population. Reliability, on the other hand, refers to the expectation of the instrument yielding similar and consistent results with each use (Creswell, 2005). Boehm et al. (2009), Eckles (2010), and Hart and Morgan (2010) all utilized the AIS, and each established reliability and validity of the instrument prior to conducting their studies. Eckles stated that validity

of the instrument was based on the survey's being designed by one of the leaders in the field of academic integrity, Donald McCabe. Survey questions were answered on a 5-point Likert scale ranging from never to very often, or responses were answered on a checklist where specific behaviors were marked on a 5-point Likert scale which ranged from not cheating to very serious cheating (Boehm et al., 2009; Eckles, 2010; Hart & Morgan, 2010). The researcher's study gathered information from all faculty who teach online, to assess their attitudes and opinions in regard to dishonest behavior among their students. The AIS is broken down into three main themes, namely, academic environment, specific behaviors and demographics (McCabe et al., 1999). The purpose of the survey was to measure the extent to which instructional faculty are aware of various methods of cheating in their classrooms, to gather information about measures that are already used by instructional faculty to enforce the institution's code of conduct (Eckles, 2010; McCabe et al., 1999). In his research, Eckles (2010) evaluated and reviewed the instrument for validity and reliability and found it to be solid in both areas. Eckles performed the Cronbach's Alpha statistical analysis, which revealed a score of .911. This score indicates that the rate for internal reliability is high.

The purpose of the AIS was to find out the perceptions of faculty about students who cheat, what factors contribute to cheating, the effects of honor codes used in academia and the likelihood of that lowering the instances of cheating, and the effects of academic integrity policies at institutions (McCabe et al., 1999). The writer employed a modified version of the AIS, which places more emphasis on faculty's perception regarding students' likelihood of cheating and measures taken by the institutions to prevent cheating before it takes place in the context of online courses (Appendix B).

While there is no specific reason to let the researcher believe that cheating in the online environment is alarming at any of the three institutions, the (SACS, 2010) has stated that accreditation of higher institutions will partially be determined on their ability to show that they have taken measures to reduce online academic cheating. The instrument contains questions about the participant's attitude about students who cheat. Nitko and Brookhart (2011) explained that when attitudes are measured, one looks at "characteristics of persons that describe their positive and negative feelings toward particular objects, situations, institutions, persons, or ideas" (p. 433). In this case, the instrument elicits faculty's attitudes regarding the types of dishonest behavior their students commonly exhibit, what measures they took after cheating was detected and how academic policies affect cheating. Nitko and Brookhart explained that part of a structured personality inventory known as the "self-report characteristic" (p. 434) requires the respondent to look at their own feelings of something specific.

Evaluation of Technical Adequacy: Validity and Reliability

Content validity. In order to determine whether an instrument is considered adequate for use, it is important to determine the validity of the instrument. According to Nitko and Brookhart (2011), validity is "the soundness of your interpretations and uses of students' assessment results" (p. 35). Nitko and Brookhart pointed out that there are four principles that are used to determine whether a survey is valid. There must be evidence that the survey is appropriate, the way the instrument is used must also be appropriate, the values implied in the results of the survey must be appropriate, and finally, the consequences of the interpretations must be consistent with the values (Nitko & Brookhart, 2011). Another factor to consider when determining the validity of a survey is

content validity. This measures whether the survey questions and the scores assigned to the questions represent all of the possible questions that can be asked given the circumstance (Creswell, 2005). In establishing content validity, the reviewer of the survey has to take a look at the way it was planned and which procedures were followed, stated Creswell. Eckles (2010) established content validity based on the fact that the instrument was created by McCabe, whom he described as "a leading expert in the field of academic integrity issues in higher education" (p. 58). The modifications made to the AIS were merely to customize the instrument to the participating research sites.

Criterion-related validity. In addition to content validity, Eckles (2010) established criterion-related validity. Creswell (2005) explained that "it determines whether the scores from an instrument are a good predictor of some outcome (or criterion) they are expected to predict" (p. 165). Eckles' findings were based on his research which revealed that the survey was examined by experts in the field.

Internal and external validity. External validity was established when Eckles (2010) carefully identified and selected his population from which he ultimately drew his participants. The population consisted of faculty and administrators employed at a western U.S. public institution of higher education. Additionally, he did not generalize his results to groups outside of his population, as that would have created a threat to external validity.

Validity analysis and validity coefficients. It is important to note that no validity data were actually provided in any of the aforementioned categories. When assessments are given to participants, the scoring of those assessments will determine whether the researcher of this study was able to analyze validity or not. Eckles (2010) made an

inference about the validity of the instrument based on the designer's credibility in the field.

Reliability. Another evaluation that determines adequacy is reliability. Creswell (2005) claimed that it should be the goal of good research to have reliable measures or observations. According to Nitko and Brookhart (2011), reliability is the degree to which students' results remain consistent over replications of an assessment procedure. To assess a test for reliability, Eckles used Cronbach's Alpha statistical analysis. The score was .911, which is "of a high internal consistency reliability rating" (Eckles, 2010, p. 58). Boehm et al. (2009) conducted a pilot study as part of their research, in an effort to reestablish reliability and validity. The researchers asked experts to rate the survey questions on how clear and consistent they were. The required score of 3.0 was exceeded for clarity (3.6) and consistency (3.3). Additionally, the consistency reliability coefficient of .768 on a Spearman-Brown formula added to the conclusion that the instrument was reliable.

To measure for internal consistency, a Cronbach's Alpha statistical analysis was performed on the modified survey for this study. Multon and Coleman (2010) explained that the Cronbach's Alpha analysis is appropriate to run on scale items that highly correlate with one another. The only question with such a correlation is question 1 about the academic environment. The 5-item scale yielded a value of $\alpha = .87$, indicating high reliability. Scale means were 3.39 for severity of penalties for cheating (SD = 1.14), 2.78 for average student's understanding of the college's policies concerning cheating (SD = 1.01), 2.68 for student support of the policies (SD = 0.96), 3.80 for faculty support of the policies (SD = 1.04), and 3.09 for effectiveness of the policies (SD = 1.02).

Recommendations for Future Use of the Instrument

Eckles (2010) made several recommendations in regards to future research and the utilization of the Academic Integrity survey. He suggested that the survey should be adapted to include a "not applicable" option for some of the questions, as respondents did not all have experience in, or exposure to, the questions related to policies at the institution. The survey only contained a quantitative approach, and Eckles suggested that qualitative follow-up questions upon receipt of the quantitative portion would expand the study further. This would make the study a mixed-methods approach.

Measured Domains

For his research, Eckles (2010) measured a variety of domains: the academic environment; faculty responsibility in conveying institutional policies to their students; primary sources of policies regarding academic integrity; perception of the frequency of cheating; faculty awareness and responsiveness to cheating; and safeguards implemented to reduce or prevent cheating. Each of the aforementioned categories contained a set of questions that needed to be answered by the respondents.

Item Selection

To determine how items were selected for the test, the writer evaluated the original writings by McCabe (Mc Cabe et al., 1999). McCabe explained which factors were going to drive the research. He listed honor codes (institutional factors) and moral norms (personal factors). There was a comparison between schools that had honor codes and schools that did not. The idea behind that was to find out if having an honor code deters students from being dishonest in the first place (McCabe et al., 1999).

Procedures

The instrument used for this mixed-methods study was a modified version of the AIS (Appendix B). Creswell (2005) stated that surveys can yield useful information which in turn aid in the evaluation of a program. In order to gather data, the researcher employed the modified version of the AIS (DuPree & Sattler, 2010) and made it available online through utilization of an electronic questionnaire. At the start of the study, the researcher submitted required paperwork to the Institutional Review Board (IRB) at the institution where she is a student, as well as the three institutions that agreed to participate in the research. The directors of the respective distance education offices were contacted and each explained that their procedure would be to disseminate the survey once IRB approval was obtained. The directors all agreed to be the liaisons who would distribute the survey via email, as it was against the policy of the institutions to provide the researcher with a list of their online faculty. Upon receipt of the IRB approval, an email was sent to the director of distance education to request that all online faculty be contacted. The IRB approval from their respective institutions was attached to the email, along with an invitation letter from the researcher, which explained the purpose of the study and requested participation of the recipient. The modified AIS was sent to all online instructional faculty. An informational letter of protocol included basic information about the survey, as well as a request for the participants to indicate their interest in participating in a focus group by responding to the email (Sue & Ritter, 2007). Signed consent was not required for the online survey as the surveys were anonymous and are considered nonintrusive. Prospective participants were made aware that the survey would take 15 to 20 minutes to complete, and the letter provided background

information of the researcher, the purpose of the study, as well as the risks and benefits of participating in the study. The invitation contained a URL, which took the participant to the 18-question online survey, created in Google forms.

Addressing nonresponse and bias. There are different reasons why prospective respondents decide not to participate in a study, or fail to answer all survey questions. Participants may refuse to respond because they have no interest in participating (Merkle, 2013). The request for participation may not have reached the prospective participant, wrote Merkle, or they did not understand the nature of the survey because of language barriers, physical or mental disabilities. Sue and Ritter (2007) further explained that fear of the lack of anonymity may affect participants' participation. Even when participants are promised anonymity, Sue and Ritter argued that some fear that their responses might be traced back to them, raising their skepticism to participate or answer certain questions.

The problem of nonresponse has been addressed by researchers who have also offered recommendations on how to reduce it (Merkle, 2013). Merkle pointed out that nonresponse does not necessarily indicate that there is bias. As Groves et al. (2004) stated, it almost never happens that all participants who are invited actually participate in the study. Nonresponse is not automatically an issue when respondents fail to participate as "response rates alone are not quality indicators" (Groves et al., 2004, p. 59). Instead, Groves et al. explained that nonresponse bias may be reduced when the response rate is high, but that there are ways to help reduce the bias and increase the response rate. Merkle (2013) argued that reducing the correlation between the likelihood of response and the variable of the survey itself would help to reduce bias. According to Groves et al., the quality of the survey statistics may be harmed by nonresponse, but the researcher

would have no way of knowing ahead of time whether nonresponse will have a negative effect on their study. Nonresponse bias, stated Groves et al., arises "when the causes of the nonresponse are linked to the survey statistics measured" (2004, p. 178). Based on writings by Groves et al., nonresponse is to be expected, and key survey statistics ought to be carefully looked at to ensure that nonresponse was not a result of these key statistics.

Because the survey for this study pertains to online education, one way of reducing bias was to deliver the survey online, where faculty have an assumed level of comfort because of their online course delivery status. Prospective participants were asked to complete the survey within 14 days of receipt of the email.

Fowler (2009) and Merkle (2013) suggested that the rate response for a survey likely increases if participants are made aware of the importance of the study. In following Fowler and Merkle's advice, 10 days after the initial email was sent, participants were sent a reminder email, which indicated the importance of the survey to the college and the benefit of the results that would contain ways to improve the job of all online instructional faculty. The second reminder included an appeal to instructional faculty who had already completed the survey to encourage their colleagues to do the same. Fowler (2009) mentioned that increasing the amount of contact increases the likelihood of the participants to respond. Based on Fowler's advice, an email was sent out to the prospective participants one final time after an additional 10 days.

The use of incentives has been suggested (Fowler, 2009; Sue & Ritter, 2007), as a way to motivate the participants to complete the survey Accordingly, the researcher of this study offered participants a chance to enter sweepstakes where four people had a

chance to win a $25 gift card from Amazon.com. The participants received their prize after final completion of the survey when the random drawing was held. They had an opportunity to complete an online form on Google docs with their name and email address through which they were notified. Participants' names were in no way linked to their survey answers, as they submitted that information through a different program. After the period to submit the survey had expired, all the names of the sweepstakes participants were entered in www.randompicker.com and four winners were selected.

Fourteen days after the initial invitation was sent to the directors, the first reminder letter was sent via email. The directors were asked to craft their own reminder letter, or to use the reminder letter that was written by the researcher. Each director elected to personalize the reminder letter that was provided by the researcher. They sent it along with the required IRB forms. The final request to send a reminder was sent to the directors after 10 more days. They each customized the letter that was provided by the researcher and emailed it to the prospective participants. The respondents completed the survey completely voluntarily and were provided full disclosure of potential harm prior to entering the survey.

Focus group to provide triangulation. In addition to the use of a survey, an eight-member focus group consisting of instructional faculty met to discuss the most effective measures to prevent cheating, and perceptions and motivation of cheating at the institutions. The participants of this focus group were given brief information regarding the nature of the study, as suggested by Sue and Ritter (2007). Focus group participants were made aware of the importance of their participation in the study and the potentially negative effect nonresponse may have (Fowler, 2009). Additionally, they were assured

that their participation was anonymous and that transcripts of their words would be coded or protected by password secrecy and the recordings would be kept in a secured place (Sue & Ritter, 2007). As supported by Fowler (2009), the respondents need to feel comfortable with their participation in the study, thus ensuring their confidentiality is critical.

In the initial information letter sent to all online teaching faculty, they were asked to send an email to the researcher if they wished to participate in the focus group. An electronic record of the email responses was kept of those instructors who indicated their interest in participating in a focus group, which provided the qualitative portion of information that was collected. A letter was sent via email to those who indicated their interest in partaking in the focus group. Morgan (2008) stipulated that the size of the focus group is to be determined by the researcher, based on the needs pertaining to the study. Morgan (2006) defined a focus group as having six to eight members selected from the group that is interviewed by a moderator. In accordance with this recommendation, the eight-participant focus group for this study consisted of instructional faculty. Eight of those who indicated their interest in the focus group were selected at random. Three extra names were drawn as alternate participants. An email was sent to the eight participants to invite them to a face-to-face meeting scheduled for one month after the initial mail date of the survey. Because some of the eight participants declined the invitation, instructors from the alternate group were solicited to fill their spot. After the selection, the members were apprised of the contents of the letter of permission they were asked to sign. A copy of the signed consent form was given to the participants and the original signed consent forms were placed in a locked cabinet. These

consent forms included information on how their comments/responses in the focus group would be recorded. The focus group was facilitated by the researcher. The results of the open-ended questions from the focus group and the responses from the modified AIS were triangulated. Creswell (2005) mentioned that the process of triangulation can be used to examine the accuracy and credibility of the responses. Tashakkori and Teddlie (2003) concurred with Creswell's explanation regarding triangulation and added that the qualitative and quantitative information that is gathered complement one another as they each reflect their own perspective. The interaction of the focus group provided additional insights into the phenomenon of online cheating which may not have been obviously revealed with the survey. Short (2006) acknowledged the controversy regarding the advantages of focus groups, but illustrated with an example about an eight-member group, how this small group can address issues that are not delved into in the survey.

Data Collection and Analysis

Research Question 1. To what degree do instructional college faculty perceive cheating as a problem in their online classes?

Instructional faculty were asked questions on the modified AIS related to their perception of dishonest behavior in their classrooms. The questions relied on self-reporting to obtain an indication of whether and to what degree the faculty were aware that students cheat in their classes. Results indicated whether demographic information could have influenced the answers (Appendix B, Questions 4, 5, 9, 10, 12, 13).

Research Question 2. How do online faculty judge the seriousness of online cheating and how well do they think their college deals with it?

There were questions on the modified AIS about the seriousness of cheating,

faculty's perception of different types of academic dishonesty, and the existence of institutional integrity policies. (Appendix B, Questions 9 and 13).

Research Question 3. What strategies are used by college instructors to safeguard online course integrity?

To find out which strategies instructors use to minimize the instances of cheating in their online courses, they were asked two questions (Appendix B, Questions 6, 14) on the modified AIS which determined whether any measures were taken at all. If measures were in place, the results of the surveys provided an indication of what was put in place. Faculty were asked to indicate on the survey whether assessments in their courses are taken in a proctored environment, whether online resources, such as Turnitin.com are used to detect plagiarism for written assignments, or if no action is taken to ensure course integrity.

Research Question 4. To what extent do instructional college faculty follow the institution's code of conduct in response to academic cheating?

Faculty were asked to answer a series of questions (Appendix B, Questions 3, 6, 7, 8) on the modified AIS related to the institution's code of conduct. They were also asked what steps are taken when there is a breach of the code of conduct. Faculty responses were analyzed to determine the extent to which instructional faculty enforce the institution's policies.

Research Question 5. What types of support do instructional faculty desire to help lower online cheating?

Faculty had an opportunity to answer a question (Appendix B, Question 15) on the modified AIS to indicate what they need in order to increase their awareness about

online cheating. Additionally, they were able to express what support the institution can provide to help them be successful in their efforts to reduce or prevent cheating. The qualitative responses were coded into groups to determine the distribution of scores.

Research Question 6. To what degree do instructional faculty perceive the acceptance of the use of institutional measures to prevent online cheating?

Questions (Appendix B, Questions 1, 2, 7, 8, 11, 13) related to this research question gave faculty an opportunity to express whether they feel that institutional measures to prevent cheating are successful.

Upon receipt of completed surveys, the results were entered on PASW Statistics 18, formerly known as SPSS, a statistical program, which was used to evaluate the descriptive statistics to analyze the results (Boehm et al., 2009; Creswell, 2005; Eckles, 2010; Hart & Morgan, 2010). Creswell (2005) explained that the grouped frequency distribution will help summarize the data more easily. To explain the results, data collected about knowledge of the institution's code of conduct were converted into percentages and a descriptive analysis, namely median and mode. According to Creswell (2005), descriptive statistics are helpful in summarizing the trends and tendencies of data that are gathered. The data analysis provided information about the variance for each set of values, which were all relevant in order to make sense of the data. Creswell (2005) confirmed that the SPSS program provides a good basis for scoring data collected by the researcher. Information that was obtained was reported in written form and tables.

A Pearson correlation was performed to determine possible patterns between variables (Creswell, 2005). An analysis helped determine whether there is a correlation between "The average student's understanding of the college's policies concerning

cheating" and "Student support of these policies"; "Student support of these policies" and "Faculty support of these policies"; "Faculty support of these policies"; and "The effectiveness of these policies." A Pearson correlation was also performed on the number of times a student was caught cheating (Question 5) and the steps taken as a result (Question 6) and to help determine whether frequency of cheating (Question 5) is correlated with the severity of punishment (Question 6). In Question 13, "Cheating is a serious problem at this institution" was tested for correlation with "Faculty members are vigilant in discovering and reporting suspected cases of academic dishonesty."

Faculty demographics including gender, years of experience, and teaching discipline (Questions 16, 17, and 18) were tested for correlation with the instructors' reaction (Question 6). More specifically, Question 16, "How many years have you been teaching at the college level?" was tested for correlation with the faculty's reaction to evidence of cheating (Question 6). The researcher tested whether a correlation exists between the faculty's gender (Question 17) and the type of reaction to evidence of cheating (Question 6). The faculty's teaching discipline (Question 18) was tested against their reaction to evidence of cheating (Question 6) to see if a statistically significant correlation exists.

The focus group answered the same questions on the modified AIS, except the questions were open-ended, rather than closed. The open-ended questions provided the researcher with qualitative responses, which were audio-recorded by the researcher. Subsequently, they were written down, organized into common themes, coded, and analyzed. According to Creswell (2005), the use of a focus group can result in the gathering of extensive data. Members of the focus group for this study had an opportunity

to go into more depth about the extent of cheating by students and ways to prevent it. The purpose of the focus group was to allow the group members an opportunity to engage in a conversation regarding academic cheating in the online environment. Their perspectives were particularly useful as they provided deeper insights into the research questions, along with the possibility of elucidating any hidden variables (Davern, 2008). The group members all had experience with the online platform, and their efforts in increasing student success while maintaining credibility of the institutions added to the value of the group. Its homogeneity got the members to share experiences that were similar or different and served to further support the quantitative portion of the study (Davern, 2008).

Summary of Procedural Steps

Survey group steps:

1. The Director of Instructional Technology of each participating institution was contacted. Since the information could not be obtained due to institutional policy, a liaison sent correspondence to all online faculty, which contained an informational form for participation in the research study.
2. A Google forms URL for survey access was included in the informational letter. Participants needed to click on the URL for secure access.
3. The participants spent 15–20 minutes to complete the survey.
4. Fourteen days after initial contact, a reminder was sent to the population to complete the survey.
5. Ten days after that, a final reminder email was sent.

Focus group steps:

1. The informational form for participation instructed participants to contact the researcher via email to express their interest. Interested participants did not have to complete the survey to be part of the focus group.

2. An electronic list was kept of participants who expressed their interest.

3. Since more than eight participants expressed interest, eight were randomly selected to become focus group members 5 days after the survey portion of the study closed. After 14 days, focus group members were invited to a meeting to discuss the Modified AIS questions. The group met in a conference room at the researcher's worksite, where group members who were unable to meet in person had an opportunity to be present via conference call. To ensure the privacy of the participants, the meeting was held in a closed room, which limited the voices from being heard by others who may have been in the building.

4. The focus group members were advised of the general purpose of the group: to have a discussion about the Modified AIS questions in an effort to triangulate their responses with the ones obtained through the survey. The group members were asked not to discuss the focus group conversation outside. Additionally, they were asked not to identify students, but to speak in generalities.

5. The one-hour meeting was recorded on a portable audio recorder for further analysis. No names of participants were recorded. The participants were coded as P1 through P8 and their answers were coded as follows: Academic Environment questions were coded AE1a, AE1b, AE1c, etc. Demographics questions were coded: D16, D17, D18.

6. After the meeting, the researcher listened to the data wearing headphones,

sorted and recorded them electronically and analyzed the results by comparing the answers to the electronically submitted surveys for purposes of triangulation. The researcher listened to and transcribed the audio recordings in her private home office. The recordings and transcripts were secured in a locked cabinet at the researcher's home office.

7. All information collected for the focus portion of the study will be destroyed after 3 years following the completion of the study by deleting the electronic files and the audio recording, and shredding any hard copies that exist.

Chapter 4: Results

Purpose of the Study

The purpose of this mixed-methods study was to provide an inquiry into the phenomenon of cheating in online courses. The previous chapter provided details about the steps taken to implement the study. This chapter will discuss the results of the data analysis.

Correcting for a Technical Problem

Days after the invitations were sent to the participants, the researcher received a few emails which stated that there was a technical glitch with one of the questions (Question 9). The question instructed participants to select one answer from the left column (Part I) and another answer from the right column (Part II). The participants were only able to select one answer from either column, resulting in 42 answer submissions for Part I and zero submissions for Part II. As a result, the researcher had to change the question into two parts: in Part I, the participants selected one answer and in Part II, they selected the other answer. By the time the correction was made, the researcher had to evaluate the likely effect of the 42 submissions in which the respondents were limited to selecting from either the left column or the right but not both. The chi squares (for Part I) and correlations (for Part II) were completed to determine whether Question 9 responses differed between the first 42 participants and the rest (see Appendix C). No significant differences were found ($\chi 2$ ranged from .742 to 5.622, p ranged from .132 to .863, df = 3). These results suggest that modifying the survey did not affect the way participants responded to Question 9, Part I (see Appendix C).

The results of the survey and the focus group meetings are included in the

remainder of the chapter.

Demographics

A total of 588 online faculty from the three research institutions were invited to complete the online survey. Of those who were invited, 22% completed the survey: 51 males (39.2%) and 79 (60.8%) females indicated their gender, and one participant did not complete the gender question ($N = 131$). Table 1 shows the breakdown by academic discipline.

Table 1

Area of Primary Teaching Responsibility

Area	Data for this study		Institutional data, winter 2014	
	Frequency	%	Frequency	%
Arts	1	.8	14	3.3
Business	17	13.2	74	17.2
Communication/journalism	9	7.0	41	9.5
Engineering	2	1.6	0	0.0
Humanities	22	17.1	45	10.5
Math or Science	31	24.0	101	23.5
Nursing/health professions	23	17.8	69	16.0
Social/behavioral sciences	24	18.3	86	20.0
Missing*	2			
Total	129		430	

* Missing indicates how many participants did not submit a response.

Two faculty did not respond to the question, perhaps because their discipline was not listed or they chose not to answer for other reasons. It is worth noting that the same participants failed to complete any of the demographic questions.

Table 2 displays the number of years participants have taught at the college level. The majority of participants taught at the college level at least 8 years.

Table 2

Number of Years Teaching at the College Level

Years	Frequency	%
0–2	4	3.1
3–7	39	30.2
8–12	35	27.1
13 or more	51	39.5
Missing*	2	
Total	129	

* Missing indicates how many participants did not submit a response.

The focus group consisted of six males and two females (n = 8). The members came from different academic disciplines, namely communication (n = 1); math or science (n = 5); business (n = 1); social and behavioral science (n = 1). All of the focus group members had more than 13 years of college level teaching experience.

Perception of Dishonesty as a Problem in Online Classes

Research Question 1. The first research question was: To what degree do instructional college faculty perceive dishonesty as a problem in their online classes? Combined results indicated that the majority of instructors (57.3%) thought that plagiarism at their institution occurs often or very often (Table 3). When faculty were asked how frequently they thought students inappropriately shared work in group assignments, the majority (51.9% combined) indicated that it occurred often to very often. The frequency of cheating, based on the total of those who responded, is presented

in Table 3. Means and standard deviations for Question 4a–4c are presented in Table 4.

Table 3

Aggregated Survey Responses: Frequency of Cheating, Questions 4a–4c

Response	4a*		4b*		4c*	
	n	%	*n*	%	*n*	%
Never	1	.8	2	1.6	5	3.9
Very seldom	4	3.1	6	4.7	19	14.7
Seldom/sometimes	41	31.8	40	31.0	53	41.1
Often	51	39.5	40	31.0	27	20.9
Very often	23	17.8	27	20.9	15	11.6
No opinion	9	7.0	14	10.9	10	7.8
Missing**	2		2		2	
Total	129		129		129	

* 4a—How frequently do you think plagiarism on writing assignments occurs in the online courses at your institution?; 4b—How frequently do you think students inappropriately share work in group assignments occurs in the online courses at your institution?; 4c—How frequently do you think cheating during tests or examinations occurs in the online courses at your institution.
** Missing indicates how many participants did not respond.

Table 4

Means and Standard Deviations, Questions 4a–4c

Question	Means	Standard deviation
4a	3.76	.830
4b	3.73	.940
4c	3.24	1.006

Faculty were asked which dishonest behaviors they witnessed their students

engaging in during the past 3 years. When asked how often, if ever, they saw a student cheat during an online test or examination, the type of dishonest behavior that was selected by participants most often (68.1% in the combined Once and More than once categories) is paraphrasing or copying a few sentences from a book, magazine or journal (not electronic or Web-based) without footnoting them in a paper s/he submitted (see Table 5). Behaviors that were never observed by the majority of respondents were using digital technology (such as text messaging) to get unpermitted help from someone during an online test or assignment (65.8%), helping someone else cheat on an online test (65.2%), copying from another student during an online test with his or her knowledge (61.4%) and getting questions or answers on an online test from someone who has already taken a test (58.5%). More than 25% of participants teach in math, science and engineering—areas that generally do not require research papers. Therefore, there were several who selected the "Not Relevant" option. Over 41% of participants indicated that they caught students using a "paper mill" (a paper written and previously submitted by another student) and claiming it as his/her own work once or more than once. The results are in Table 5. The mean values indicate that the respondents deemed every question to be between moderate and serious cheating (see Table 6).

A combined majority of faculty (89.7%) indicated that their students used the Internet or other electronic means only (57.0%) or the Internet primarily (32.7%) to access paraphrased or copied material from a written electronic source (see Table 7).

Respondents were asked if they ever offered an online test or exam at their institution and 83.7% (n = 108) answered affirmatively. Those who answered yes were then asked if they ever observed collaboration, use of books on a closed book exam,

students receiving unauthorized help or looking up information on the Internet when not permitted. For this question, respondents had to check all that applied. The type of cheating most frequently observed by faculty was students' looking up information on the Internet when not permitted (30.5%). The types of cheating observed are shown in Table 6.

Table 5

Aggregated Survey Responses: Frequency of Specific Cheating Behaviors, Questions 9a1–9d1

Response	9a1*		9b1*		9c1*		9d1*	
	n	%	*n*	%	*n*	%	*n*	%
Never	48	39.7	54	44.6	69	58.5	75	65.2
Once	9	7.4	11	9.1	2	1.7	2	1.7
More than once	28	23.1	34	28.1	31	26.3	25	21.7
Not relevant	36	29.8	22	18.2	16	13.6	13	11.3
Missing**	10		10		13		16	
Total	121		121		118		115	

* 9a1—Fabricating or falsifying a bibliography in an online assignment; 9b1—Working on an online assignment with others when the instructor asked for individual work; 9c1—Getting questions or answers on an online test from someone who has already taken a test; 9d1—Helping someone else cheat on an online test.
** Missing indicates how many participants did not respond.

Table 6

Means and Standard Deviations, Questions 9a1–9d1

Question	Means	Standard deviation
9a1	3.42	0.67
9b1	3.32	0.69
9c1	3.80	0.53
9d1	3.77	0.58

While some participants (49.7%) indicated that they agreed or strongly agreed that cheating is a serious problem at their institution, more than half (50.5%) indicated that they strongly disagreed, disagreed or were unsure. The mean score of 3.54 supports this conclusion (see Table 7).

Table 7

Aggregated Survey Responses: Frequency of Specific Cheating Behaviors, Questions 9e1–9h1

Response	9e1*		9f1*		9g1*		9h1*	
	n	%	*n*	%	*n*	%	*n*	%
Never	70	61.4	75	65.8	17	15.0	48	41.4
Once	8	7.0	9	7.9	12	10.6	19	16.4
More than once	18	15.8	16	14.0	65	57.5	29	25.0
Not relevant	18	15.8	14	12.3	19	16.8	20	17.2
Missing**	17		17		18		15	
Total	114		114		113		116	

*9e1—Copying from another student during an online test with his or her knowledge; 9f1—Using digital technology (such as text messaging) to get unpermitted help from someone during an online test or assignment; 9g1—Paraphrasing or copying a few sentences from a book, magazine or journal (not electronic or Web-based) without footnoting them in a paper s/he submitted in an online class; 9h1—Turning in a paper in an online class from a "paper mill" (a paper written and previously submitted by another student) and claiming it as his/her own work.
**Missing indicates how many participants did not respond.

Table 8

Means and Standard Deviations, Questions 9e1–9h1

Question	Means	Standard deviation
9e1	3.83	0.53
9f1	3.79	0.59
9g1	3.17	0.77
9h1	3.83	0.55

Table 9

Aggregated Survey Responses: Frequency of Specific Cheating Behaviors, Questions 9i1–9m1

Response	9i1*		9j1*		9k1*		9l1*		9m1	
	n	%	*n*	%	*n*	%	*n*	%	*n*	%
Never	63	53.8	49	42.6	45	40.9	53	47.7	60	53.1
Once	17	14.5	20	17.4	17	15.5	16	14.4	10	8.8
More than once	10	8.5	28	24.3	38	34.5	31	27.9	25	22.1
Not relevant	27	23.1	18	15.6	10	9.1	11	9.9	18	15.9
Missing**	14	12.0	16	13.9	21	19.1	20	18.0	18	15.9
Total	117		115		110		111		113	

*9i1— How serious is using an electronic/digital device as an unauthorized aid during an exam; 9j1— How serious is turning in a paper copied, at least in part, from another student's paper, whether or not the student is currently taking the same online course; 9k1— How serious is using a false or forged excuse to obtain an extension on a due date or delay taking an online exam; 9l1— How serious is turning in work done by someone else in an online class; 9m1— How serious is cheating on a test in an online class in any other way.
**Missing indicates how many participants did not respond.

Table 10

Means and Standard Deviations, Questions 9i1–9m1

Question	Means	Standard deviation
9i1	3.71	0.62
9j1	3.81	0.51
9k1	3.34	0.82
9l1	3.84	0.52
9m1	3.77	0.58

Table 11

Source of Material Used by Student to Paraphrase or Copy Material

Method	Frequency	%
Internet or other electronic means only	61	57.0
Primarily Internet or other electronic means	35	32.7
Primarily hard (paper) copies of sources	1	.9
Have observed/suspected both methods equally	10	9.3
Missing*	24	
Total	107	

*Missing indicates how many participate did not respond.

Table 12

Aggregated Survey Responses: Types of Cheating Observed, Questions 12a–12d

Response	12a*		12b*		12c*		12d*	
	n	%	*n*	%	*n*	%	*n*	%
Yes	25	23.1	23	21.2	13	12.0	33	30.5
Total	108		108		108		108	

*12a—Collaborated with others during an online test or exam when not permitted?; 12b—Used notes or books on a closed book online test or exam?; 12c—Received unauthorized help from someone on an online test or exam?; 12d—Looked up information on the Internet when not permitted?

Table 13

Cheating is a Serious Problem at Your Institution

Response	Frequency	%
Strongly disagree	1	.8
Disagree	10	7.8
Not sure	54	41.9
Agree	46	35.7
Strongly agree	18	14.0
Missing*	2	
Total	129	

*Missing indicates how many participants did not respond.

Focus group members unanimously agreed that plagiarism on writing assignments happens often at their institution.

Participant 6 stated:

> A lot more plagiarism in discussion postings because Turnitin does not work with the discussion feature. Cheating for proctored–never. Nonproctored I think it happens, but there is no way you can prove it,

Participant 2 stated:

> I have had students hack each other's accounts with the tests. And it's quite easy. Here at XX college, you know everyone's user name from the mail system and the default password is your birthday and everyone has their birthday on Facebook. I always tell my students change your password and they don't. Once you're in the test, it does not take much time–it's very, very quick.

Participant 4 stated:

> Cheating can also be something like looking into Google and translating the answer to another language and translating it back.

Focus group members were asked how often, if ever, they have seen a student

cheat during an online test or examination at their institution. Three members indicated that they have seen cheating once to a few times. Some of their comments were as follows:

Participant 2 stated:

> A few times. On more than one occasion I have had students hack each other's account. Another circumstance when the students took the test simultaneously.

Participant 3 stated:

> Great many times, as I work in learning resources. The problem I've had with mathematics is that students would write down the problem and come to us for help on solving the problem for them and then they go in and put in the answers.

Participant 7 stated:
Many times. It's obvious when you've been doing it for 16 some-odd years.

Next, focus group members were asked how often, if ever, they have observed or become aware of a student in their class engaging in different cheating behaviors during the last 3 years. Two indicated that they observed fabricating or falsifying a bibliography in an online assignment more than once, one indicated that he witnessed students working on an online assignment with others although the instructor had asked for individual work.

Participant 3 noted regarding students collaborating with others during an online test or exam when not permitted:

> Witnessed it not in my own course, but other staff. I did not do anything when I witnessed it, because I think it should be up to the faculty to design the course so this does not happen.

Participant 6 stated:

> I've suspected, but was not able to prove it.

One also indicated that he observed once that students got questions or answers

on an online test from someone who had already taken the test. No one indicated that they witnessed students help someone cheat on an online test. Two noted that they became aware of students copying from another student during an online test with his or her knowledge. One focus group member once observed or became aware of a student using digital technology to get unpermitted help from someone during an online test or assignment. Once, two focus group members became aware or observed a student paraphrasing or copying a few sentences from a book, magazine or journal, without footnoting them in a paper he or she submitted in an online class. Finally, more than once two focus group members observed or became aware of a student using a false or forged excuse to obtain an extension on a due date or delay taking an online exam.

There were several forms of cheating that were never observed by any of the focus group members, namely, turning in a paper in an online class from a "paper mill" and claiming it as his/her own work; using an electronic/digital device such as an unauthorized aid during an exam; turning in a paper copied from another student's paper; turning in work done by someone else in an online class; cheating on a test in an online class in any other way.

When focus group members were asked how they believed students assessed material if they paraphrased or copied material from a written electronic source without citing it, each member stated that students accessed the information from the Internet.

Focus group members were asked whether they agreed or disagreed with the following statement: Cheating in online classes is a serious problem at this institution. Four stated that they were not sure, two agreed and one strongly agreed.

Research Question 2. The second research question was as follows: How do

online faculty judge the seriousness of online cheating and how well do they think their college deals with it?

To answer this question, the first step was to assess whether faculty even think cheating is a problem at their institution. Descriptive statistics were used to assess faculty's attitudes about the severity of cheating and different measures in response to online cheating (see Table 14). The median and mode of 3 indicate that faculty were unsure about cheating being a serious problem at their institution. It's important to establish the faculty's uncertainty, as it may influence their perceptions on the factors that influence online cheating.

One of the survey questions was about the fairness of the student judicial process (see Table 14). The median (3) and mode (3) indicated that faculty were not sure how fair the process is. The mode (4) for the response to whether students should be held responsible for the academic integrity of other students indicates that the most frequently reported answer is agree. The median value is 3. The median and mode of 3 for faculty vigilance showed that participants are unsure whether other faculty members are vigilant in discovering and reporting suspected cases of academic honesty in their online classes (see Table 14). The lack of commitment is another factor that could contribute to cheating. Faculty were also unsure about the fairness and impartiality of the college's judicial process that handles student cheating, as indicated by a median and mode of 3.

Next, the perception of different types of cheating was measured to determine to what extent faculty interpreted behaviors as cheating or not. Each of the dishonest behaviors was seen as cheating to some extent by each participant who answered the question. Most of the types of dishonest behaviors were identified by more than 80% of

Table 14

Aggregated Survey Responses: Faculty Attitudes Toward Online Cheating, Questions 13a–13d

Response	13a*		13b*		13c*		13d*	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Strongly Disagree	1	.8	5	3.8	16	12.2	4	3.1
Disagree	10	7.6	5	3.8	37	28.2	17	13.0
Not Sure	54	41.2	58	44.3	17	13.0	64	48.9
Agree	46	35.1	52	44.3	41	31.3	36	27.5
Strongly Agree	18	13.7	8	6.1	18	13.7	8	6.1
Missing**	2	1.5	3	2.3	2	1.5	2	1.5
Total	129	98.5	128	97.7	129	98.5	129	98.5

*13a – Cheating in online classes is a serious problem at their institution; 13b – Our student judicial process is fair and impartial; 13c – Students in online classes should be held responsible for monitoring the academic integrity of other students; 13d – Faculty members are vigilant in discovering and reporting suspected cases of academic dishonesty in their online classes.
**Missing indicates how many participants did not respond.

Table 15

Mean, Median, Mode, and Standard Deviations, Questions 13a–13d

Question	Mean	Median	Mode	Standard deviation
13a	3.54	3.00	3	0.86
13b	3.41	3.00	3	0.83
13c	3.06	3.00	4	1.29
13d	3.21	3.00	3	0.86

respondents as serious cheating (see Table 9). Only 36.8% of respondents indicated that they thought of as serious cheating paraphrasing or copying a few sentences from a book,

magazine or journal (not electronic or Web-based) without footnoting them in a paper s/he submitted in an online class (M = 3.17, SD = 0.77), and 44.3% considered to be serious cheating when students were working on an online assignment with others when the instructor asked for individual work (M = 3.32, SD = 0.69). For those questions, the mean scores are closer to 3, which indicates that the respondents felt that the dishonest behavior was considered more moderate. Table 9 provides more details.

Table 16

Seriousness of Behavior, Questions 9a2–9d2

Response	9a2*		9b2*		9c2*		9d2*	
	n	%	*n*	%	*n*	%	*n*	%
Not cheating	0	0	0	0	0	0	0	0
Trivial cheating	9	10.0	12	12.4	6	6.0	8	7.9
Moderate cheating	34	37.8	42	43.3	8	8.0	7	6.9
Serious cheating	47	52.2	43	44.3	86	86.0	86	85.1
Missing**	41		34		31		30	
Total	90		97		100		101	

*9a2 - Fabricating or falsifying a bibliography in an online assignment; 9b2 - Working on an online assignment with others when the instructor asked for individual work; 9c2 - Getting questions or answers on an online test from someone who has already taken a test; 9d2 - Helping someone else cheat on an online test.
**Missing indicates how many participants did not respond.

Table 17

Means and Standard Deviations, Questions 9a2–9d2

Question	Means	Standard deviation
9a2	3.42	0.67
9b2	3.32	0.69
9c2	3.80	0.53
9d2	3.77	0.58

Table 18

Seriousness of Behavior, Questions 9e2–9h2

Response	9e2*		9f2*		9g2*		9h2*	
	n	%	*n*	%	*n*	%	*n*	%
Not cheating	0	0	1	1.0	3	2.8	1	1.0
Trivial cheating	7	6.9	6	5.8	15	14.2	5	4.9
Moderate cheating	3	3.0	7	6.8	49	46.2	5	4.9
Serious cheating	91	90.1	89	86.4	39	36.8	92	89.3
Missing**	30		28		25		28	
Total	101		103		106		103	

*9e2 - Copying from another student during an online test with his or her knowledge; 9f2 - Using digital technology (such as text messaging) to get unpermitted help from someone during an online test or assignment; 9g2 - Paraphrasing or copying a few sentences from a book, magazine or journal (not electronic or Web-based) without footnoting them in a paper s/he submitted in an online class; 9h2 - Turning in a paper in an online class from a "paper mill" (a paper written and previously submitted by another student) and claiming it as his/her own work.
**Missing indicates how many participants did not respond.

Table 19

Means and Standard Deviations, Questions 9e2–9h2

Question	Means	Standard deviation
9e2	3.83	0.53
9f2	3.79	0.59
9g2	3.17	0.77
9h2	3.83	0.55

Table 20

Seriousness of Behavior, Questions 9i2–9m2

Response	9i2*		9j2*		9k2*		9l2*		9m2*	
	n	%	*n*	%	*N*	%	*n*	%	*N*	%
Not cheating	1	1.0	0	0	4	3.8	1	1.0	1	1.0
Trivial cheating	6	5.9	5	4.9	11	10.5	4	3.8	5	4.8
Moderate cheating	14	13.9	10	9.7	35	33.3	6	5.7	11	10.5
Serious cheating	80	79.2	88	85.4	55	52.4	94	89.5	86	81.9
Missing**	30		28		26		26		28	
Total	101		103		105		105		103	

*9i2 - Using an electronic/digital device as an unauthorized aid during an exam; 9j2 - Turning in a paper copied, at least in part, from another student's paper, whether or not the student is currently taking the same online course; 9k2 - Using a false or forged excuse to obtain an extension on a due date or delay taking an online exam; 9l2 - Turning in work done by someone else in an online class; 9m2 - Cheating on a test in an online class in any other way.
**Missing indicates how many participants did not respond.

Table 21

Means and Standard Deviations, Questions 9i2–9m2

Question	Means	Standard deviation
9i2	3.71	0.62
9j2	3.81	0.51
9k2	3.34	0.82
9l2	3.84	0.52
9m2	3.77	0.58

The focus group results showed that the six out of the eight participants were between not being sure and agreeing that cheating in online classes is a serious problem at this institution, much like the survey respondents. Two participants noted that they would have to guess at their answer, because they "need to look at data." When asked if the judicial process is fair and impartial, five agreed, whereas two were not sure. For the question on whether students in online classes should be held responsible for monitoring the academic integrity of other students, five varied between disagree to strongly disagree.

Survey respondents were asked to indicate the seriousness of dishonest behaviors. Several types of dishonest behavior were marked as "not cheating," such as paraphrasing or copying a few sentences from a book, magazine or journal (not electronic or Web-based) without footnoting them in a paper s/he submitted in an online class (2.8%) and using a false or forged excuse to obtain an extension on a due date or delay taking an online exam (3.8%).

The focus group members had a much different perception on dishonest behaviors

than the survey respondents. All of the focus group participants stated that the forms of cheating are all “serious cheating”, with the exception of two who considered using a false or forged excuse to obtain an extension on a due date or delay taking an online exam to be trivial cheating.

Participant 5 stated:

> Using a false or forged excuse to get more time–all the time. That seems more moderate. It’s more like boundary pushing, Not as serious as the last one.

Participant 8 stated:

> I believe in my own mind that it’s false or forged, but I consider it trivial.

Research Question 3. The third research question was: What strategies are used by college instructors to safeguard online course integrity? First, 60 respondents indicated that they saw a student cheat at least once. Those respondents were then asked to answer what their likely reaction would be if they were convinced, even after discussion with a student, that a student had cheated on a major test or assignment in their online course. They had to check all the reactions that applied to them. One answer—fail the student for the test assignment—received a majority of responses (61.6%). Respondents had an opportunity to write in their own answer, if they had a reaction to cheating that was not provided as an answer option. The responses were as follows:

1. “There is a procedure for reporting students that is used in our institution”
2. “Closer scrutiny of the student's future exams”
3. “Discuss the assignment with the student in an effort to prove he/she couldn't verbally support the writing”
4. “Retest with new test”
5. “Zero for the assignment”

6. "Failed student for that question"

Details are shown in Table 22.

Table 22

Aggregated Survey Responses: Reactions to Cheating, Questions 6a–6d

Response	6a*		6b*		6c*		6d*	
	N	%	*n*	%	*n*	%	*n*	%
Yes	23	38.3	15	25.0	37	61.6	14	23.3

Table 23

Aggregated Survey Responses: Reactions to Cheating, Questions 6e–6i

	6e*		6f*		6g*		6h*		6i*	
Response	*N*	%	*n*	%	*n*	%	*n*	%	*n*	%
Yes	11	18.3	14	23.3	10	16.6	2	3.3	3	5.0

*If you were convinced, even after discussion with the student, that a student had cheated on a major test or assignment in your online course, what would be your most likely reaction? *6a—Reprimand or warn the student; 6b—Lower the student's grade; 6c—Fail the student for the test assignment; 6d—Fail the student for the course; 6e—Require student to retake test/redo assignment; 6f—Report student to the Dean of Students; 6g—Report student to your Chair/Director or Dean; 6h—Do nothing about the incident; 6i—Other. Total of percentages indicate that respondents in some cases selected multiple responses. Total number of respondents for each response = 60.

In addition to the actions mentioned above, which outline the instructors' reactions to cheating, there are several safeguards employed by faculty to aid in the reduction of cheating. Respondents checked all options that applied to them. The most widely used are provision of information about cheating (65.6%), Internet or plagiarism software (59.5%), discussing the importance of honesty (52.7%) and changing exams

regularly (51.1%). A small percentage of participants (1.5%) indicated that they use no safeguards in their courses. At-home proctor software was selected by only 9.9% of the respondents. See Table 24 for an exact breakdown.

Table 24

Aggregated Survey Responses: Safeguards to Reduce Cheating

N = 131	*N*	% Yes
14a. None	2	1.5
14b. Internet or plagiarism software	78	59.5
14c. Provide information about cheating	86	65.6
14d. Change exams regularly	67	51.1
14e. Different versions of exams	46	35.1
14f. Discuss importance of honesty	69	52.7
14g. Remind students about policy	58	44.3
14h. Closely monitor students taking exam	33	25.2
14i. On-campus proctored testing center	47	35.9
14j. Off-campus proctored testing center	20	15.3
14k. At-home webcam computer proctor	13	9.9
14l. Password protected exams	49	37.4
14m. Secure exam browser lockdown	23	17.6

Note. 14a. None. I do not use any special safeguards in my courses, 14b. Use the Internet, or software such as Turnitin.com, to detect or confirm plagiarism, 14c. Provide information about cheating/plagiarism on course outline or assignment sheet, 14d—Change exams regularly, 14e—Hand out different versions of an exam, 14f—Discuss my views on the importance of honesty and academic integrity with my students, 14g—Remind students periodically about their obligations under the institution's academic integrity policy, 14h—Closely monitor students taking a(n) test/exam, 14i—On-campus proctored testing center, 14j—Off –campus proctored testing center, 14k—At-home webcam computer proctor, 14l—Password protected exams, 14m—Secure exam browser lockdown.

Focus group members were asked what safeguards they employ in their courses,

and indicated that the most widely used safeguards are the Internet or software such as Turinitin.com to detect or confirm plagiarism and using on-campus proctored testing center. While that was the second highest selected safeguard, survey respondents indicated that providing information regarding cheating or plagiarism is their most likely action to safeguard their course. Three focus group members indicated that they no longer give exams or they no longer base the students' grades on results of high stakes exams. Safeguards that were mentioned by other focus group members are providing information about cheating/plagiarism on the course outline or assignment sheet, handing out different versions of the exam and using password-protected exams. Some of the remarks regarding safeguards were as follows:

> Participant 2 stated:
>
> Refuse to teach a course where all of the tests would be online. I don't see the point of that. I would accept offsite as long as it is a reputable place.
>
> Participant 5 stated:
>
> My biggest concern with webcam or off-campus is the cost. If the cost situation could be resolved where I don't have to take into consideration that I want to give five tests in my course and it is $20 to $25 a pop—that all of a sudden becomes a lot of money. I don't trust secure lockdown browser. I don't have confidence with that type of technology where all of a sudden you're roped into "I can't get it installed or the system froze."

Research Question 4. The fourth research question was as follows: To what extent do instructional college faculty follow the institution's code of conduct in response to academic dishonesty? Respondents were able to select more than one response. Table 12 shows that with the exception of 8.4% of respondents, all respondents knew about the academic integrity policy. The majority (61.8%) learned about it in the faculty handbook, followed by 41.2% who learned about the policies from the faculty orientation program.

See Table 25 for further details.

Table 25

Aggregated Survey Responses: Primary Source From Which Faculty Learned About Academic Integrity Policies

Response	*n*	Yes %
Faculty Orientation Program	54	41.2
Faculty Handbook	44	61.8
Department Chair	43	33.6
Other Faculty		32.8
Students	2	1.5
Dean or other Administrators	20	15.3
Publicized Results of Judicial Hearings	3	2.3
College Catalog	36	27.5
I have never really been informed about campus policies concerning student cheating	11	8.4
Other	12	9.2

Note. Total number of participants: 131.

Faculty were asked what their reaction to cheating would be if they were convinced that a student cheated on a major test or assignment. Table 22 shows that 23.3% would report the student to the Dean of Students, 16.6% to their Chair/Director or Dean; but 3.3% indicated that they would do nothing about the incident.

When asked whether an incident of cheating was ever ignored and why, 38 out of 125 participants (30.4%) who answered the question indicated that they have ignored it. Those 38 respondents were asked to indicate on a checklist what the reason was they ignored cheating. Most of them (84.2%) indicated that they ignored it because they lacked evidence or proof of cheating. Survey respondents had an opportunity to write in

their own answer, if their reason for ignoring cheating that was not provided as an answer option. The responses were as follows:

1. "My exams are designed so that students who cheat them fail. Saves me from having to get into the whole bureaucratic mess of bringing student up on charges."

2. "Academic integrity is important; however, a draconian response to a glance at a classmate's paper would be inappropriate, IMHO."

3. "How can I prove another person took the exam; perfect score in minimal time."

4. "Using books and notes would not help one cheat on an oral French test."

5. "The student was not passing the course. Did not matter if the student earned 100% the balance of the grades were so poor, it not make a difference"

Table 26

Aggregated Survey Responses: Frequencies and Reasons for Ignoring Cheating

Response	Frequency	%
7a—Lacked evidence/proof	32	84.2
7b—Cheating was trivial/not serious	7	21.9
7c—Lack of support from administration	4	12.5
7d—Student is the one who will ultimately suffer	9	28.1
7e—Didn't want to deal with it; system is so bureaucratic	5	13.2
7f—Not enough time	1	2.6
7g – other	5	13.2
Total	38	

Faculty were asked if they ever referred a case of cheating to their Chair, Dean or

anyone else and how satisfied they were with the way the case was handled. Of the 58 people who answered, 70.7% indicated they were very satisfied (36.2%) or satisfied (34.5%). See Table 27 for further details. The most likely reason 78 respondents did not submit an answer is because they never referred a case.

Table 27

Degree of Satisfaction by Faculty With Handling Cases of Cheating

Response	Frequency	%
Very satisfied	21	36.2
Satisfied	20	34.5
Unsatisfied	4	6.9
Very unsatisfied	6	10.3
Neutral	7	12.1
Missing*	73	
Total	58	

*Missing indicates how many participants did not respond. Total respondents = 58.

Five focus group members responded favorably toward receiving information about the academic integrity policies at their institution from the college catalog. For this question, respondents could select multiple sources if the integrity policy was received in that manner. Four members indicated that they also received this information from the faculty orientation program, the faculty handbook, the department chair and from other faculty. One focus group member indicated that information was obtained from the dean or other administrator.

Five of the focus group members—those who indicated that they were convinced that a student cheated on a major test or assignment—stated that they would fail the

student for the test or assignment. In each of the following categories, one focus group member each indicated that their reaction would be to lower the student's grade, fail the student for the course, and do nothing about the incident. Participant 2 explained in regard to what action would be taken if a student had cheated: "unless I can really validate then there is no point [to take any action]. Unless I can convince myself, then there is no way of really convincing anyone else [that the student cheated]." Participant 3 mentioned "If I were to catch someone in the test environment then they would fail that particular test. And anything else I would ignore. I would have to be sure." Participant 4 said "My first year, I ignored it because I did not know how to proceed."

Participant 7 mentioned in respect to notifying the administration of cheating:

> Have I known it happened and decided not to proceed further on the chain of commands? Absolutely, because, as others have said, my standpoint is obvious: they've cheated. But they already received punishment—they failed the test or assignment. Why bother?—the penalty is in place.

Participant 8 said:

> I usually fail the student on that assignment and tell them not to do it again. With my multiple-choice quiz I usually do [ignore cheating] because I can't prove that it was done. With my experience, they will ultimately fail. I usually teach six classes and it's hard. It's time-consuming.

There were two focus group members who indicated that they have referred a suspected case of cheating to their Chair or someone else. One was very satisfied with the way it was handled, while the other (Participant 6) mentioned "I was hoping that the dean was going to give me more direction. It was left to me to decide."

Research Question 5. The fifth research question was: What types of support do instructional college faculty desire to help lower online cheating? Plagiarism detection software, like Turnitin.com is the most widely selected choice of safeguards (50.0%) as

shown in Table 27. Other safeguards were written in by participants:

1. "Different version of the test for each student"
2. "Time frame for completion thus providing time to cheat once test started"
3. "Change the test or generate random test questions"
4. "Large data base of questions"
5. "The structure of the class can reduce cheating greatly. Multiple, smaller assignments that ask for written explanations can make cheating a lot more difficult"
6. "Higher-order thinking and application exams versus recall of information"

The details of the survey participants' answers are reflected in Table 28.

Table 28

Aggregated Survey Responses: Additional Safeguards Faculty Would Employ

Safeguard	*n*	%
15a—Plagiarism detection software, like TurnItIn.com	52	50.0
15b—On-campus proctored testing center	33	31.7
15c—Off –campus proctored testing center	18	17.3
15d—At-home webcam computer proctor	33	31.7
15e—Password-protected exams	37	35.6
15f—Secure exam browser lockdown	34	32.7
15g—other	6	5.8

Note. 15a—Plagiarism detection software, like TurnItIn.com; 15b—On-campus proctored testing center; 15c—Off –campus proctored testing center; 15d—At-home webcam computer proctor; 15e—Password-protected exams; 15f—Secure exam browser lockdown; 15g—other.

When asked which safeguards focus group members would use if they were available, Participant 1 answered "Turnitin for discussions if it was available and password protected exams." Participant 2 stated, "I would accept offsite as long as it is a

reputable place." Participant 4 mentioned "in Moodle, you have test banks with three different versions of the same question."

Participant 7 mentioned

> Would love to have at home webcam computer proctor. Problem is the cost. To have them pay $125 a semester, just… I can't ask that of them. So until the cost can be mitigated I won't do it.

Research Question 6. The sixth research question was as follows: To what degree do instructional college faculty perceive the acceptance of the use of institutional measures to prevent online cheating? To answer this research question, faculty answered a Likert-scale question where they had to rate their perception very low (1), low (2), medium (3), high (4), or very high (5). The most repeated answer was for faculty support of the policies, which is indicated in Table 28 by a mode of 5 and a median of 4 (M = 3.80, SD = 1.058).

With faculty being highly or very highly supportive of institutional integrity policies (Table 28), it is interesting to note that the most widely selected answer by faculty on how information regarding plagiarism is conveyed is via their syllabus (74.4%; Table 29). See Tables 28 and 29 for more information.

Thirty-eight respondents indicated that they ignored a suspected case of cheating. Those 38 were then asked to check all reasons that applied to them from a checklist provided. Faculty who ignored a suspected incident of cheating checked off lack of evidence proof as the primary reason why they did so (84.2%, *n* = 32) (see Table 30). As far as referring a suspected case of cheating to the Chair, Dean or anyone else, 44.6% (*n* = 58) indicated that they had and 70.7% were very satisfied (36.2%) to satisfied (34.5%) (see Table 26).

Table 29

Aggregated Survey Responses: Faculty Ratings of Institutional Measures to Prevent Online Cheating

Response	n	Median	Mode	Mean	SD
1a. Severity of penalties for cheating in online classes at your institution	121	3.00	3	3.26	1.173
1b.Student's understanding of the college's policies concerning cheating in online classes	125	3.00	3	2.71	1.022
1c. Student support of these policies	101	3.00	3	2.69	.935
1d. Faculty support of these policies	120	4.00	5	3.80	1.058
1e. Effectiveness of these policies	117	3.00	3	2.98	1.025

Focus group members were asked to rate the severity of penalties for cheating in online classes at their institution. Their answers were as follows:

Participant 1 stated:

> Really high, because I have seen where it has gone through the ranks—not in my case, but I have seen where it—it occurred in other cases–where it went from the Dean to the Associate Dean all the way up to the Dean of Student Affairs. I think we have the appropriate setup to take care of cheating.

Participant 2 stated:

> I agree with the fact that we have a process in place that works. I am not so sure that I would rate the overall severity being high because it is very much at the discretion of the instructor as the instructor determines their own syllabus. So I could have one penalty and another colleague could have another penalty for the same infraction. So institutionally, I don't think we're highly effective that way.
>
> But I do agree that once you set your policy the procedure does work, assuming that policy is then seen through.

Participant 3 said:

Table 30

Aggregated Survey Responses: How and When Faculty Discuss Institutional Dishonesty Policies, Questions 2a–2d

Response	2a*		2b*		2c*		2d*	
	n	%	*n*	%	*n*	%	*n*	%
Do not discuss	3	2.3	10	7.8	4	3.1	19	15.0
On individual assignments	0	0	19	14.8	42	32.8	18	14.2
In syllabus of course outline	96	74.4	54	42.2	39	30.5	39	30.7
At start of semester	21	16.3	26	20.3	17	13.3	19	15.0
Other	1	.8	1	.8	6	4.7	2	1.6
Not relevant	8	6.2	18	14.1	20	15.6	30	23.6
Missing**	2		3		3		4	
Total	129		128		128		127	

*2a—When, if at all, in your online courses do you discuss with students your policies concerning plagiarism? 2b—When, if at all, in your online courses do you discuss with students your policies concerning permitted and prohibited group work or collaboration? 2c—When, if at all, in your online courses do you discuss with students your policies concerning the proper citation or referencing of sources? 2d—When, if at all, in your online courses do you discuss with students your policies concerning falsifying/fabricating research data?
**Missing indicates how many participants did not respond.

> With respect to specifically online classes in my discipline, mathematics, I would rate it medium. The reason being is that the way my online courses are structured. For example for the course that I teach, the students tend to do 30% of the work at home and there is no way we can monitor what they do and how they do it. Thirty percent of their grade comes from what they do away from the college. However, 70% of the grades comprises proctored tests. So we have proctored tests then for 70% of the grade. So from that particular point of view, you know, when we proctor the tests here and if the student tries to cheat, then the penalties are quite high.

Participant 4 stated:

Table 31

Reason Cheating Was Ignored

Response	*n*	%
7a—Lacked evidence/proof	32	84.2
7b—Cheating was trivial/not serious	7	18.4
7c—Lack of support from administration	4	10.5
7d—Student is the one who will ultimately suffer	9	23.7
7e—Didn't want to deal with it; system is so bureaucratic	5	13.2
7f—Not enough time	1	2.6
7g—other	5	13.2

I have to say no opinion, because I have not seen the process go through.

Participant 5 stated:

I don't know if I think that there is a culture of severity for cheating, because I don't think it's something that can be quantified, I guess you would say. Because for me, it's like, like your case where 30% is taken at home. Is that really…? And if your brother does it for you? Well, can I prove that? And the administration is in a position of "Well, did it really happen?" I don't really think that … it's sort of ubiquitous, it's not really well defined. I agree that if it is in my syllabus, I can really say I'm behind that. The administration would do the same. But I think it's a difficult situation to prove and a difficult situation to apply a penalty for something you really can't define.

Participant 6 stated:

When you look at the syllabus template that the Institutional technology department provides and their statement on what the penalties are, it very much follows the policy that is in place by the college, which is very open-ended. I think that the severity is dependent on the instructor and the department that the instructor is in as to how much they want to actually enforce it.

Participant 7 stated:

Yes, there is a culture of severity: the penalty is set out and it's severe. But the

> position the administration takes is ”Well, but can you prove it?” And that’s a very difficult thing when you teach solely online the way I do. So I think it is much more complex.

Participant 8 stated:

> Well, I can only echo what everyone else says in terms of “There is a policy in place,” but it’s extremely subjective from our perspective as professors and from those who are above us—technically the associate dean and the dean of students. And it’s subjective also in the sense of “What are the penalties on our end?” If we pursue punishing the student, there is an atmosphere in the college where they would rather give the student the benefit of the doubt. Although I have, very early on in my career, I’ve sat in on grade appeals and that is where we find that we have a lot of coverage and advocacy, but when it comes to severely punishing someone for cheating … I don’t know far the school would like to go. And I wonder as well–just to add on to what I said—with this atmosphere of retention–well that’s something to consider when retention is based on ... or monies is based on retention … that’s something else we have to figure out when we see cheating.

To the question of how faculty would rate the average student’s understanding of the college’s policies concerning cheating in online classes, focus group members answered as follows:

Participant 1 said:

> I would go low on that one–they know it but they still do it.

Participant 2 said

> From my experience it’s very low–students seem to be very unaware of what constitutes cheating, even when it is specified in the syllabus

Participant 3 said:

> I would say low as well–I have no reason why, except that from interacting with students. I would say that they are not aware and that they will see how much they can get away with and push to the boundaries. Maybe they are aware of it and they decide to push the boundaries

Participant 4 said:

> I think it’s less an understanding of the policies concerning cheating as much as what they know they can get away with. As opposed to well is the boundary between slacking off a bit, and just turning in good enough work to get by or

when do you cross over into cheating like taking somebody's notes instead of your own or turning in someone else's work as your own.

Participant 5 said:

I think it's really a two-pronged problem: The first is that I don't think they understand. They go on the Internet and think, "Well, this is like research." They can put that in their discussion. Now I just take it and put it into Google and, look, it comes up as this other guy's article. They don't really realize that that's not theirs–you have to cite that. So I think they don't really know and they also think too, if they can push a little bit and try to get to the edge. I think it's probably a combination. I think we should probably push for more: Maybe they can have a module or something to explain what it is–what cheating really is.

Participant 6 said:

I feel that students are given enough opportunity to actually know what it is, because the orientation has a page with a lot on academic honesty. Like I teach a course where the orientation assignment that they had to do was to go and find the academic honesty policy in the syllabus and paste it in, and submit that assignment. The students did that. And then it comes back to now–OK, I think they know. In this one class I caught four people cheating, even after submitting the assignment that said find that academic policy and show that you've read it by submitting it. So I think it is also a question of knowing really what it is because it is kind of broad–that policy statement. Does that tell the students enough? I have a suspicion that academic honesty is not really a priority for the K-12 system. Their mindset is set at that level and when they come to the college they think they can just continue with that.

Participant 7 said:

I would say that awareness and compliance are two vastly different issues. And to that point, two years ago, I was required by my college to do a culture project. I teach Spanish. And I gave them very very specific instructions especially concerning not stealing photographs that were copyright-protected. They were given really really really detailed instructions about don't do this, look for creative commons images that give you permissions that allow you with attributions. I would say that out of 90 students between my four classes that semester, I had to no-credit at least 20 of them for violating that policy.

Participant 8 said:

> Again I feel that the there is a policy, from my understanding, since I've been teaching online–there is a hyperlink on the syllabus. In my syllabus quiz I have a question about academic honesty, plus it is adequate in terms of notice. But are the students reading it? Possibly not. I also feel that many students, especially in teaching History, they may have had the 1101 class where they are introduced to the idea of academic honesty. I just think that they try to see what they can get away with.
>
> They seem genuinely shocked to get caught when they are confronted.

Focus group participants all rated effectiveness of student support of the policies against cheating either very low or low. They also rated faculty support for the policies mostly low (n=3), yet some rated them high (n=2) and very high (n=1). Accordingly, the effectiveness of the policies were also rated low (n=4) by most and only one rated it high. Reasons stated why effectiveness is rated low are: "There is uncertain administrative support. Let's be real: it is a lot of work." (Participant 2), and Participant 3 said:

> There is all of the hoops to jump through once you catch a student, even when it is red-handed. All of the paperwork, and then the back and the forth and then the meeting and all of that stuff and how you're gonna prove it. Even in a face-to-face class where the student … if you catch a student with a cell phone with pictures and all that stuff. What do you do at that point? Do you get that cell phone? How will you prove now what the student had on the cell phone and all that stuff? So that's the problem there. So I think from this point it is prevention–from the faculty standpoint: for example, giving multiple tests, organization. That leads to the effectiveness of these policies. Of course we want a fair process for the students, but at the same time, does it become a burden for the faculty?

Focus group members were asked if they had ever ignored a suspected incident of cheating in one of their courses for any reason. While one stated that they had, the rest (n=7) indicated that they took action such as failing the student for the test. The one that mentioned to have ignored it explained that he was new to the college at the time and did not know what the procedure was that needed to be followed.

When asked how strongly focus group members agreed or disagreed that faculty members are vigilant in discovering and reporting suspected cases of academic dishonesty in their online classes, one was unsure, while two said that they varied between unsure and agree. The rest (n = 4) agreed. One remark was that there is likely a difference between part-time and full-time faculty, with part-timers being less likely to be as vigilant as full-time faculty (Participant 3). An additional comment by Participant 7 was “not sure especially with regards with the vigilance just because I hear too often from my students that other online instructors don’t pay attention.”

Correlations and associations. The study examined whether there is a correlation between “The average student’s understanding of the college’s policies concerning cheating" and "Student support of these policies." The correlation between the "average student's understanding of the college's policies concerning cheating" and "student support of these policies" is statistically significant, r=0.41, p<.001 (see Table 31). These results indicate that the average student's understanding of the college’s policies concerning cheating has a moderate positive correlation with student support of these policies.

The correlation between the “Student support of these policies” and “Faculty support of these policies,” r = 0.60, p < .001, is statistically significant (see Table 19). According to these results, there is a moderate positive correlation between the students’ and faculty’s support for the policies concerning cheating in online classes.

The correlation between the “Faculty support of the college's policies concerning cheating” and “The effectiveness of these policies” is statistically significant, r = 0.67, p < .001 (see Table 31). These results indicate that the average faculty’s as well as the

average student's support of the college's policies concerning cheating has a moderate positive correlation with the effectiveness of these policies.

Table 32

Pearson Correlations of Institutional Policies, Support, and Effectiveness

Correlations	*N*	*r*	*p*
1b. The average student's understanding of the college's policies concerning cheating in online classes vs. 1c. Student support of these policies	100	0.41	<.001
1b. The average student's understanding of the college's policies concerning cheating in online classes vs. 1d. Faculty support of these policies	116	0.53	<.001
1c. Student support of these policies vs. 1d. Faculty support of these policies	96	0.60	<.001
1e. The effectiveness of these policies vs. 1b. The average student's understanding of the college's policies concerning cheating in online classes	115	0.53	<.001
1e. The effectiveness of these policies vs. 1c. Student support of these policies	93	0.60	<.001
1e. The effectiveness of these policies vs. 1d. Faculty support of these policies	112	0.67	<.001

Question 13, "Cheating is a serious problem at this institution," was tested for correlation with "Faculty members are vigilant in discovering and reporting suspected cases of academic dishonesty." There is no evidence of a correlation, $r = 0.01$, $p < .001$ (see Table 33).

Table 33

Pearson Correlations: Cheating is a Serious Problem Versus Faculty are Vigilant in Reporting

Correlation	*N*	*r*	*p*
13a. Cheating in online classes is a serious problem at this institution vs. 13d Faculty members are vigilant in discovering and reporting suspected cases of academic dishonesty in their online classes	129	0.01	<.001

The researcher tested whether a correlation exists between the faculty's number of years of teaching at the college level (Question 16) and the type of reaction to evidence of cheating (Question 6). The correlation between the faculty's years of teaching and the respondent's type of reaction to the evidence of cheating was weak when all the responses were combined, $r = 0.25$ (see Table 34).

Table 34

Pearson Correlations: Actions Taken for Cheating Versus Years of Experience

Correlation	*N*	*R*	*p*
16. How many years have you been teaching at the college level vs. (q6) Actions Total	68	0.25	<.001

The researcher tested whether a relationship exists between the faculty's gender (Question 17) and the type of reaction to evidence of cheating (Question 6). The relationship between the faculty's gender and the respondent's type of reaction to the evidence of cheating was weak for any type of response (Table 35). Cross-tabulations showed female faculty would more likely reprimand the student than male faculty by 10 percentage points, would be twice as likely to lower their grade or fail the student for the

course. The largest difference, 16 percentage points, was in female faculty's being more likely to fail the student for the test or assignment than male faculty. Chi square analyses were used to determine whether faculty's gender is associated with their response to cheating in the areas which showed a significant difference between the male and female responses. No significant associations were found. Table 35 shows a trend that female respondents were markedly more punitive in their responses to cheating than males.

Table 35

Aggregated Cross-Tabulation: Responses to Cheating by Gender

Response to cheating	Male (n = 28) % Yes	Female (n = 41) % Yes	Pearson chi-square
Reprimand or warn the student	11.6	21.7	.24
Lower the student's grade	7.2	14.5	.75
Fail the student for the test/assignment	18.8	34.8	1.17
Fail the student for the course	7.2	13	.216
Require student to retake test/redo assignment	7.2	8.7	
Report student to the Dean of Students	8.7	11.6	
Report student to your Chair/Director or Dean	7.2	7.2	
Do nothing about the incident	1.4	1.4	
Other	1.4	2.9	

Cross-tabulation was used to examine whether there is a relationship between faculty's teaching discipline and their reactions to evidence of cheating. No significant relationships were found (see Table 36). These results show that faculty's teaching discipline is not interrelated with their reaction to evidence of cheating. The respondents from the Social/Behavioral sciences have a notable difference in their reaction to

cheating. Overall, their reaction is higher than in other disciplines. In Table 36, the reaction to cheating is reflected by discipline.

Table 36

Aggregated Cross-Tabulation: Reactions to Cheating by Discipline, Questions 6a–6e

Area of teaching	6a*		6b*		6c*		6d*		6e*	
	N	%Yes	*n*	%Yes	*n*	%Yes	*n*	%Yes	*n*	%Yes
Humanities	7	30.4	3	23.1	11	31.4	5	35.7	5	45.5
Math or Science	4	17.4	4	30.8	11	31.4	2	14.3	0	0
Nursing/ Health	4	17.4	2	15.4	5	14.3	1	7.1	2	18.2
Social/ Behavioral Science	8	34.8	4	30.8	8	22.9	6	42.9	4	36.4
Total	23		13		35		14		11	

Note. If you were convinced, even after discussion with the student, that a student had cheated on a major test or assignment in your online course, what would be your most likely reaction? *6a—Reprimand or warn the student; 6b—Lower the student's grade; 6c—Fail the student or the test assignment; 6d—Fail the student for the course; 6e—Require student to retake test/redo assignment.

Table 37

Aggregated Cross-Tabulation: Reactions to Cheating by Discipline, Questions 6f–6i

Area of teaching	6f*		6g*		6h*		6i*	
	n	% Yes	*n*	% Yes	*n*	% Yes	*n*	% Yes
Humanities	4	28.6	5	55.6	0	.0	1	.0
Math or Science	3	21.4	1	1.1	0	.0	2	
Nursing/Health	2	14.3	0	.0	1	50.0	0	.0
Social/Behavioral Science	5	35.7	3	33.3	1	50.0	0	
Total	14		9		2		3	

Note. 6f—Report student to the Dean of Students; 6g—Report student to your Chair/Director or Dean; 6h—Do nothing about the incident; 6i—Other; *Total of percentages exceeds 100% indicating that respondents in some cases selected multiple responses.

Chapter Summary

The findings of the research were presented in this chapter. The survey answers of the participants' responses were analyzed with descriptive statistics and sampling distributions and compared to the qualitative responses from the focus group members. The perceptions of cheating at their respective institutions varied, with the majority of faculty being unsure, or disagreeing that cheating is a serious problem at their institution. Faculty mostly indicated that they had not personally witnessed students engaging in obtaining answers to online tests or copying answers from another student and were unsure whether dishonesty is a problem at their institution, but they strongly believed copying information from the Internet without proper citation (plagiarism) to be the primary type of dishonesty. Students' monitoring one another to ensure academic integrity was identified by faculty as the factor that mostly influences cheating, but focus group members expressed concern regarding students in this role, questioning whether it is a fair burden.

To safeguard online course integrity, college instructors identified the use of preventative strategies like providing integrity policy information in the syllabus and using plagiarism detection software, or reactive strategies, like failing the student for the test or assignment. Additionally, the use of proctored testing environments on campus or off campus was also commonly selected. Respondents indicated that the at-home webcam was not widely used, nor was it selected by many as a feasible tool, as the cost for students seeking those options was said to be high; and faculty indicated that they were more likely to utilize it if the cost for each use was reduced.

Respondents indicated that they knew their institutional policy on academic

integrity from reading the college handbook, for example, but their reaction to cheating was not always in line with the institution's policy, manifested by about 30% confessing to ignoring cheating at various times. Regardless of the faculty's academic discipline, lowering the student's grade was the widely practiced reaction, while reporting the incident to the department Chair or Dean proved to be an unpopular response. Some faculty ignored cheating as they lacked proof that it took place. Desired support to help lower cheating included on-campus proctored exams and at-home webcam computer proctor.

The degree to which instructional college faculty perceived the acceptance of the use of instructional measures to prevent online teaching depended on the level of support. Respondents perceived students to have a low level of understanding of the policies, which resulted in low support of them. Faculty were highly supportive of the policies and perceived them as being very effective, but they were mostly unsure about the effectiveness of the student judicial process as they had not seen data related to this effectiveness.

Neither gender, discipline, nor the number of years faculty taught at the college level seemed to have a significant relationship with the punishment in general, or the type of punishment faculty used to reprimand students for cheating. There was a slight indication of females in this study being more punitive compared to males. The same seemed true for faculty from the social and behavioral sciences. Chapter 5 will provide a discussion of the summary of findings, along with limitations, implications, conclusions and recommendations.

Chapter 5: Discussion

The purpose of this study was to provide an inquiry into the phenomenon of cheating in online courses. This mixed-method study on cheating in online classes at the college level was conducted as an inquiry into the problem of dishonesty from the perspective of faculty. The findings of the study were presented in Chapter 4, where the data of the survey portion of the research, as well as the information obtained from the focus group meeting, were organized by each of the six research questions that were the foundation for the study.

Overview of the Study

There are many studies that address the problem of cheating in online classes (e.g., Bedford et al., 2011; Brent & Atkisson, 2011; Chapman et al., 2004; Correa, 2011; Devlin & Gray, 2007); Hudd et al., 2009), and increased pressure by the Federal Government (2008; Higher Education Opportunity Act, 2008) has resulted in implementation of processes to help prevent dishonesty. Despite these efforts, research has shown that the perception about cheating is still ambiguous, which results in reduced effort to implement strategies for reduction (Pincus & Schmelkin, 2003). Moreover, there is some evidence that the gap between students and faculty perception of what constitutes cheating is widening, which makes implementation of strategies more difficult (McCabe, Butterfield, & Trevino, 2012). As indicated by Pincus and Schmelkin (2003), faculty do not always view academic honesty in two dichotomous categories of existence. Rather, they found that faculty often view dishonesty on a continuum that ranks forms of dishonesty on different levels based on their perceived level of severity. The findings of this study were consistent with the notion of a continuum, as faculty rated paraphrasing

or copying a few sentences from a book without proper footnoting as a much lower case of dishonesty than copying from another student during an online test with his or her knowledge.

The research questions for this study were:

1. To what degree do instructional college faculty perceive dishonesty as a problem in their online classes?
2. How do online faculty judge the seriousness of online cheating and how well do they think their college deals with it?
3. What strategies are used by college instructors to safeguard online course integrity?
4. To what extent do instructional college faculty follow the institution's code of conduct in response to academic dishonesty?
5. What types of support do instructional college faculty desire to help lower online cheating?
6. To what degree do instructional college faculty perceive the acceptance of the use of institutional measures to prevent online cheating?

Five hundred and eighty-eight online faculty from three Florida community colleges were invited to partake in the study. The initial invitation with two reminders were sent via email by a liaison from the department of Instructional Technology at each of the three participating colleges. The mixed-methods study consisting of an 18-question survey was completed by 131 online faculty (22%). The AIS was modified with permission of D. McCabe, Creator of AIS (personal communication, June 7, 2013), who developed the survey. Participants were asked to sign up for a one-hour focus group

meeting which addressed the same questions. Eight volunteers were selected to attend the meeting. The purpose of the focus group meeting was to obtain an in-depth view from the faculty and to triangulate the answers obtained from the survey.

Summary of Findings

The sample for the quantitative part of the study consisted of 51 males (39%), 79 females (61%), and two other members who did not disclose their gender. Cross-tabulations showed that there is no significant relationship between gender and the response to cheating, although female faculty indicated a slightly more punitive attitude than male faculty.

Representative sample. Davern (2008) stated that a sample is considered to have "strong external validity" (p. 721), when its make-up is reflective of the population. He further explained that this representation then makes generalization possible. To determine if the study's sample is representative of the target population, the researcher obtained comparative demographic data from the participating institutions and determined the gender breakdown of online instructors for the Winter 2013–2014 semester to be 374 females (61.5%) and 234 males (38.5%; L. Ciardulli, Assistant Vice President of Academic Technologies, personal communication, April 10, 2014, E. Muirhead, Executive Assistant, personal communication, April 12, 2014, and S. Arsht, eLearning Student Success Specialist, personal communication, April 25, 2014), and this was comparable to what was obtained in the current study's sample.

The researcher obtained information from the participating institutions regarding the breakdown of instructors by discipline in the Winter 2013–2014 semester. Disciplines were grouped the same way in which the groups were combined for the statistical

analysis of this study, which resulted in 430 online instructors altogether in subject areas that matched the ones for this. This breakdown falls in line with the breakdown of this study, with all of the disciplines being within 4% difference in terms of representation, with the exception of faculty in the business department, which had a 6.6% higher representation in the survey.

Demographic influence on cheating. A cross-tabulation did not indicate any definitive trends between faculty's teaching discipline and their reaction to any evidence of cheating. The number of years of teaching did not indicate a significant bearing on their reaction to cheating, except when it came to having the student retake a major test or redo an assignment when cheating was discovered. The results showed that the greater the number of years of teaching experience, the more likely that faculty are to have the student retake the test or redo the assignment. The results for each research questions will be discussed in detail in the next section.

Perception of dishonesty as a problem. Research Question 1 was, "To what degree do instructional college faculty perceive dishonesty as a problem in their online classes?"

Fifty-one (57.3%) respondents indicated that they believed that plagiarism occurred often in their online classes. Studies done with students who had to self-report their instances of cheating support faculty's inclination to believe that students cheat in their classes (Harkins & Kubik, 2010; McCabe et al., 2012). The perception of cheating is based on speculation, except for plagiarism that involves copying lines without citations. This explains why the highest percentage of faculty (41.9%) expressed uncertainty about cheating being a serious problem at their institution. This trend could be attributed to

cheating being a less noticeable problem in the online environment because online faculty aren't as well positioned to be able to witness cheating in an online context.

Focus group discussion revealed that many of the different types of cheating cannot physically be witnessed by the instructor, due to the mode of delivery. The participants further explained that speculation of cheating is difficult to prove without reasonable doubt, but that easy access to electronic materials makes it more likely for students to try. This includes the use of multiple electronic devices while taking exams: one device has the exam open, while the other device is used to look up answers. Another method used for cheating that was discussed by focus group members was plagiarism when submitting discussion posts, as the discussion feature does not have the plagiarism detection software. Hacking into accounts was also cited to be a common way to cheat, as obtaining username and password information from other students seems rather easy. Turning in papers from a "paper mill" is not widely noted as a common way to cheat.

Seriousness of cheating and colleges' responses. Respondents were unsure whether cheating is a serious problem at their institution. The uncertainty about the existence of cheating likely affects the faculty's reaction to cheating. Focus group members argued that their answers were based on guesses, as they did not see any data from their college that provided factual information. A weak relationship exists between "cheating is a serious problem at this institution" and "faculty members are vigilant in discovering and reporting suspected cases of academic dishonesty." This may indicate that published institutional data regarding cheating will likely encourage faculty to become more vigilant and to enforce the institutional integrity policy.

Another factor that may influence cheating is the perception of the instructors

about the seriousness of cheating. More than 89% of instructors indicated that turning in a paper from a paper mill or turning in work done by someone else is considered serious cheating. There were a few forms of cheating that were seen as trivial to moderate, such as paraphrasing or copying a few sentences from a book without proper footnoting or students submitting false or forged excuses to get an extension on exams or assignments. When faculty's perception and reaction are inconsistent, their reaction to the type of cheating may also vary. The focus group discussion addressed this issue, where members mentioned that students often test the boundaries to see how much they can get away with. This understanding echoes Correa's (2011) conclusions that students learn about the culture of academic integrity at their institution and if faculty does not take their role in combating cheating seriously, it will continue to exist.

Participants of the survey study and focus group members differed in their rating of peer influence. Survey study participants mostly agreed that students in online classes should be responsible for the integrity of other students, while focus group participants mostly disagreed because they felt that it should not be the students' task to police other students. McCabe and Trevino (1997) argued that peer reporting can be highly effective since peers are more likely to find out from one another that someone has cheated. In turn, stated McCabe and Trevino, the threat of its being reported may be enough to keep students from cheating at all. Their study revealed that students were mostly affected by the disapproval or potential negative reaction of their peers. McCabe and Trevino (1997) therefore recommended that institutions that are serious about combating cheating must look closely at ways to create a culture of cheating being unacceptable among peers.

The last factor that may influence cheating is the subject discipline of the faculty

member. The small pool of respondents in any of the disciplines makes generalizing difficult. However, there were observed differences worth noting: based on the selection of reactions that were offered, social and behavioral science respondents had the strongest reaction to cheating, compared to the other disciplines. There were two respondents who indicated that they would do nothing, even when they were convinced that a student cheated. This shows that most faculty in the study are inclined to take action once they have evidence of cheating, but that factors, such as bureaucratic barriers, lack of time or understanding of personal responsibility may deter them from taking any action at all.

Strategies to safeguard integrity. The response by faculty to different types of cheating varied, and the results indicated that almost all faculty (n = 60) with the exception of two indicated that they would take action. Failing the students for the test or assignment is the most likely reaction, as indicated by 61.6% of respondents. Correa (2011) claimed that enforcement of integrity policy helps to increase the institution's credibility, but as his study showed instructors would rather handle issues of dishonesty on their own than follow the policy which may include referring the student to the chair, director or dean of students. Focus group members for this research study stated that there may also be a difference in understanding of the policies between part-time and full-time faculty. Hudd et al. (2009) mentioned that part-time faculty's understanding of cheating differs and their strategies to combat cheating will differ as a result.

Plagiarism detection software, like TurnItIn.com was indicated as being widely used by faculty, and most stated that they provide their students with information about dishonesty and change their exams regularly. Other strategies cited to prevent cheating

include, but are not limited to, handing out different exam versions and using on-campus proctored testing centers. There appears to be a lack of awareness among faculty respondents about different safeguards that are available. In the focus group conversation it was revealed that there was misunderstanding of how some safeguards work. Additionally, respondents indicated that there is a lack of trust in some of the technology used as safeguards: Some Learning Management Systems do not include plagiarism software for their discussion feature, while the software is available in assignments. As a result, faculty may not be able to utilize the software even when they are familiar with it. The cost of off-campus proctored testing and webcam-proctored exams was mentioned as a deterrent. Three focus group members indicated that they no longer give exams or they no longer base the students' grades on results of high stakes exams.

Suggested safeguards. Three focus group members indicated that they no longer give exams or they no longer base the students' grades on results of high stakes exams. Safeguards that were mentioned by other focus group members are providing information about cheating/plagiarism on the course outline or assignment sheet, handing out different versions of the exam and using password-protected exams.

In the literature, there are different safeguards to protect online course integrity, which have reportedly been used successfully:

1. Faculty should establish rapport with their students so they can recognize patterns of cheating when it occurs (Moten et al., 2013). One of the focus group members no longer gives tests, but gives assignments instead, with the goal of building rapport with the students. Survey respondents indicated a preference to have conversations with their students to discuss honesty and integrity, as well as the student's obligations

regarding integrity. This may aid in building rapport.

2. Faculty should use multiple versions of exams (Moten et al., 2013). More than 35% of survey respondents indicated that they already use multiple versions of exams and focus group members mentioned doing the same. One respondent suggested that each student should have a different version of the test.

3. Faculty should require signed dishonesty statements from students (Moten et al., 2013) and the college should add academic integrity policy to the syllabus (Jones, 2011). Focus group members discussed that this feature is currently available at their institution. Focus group members discussed that their syllabi often include statements about academic integrity. Perhaps requiring the students to sign the dishonestly statement separately will reduce cheating. Since 73.3% of survey respondents indicated that they provide information regarding dishonesty in their syllabus, they could include the dishonesty statement recommended by Moten et al. (2013).

4. Faculty should make use of proctored exams (Harkins & Kubik, 2010; Lieber, 2012; Moten et al., 2013). When off-campus exams are administered, faculty should utilize reputable testing centers like the NCTA (Baron & Crooks, 2005). While more than a third of survey respondents utilize on-campus testing centers, only 15.9% indicated that they use off-campus testing centers.

5. The instructor can be added to the class roster under a fictitious name (Moten et al., 2013). This option was not discussed among focus group members, nor was there a question on the survey that addressed it.

6. Faculty should provide clear guidelines on cheating. They should explain different forms of cheating to students to clear up misunderstandings (Cole & Swartz,

2013; Harkins & Kubik, 2010). The survey results demonstrated how faculty are not in agreement about the classification of cheating of different types of dishonesty. Clarification of the guidelines should clear up misunderstandings for faculty and students alike.

7. Faculty should develop a clear honor code and enforce it (Patnaude, 2008). The development of an honor code was not addressed in the survey. It was clear that faculty had different ideas on how they should deal with cheating, but enforcement has been inconsistent. Additionally, it was mentioned during the focus group meeting that following up is time-consuming, which makes buy-in difficult.

8. Faculty should make assignments challenging and intriguing to spark the students' interest and enthusiasm (Kohn, 1999). A survey respondent offered the suggestion of incorporating more higher-order thinking questions and application type questions on exams.

9. Faculty should utilize positive peer pressure (McCabe et al., 2012; Sendag et al., 2012). This option was not discussed by the focus group members, nor was there a question on the survey that addressed it.

10. Faculty should commit to combating dishonesty and following through with the institutional guidelines (Correa, 2011; Thakkar, 2012; Thomas & De Bruin, 2012). Survey respondents and focus group members expressed uncertainty about their colleagues' commitment to the institutional guidelines.

11. There should be college-wide consistency in handling dishonesty (Thomas & De Bruin, 2012). Most survey respondents failed the student for the test or assignment they cheated on, but the responses were very inconsistent and a few respondents admitted

doing nothing at all.

12. The college should institute a required orientation module that covers academic integrity (Williams et al., 2012). Focus group members discussed that such orientation is already required in their courses. It was not addressed in the survey by survey respondents.

13. Faculty should use webcams (Cole & Swartz, 2013) or other remote monitoring devices such as SeCOnE (Jung & Yeom, 2009). Twenty five percent of survey respondents expressed an interest in the webcam option, while some faculty indicated that they already use it. Others expressed their concern about the cost associated with its use.

14. Faculty should require an increased number of written assignments (Cole & Swartz, 2013). One focus group member identified written assignments as the preferred method of assessing students. A survey respondent mentioned that written assignments are being used.

15. Faculty should use the screen-lock option to prevent the student from minimizing the screen from its full-screen mode while a student is taking an exam (Cole & Swartz, 2013). No respondents addressed this issue.

16. Faculty should use plagiarism detection software like SafeAssign, WriteCheck.com, Duplichecker.com, or Turnitin, iThenticate, Integriguard (Baron & Crooks, 2005; Heckler et al., 2013; Jones, 2011; Moten et al., 2013; Patel et al., 2011; Simonson et al., 2012). Almost 60% of survey respondents indicated that they already use such software and almost 40% indicated their desire to use it. During their discussion, focus group members shared that the software is very effective, but they expressed

concern that in some Learning Management Systems, the software is not available for discussions, only for assignments. Survey respondents expressed desire for access to this safeguard in their courses.

17. Faculty should use Google to search for exact sentence copies (Baron & Crooks, 2005; Farnsworth & Bevis, 2006). Although this method was not specifically addressed in the survey, one focus group member spoke about the effectiveness of this method and felt that it is as effective as plagiarism detection software.

The research about safeguards offered additional options, which were not part of this study. Future research in this area could focus on these methods and evaluate their effectiveness:

1. Faculty should limit time on exams (Cole & Swartz, 2013).
2. Faculty should use Skype or other synchronous tools for oral examinations (Cole & Swartz, 2013).
3. Faculty should compare the students' writing to other writing they submitted via email or discussions (Davis et al., 2009; Farnsworth & Bevis, 2006)
4. Faculty should require unlocked documents for submission so document can be scanned through plagiarism detection program (Patel et al., 2011).
5. Faculty should look out for tricks, like transparent dots that are placed between words (Patel et al., 2011).
6. Faculty should use portfolios to establish a writing baseline (Baron & Crooks, 2005).
7. Faculty should implement projects and assignments which require high teacher-student and student-student interaction (Baron & Crooks, 2005; Prince et al.,

2009).

8. Faculty should include students in assignment design and topic design for discussions (Prince et al., 2009).

9. Faculty should limit multiple-choice questions on exams and replace them with critical thinking essay questions (Baron & Crooks, 2005).

10. Faculty should implement regular student conferencing (Moeck, 2002).

11. Faculty should require students to use tutors, as their relationship might deter cheating (Baron & Crooks, 2005).

12. Faculty should use biometrics to verify students' identities (Baron & Crooks, 2005).

Institutional code of conduct. Faculty in the study were made aware of their institutional integrity policy via different avenues. Each of the institutions' code of conduct highlights the steps faculty must take in case of a breach, which includes referral to the Dean of students (Broward College, n.d.-b; Palm Beach State College, 2013b). The policy at one of the three institutions requires that faculty members determine the extent of cheating and implement the appropriate punishment accordingly (Santa Fe College, n.d.-b). The sources selected by the majority of respondents in respect to cheating policy were the faculty handbook (61.8%) and the college's orientation program (41.2%). Focus group members mentioned that part-time faculty may not fully understand their role as they're only on campus briefly to teach their classes. They may not have been given detailed information regarding what cheating is and how they are required to follow up, should cheating be detected. The discussion also revealed that some part-time faculty may work at multiple institutions, each with its own policy. This may lead to further

confusion. Additionally, there seem to be departmental differences on how dishonesty is dealt with. Hudd et al. (2009) showed that the difference in perception of what cheating entails is an issue that should be addressed. Their study confirmed the perception of focus group members regarding the lack of understanding regarding policies and enforcement, due to the short time spent on campus.

The main reason for this lack of understanding, indicated by 84.2% of survey respondents (n = 32), was lack of proof. The focus group members also discussed their reasons for ignoring cheating when it occurred, citing lack of proof as the main reason why they failed to follow up. Thomas and De Bruin (2012) wrote about the lack of proof and heavy workload as reasons why faculty fail to follow up on cheating. The departmental differences were also highlighted by Thomas and De Bruin as a genuine issue that hinders the enforcement of the school's policy. Nonetheless, the chi squares analysis showed no significant difference between respondents from different departments and their reaction to teaching.

Desired support to lower cheating. The selections made by respondents for additional safeguards against cheating revealed that faculty either (a) do not have the safeguards available, (b) are unaware that the safeguards are already available through their institution, (c) do not use some of the available safeguards because they are unaware or unsure of how they can deter or detect dishonesty, and (d) lack commitment or desire to safeguard their courses.

The survey respondents were asked which additional safeguards they would employ if they were available. The answers in rank order, starting with the most desired safeguard were: (1) Plagiarism detection software, like Turnitin.com was the most widely

selected choice of safeguards (50%), (2) password protected exams (35.6%), (3) secure exam browser lockdown (32.7%), (4) at home webcam computer proctor (31.7%), (5) off-campus proctored testing center (17.3%).

Other safeguards mentioned by faculty are (1) different version of the test for each student, (2) time frame for completion thus providing time to cheat once test started, (3) change the test or generate random test questions, (4) large data base of questions, (5) the structure of the class can reduce cheating greatly, (6) multiple, smaller assignments that ask for written explanations, (7) higher-order thinking and application exams versus recall of information.

Focus group members added that the off-site proctored testing and webcam-proctored testing are desirable methods, but the cost for use is deemed too high and deters faculty form using those options. Their desire was to see the cost lowered.

Perceptions of acceptance of institutional measures to prevent cheating. Faculty were asked "To what degree do instructional college faculty perceive the acceptance of the use of institutional measures to prevent online cheating?" Survey respondents rated faculty's support of institutional policies with a mode of 5 (very high) and a median of 4 (high). One indicator that the policy is accepted is that faculty widely publishes this integrity policy in their syllabus. Another indicator of the acceptance is by the enforcement of the policies by taking action when a student is caught cheating. While the action by the faculty varies, they indicated that their action included giving the student a failing grade for the exam or assignment. Institutions that have an institutional policy in place are likely to include the steps to follow once cheating is detected. Focus group members were not confident about the handling of cases that were referred to the

dean. Pincus and Schmelkin (2003) stressed the importance of clarity of institutional policies and steps required by faculty. When faculty feel that they lack support from administration, they will be less likely to take enforcement seriously (Correa, 2011).

Conclusions

Speculation regarding cheating in online classes has prompted pressure by the Obama Administration on institutions to increase their efforts of authenticating that students are indeed doing the required work (Higher Education Opportunity Act, 2008). Accreditation within higher education depends on adherence to policies, which include specific language about dishonesty online. The policy statement of the SACS, one of the accrediting bodies used in Florida, provided guidelines in this regard, which include the use of proctored environments for examinations and verification of the students' identity (SACS, 2010). This research study sought to find out how online faculty perceive the instance of cheating and to what extent they take action when cheating is detected. The idea that cheating is more common in the online environment than it is face-to-face is inconclusive (e.g., Grijalva et al., 2010; Klor de Alva, 2011; Krsak, 2007; Watson & Sottile, 2010). Cheating online is an ongoing problem, however, and institutions often have integrity policies in place, which provide guidelines on how to proceed once cheating is detected. Participants in this study indicated that the faculty handbook is commonly where they find out about such guidelines. The problem is that not everyone is aware of the guidelines and there are variations between departments on enforcement of institutional policies. The research study showed that when there is evidence of cheating, most faculty fail the student for the particular exam or assignment. Cheating is sometimes ignored because of bureaucratic red tape or the time it takes to follow through with the

institutional procedures.

Plagiarism was identified as the type of cheating that is most commonly detected by respondents. There are many safeguards available to protect the course integrity, and plagiarism detection software, like TurnItIn, is already available in some Learning Management Systems. The software is not widely used by respondents in this study, because of lack of familiarity, mistrust of technology, or sparse availability of the tools which impedes the efforts of the faculty. There appears to be a lack of knowledge by faculty about safeguards that are available and their functionality. Lastly, part time instructors may not be aware of their responsibility to take action.

On-campus proctored testing environments are utilized more frequently than off-campus testing centers or webcam proctoring, although the use is limited. Faculty recognize the additional protection proctoring offers, but they have not shown commitment to its use. Moreover, some have expressed concern about the additional cost the student has to carry. Other faculty no longer base their grades on high stakes exams or they are unaware of any dishonest practices or the variations of cheating.

Implications

This mixed-method study confirmed that online students cheat and that many faculty lack resources and commitment to actively combat cheating. Based on the results of the study it can be concluded that uniform college-wide enforcement of the institutional integrity policy may clear up confusion for full-time and part-time faculty. Increased administrative efforts may also help to shift the direction, and these efforts should include explaining the importance of enforcement, providing professional development opportunities to teach faculty about the use and availability of safeguards.

These united efforts by administration and faculty may help to decrease the level of dishonesty, thereby avoiding scrutiny from the accrediting bodies. The reputation of the institutions will likely improve when it becomes widely known that the institution has high standards and expectations and is serious about the integrity of its courses.

Limitations

The limitations of this study are as follows:

1. The study was conducted at community colleges, where the results may be different than if it were conducted at a university. Faculty at these institutions differ, for example, in their contractual obligations and their salaries, which may be linked to their level of commitment. The student population they work with is different not only in size, but perhaps also in their level of preparedness.

2. The researcher was limited by the required protocol in regard to reaching out to the faculty. The participants were contacted by the administrators from the online department at their respective colleges. Fowler (2009) recommended phone follow up if participation was low after the email invitations were sent.

3. Possible contention between administration and faculty could have influenced the decision to participate. Faculty may not feel supported by administrators due to, for example, tensions between faculty, administrators, unions and boards. The requests to participate in the survey were sent out by administrative liaisons who may have elicited suspicion or apathy.

4. Faculty may have participated in other surveys and may have felt a sense of survey overload.

5. The survey required a 20- to 30-minute time commitment which may have

deterred some invitees. Changing the questions by making them shorter and more concise and eliminating some questions would help reduce the time of completion. For example, the question about where paraphrased information was accessed may be eliminated, as it did not provide critical information. The question regarding what constitutes cheating should be presented as one question, thereby allowing the respondent to only read each item once and selecting multiple answers.

6. The invitation letter was lengthy as it followed the required template and contained required IRB approval forms. This method was not in line with Sue and Ritter's (2007) suggestion to keep invitation letters short and inviting. Participants were offered an incentive for participation, but the incentive may have been unnoticed as it was mentioned in the participation letter. Sue and Ritter (2007) suggested the use of a flashing banner which would focus the readers' attention immediately and increase interest.

7. The population was not randomly selected, making generalization questionable. According to Fowler (2009), the sample should be randomly selected so conclusions can be generalized for the rest of the population. Respondents were solicited through the department of instructional technology at their respective institutions.

8. The low response rate resulted in a small sample size, which may have influenced the trends. Donmoyer (2008) asserted that online surveys have unique challenges, which may result in problems with generalizability and, in turn, problems with reliability due to low response. In some instances it was not possible to find trends or draw conclusions because certain questions only pertained to those respondents whose common answer led them to a follow up question thereby shrinking the pool of

respondents even further.

9. The survey was a modified version of the original AIS and so the reliability data could not be confirmed as being the same for both versions. The researcher might have improved the quality of the data analysis by testing the survey for reliability with a selected group of volunteers of college instructors who would be excluded from the actual study and then running it again a month later to measure the degree of consistency.

10. As suggested by Fowler (2009), respondents may have been concerned about the level of anonymity due to the nature of some of the survey questions. Fowler called this an interference, which potentially caused errors in the results.

11. The results of a study conducted in Florida may be different than results of a similar study in a different state.

12. Because the survey questions were delivered via Google forms, an online survey delivery program, participants did not have an opportunity to ask questions, which may have led to misinterpretation of the items on the survey and perhaps inherent bias and distortions in self-reported data.

13. There may be a potential for bias on the part of the researcher, who is a faculty member at one of the schools that was used for the survey. Fowler (2009) mentioned that the execution of a survey can lead to bias.

14. Due to a technical glitch, some initial responses were not properly recorded.

15. Finally, a limited number of safeguards was discussed in the research.

Recommendations for Future Studies

Future studies need to address the effectiveness of the different safeguards by testing them and collecting longitudinal data on their impact. The implications of

cheating in the online environment span across different areas, such as credibility of the institution and jeopardized accreditation. It is important to continue the research on the extent of cheating and the efforts to combat it.

Studying the enforcement of institutional policies will help determine whether its impact on cheating is favorable. The following data should be collected and analyzed: distribution of such policies, the clarity of required steps, and the implication on faculty who don't adhere to the policies.

A comparative study between disciplines can help clarify if attitudinal differences of faculty and students play a role. Other demographic differences, such as the number of years teaching in higher education will help determine whether faculty tenure impacts the rigor with which steps are taken to reduce cheating.

Several safeguards that were recommended by other researchers were not discussed in this study, such as the use of synchronous online class sessions, critical thinking activities and exams, limits on exam times and comparison of writing samples. A future inquiry into the effectiveness of those safeguards may give faculty a more focused approach into their efforts to combat cheating.

This study should be replicated with a larger number of colleges in order to increase the size of the sampled population and boost the representativity and generalizability.

Increased efforts to further research areas of deficiency that compromise online course integrity combined with implementation of uniform combative measures against cheating should help decrease the level of skepticism about the authenticity of those courses.

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Appendix A

McCabe Academic Integrity Survey 2010: Screen Shot of Faculty Survey

Academic Environment

Please tell us about the academic environment at Texas Tech.

1. How would you rate:	Very Low	Low	Medium	High	Very High
The severity of penalties for cheating at Texas Tech?	○	○	○	○	○
The average student's understanding of University policies concerning cheating?	○	○	○	○	○
The faculty's understanding of these policies?	○	○	○	○	○
Student support of these policies?	○	○	○	○	○
Faculty support of these policies?	○	○	○	○	○
The effectiveness of these policies?	○	○	○	○	○

2. When, if at all, do you discuss with students your policies concerning: (Check all that apply.)	Do not discuss	On individual assignments	In syllabus or course outline	At start of semester	Other	Not Relevant
Plagiarism **[PLAGPOL1 THRU PLAGPOL6]**	☐ **=1 IF CHECKED**	☐	☐	☐	☐	☐
Permitted and prohibited group work or collaboration **[COLLPOL1 THRU 6]**	☐	☐	☐	☐	☐	☐
The proper citation or referencing of sources **[ATTRPOL1 THRU ATTRPOL6]**	☐	☐	☐	☐	☐	☐
Proper citation/referencing of Internet sources **[INTRPOL1 THRU INTRPOL6]**	☐	☐	☐	☐	☐	☐
Falsifying/fabricating research data **[DATAPOL1 THRU DATAPOL6]**	☐	☐	☐	☐	☐	☐
Falsifying/fabricating lab data **[LABPOL1 THRU LABPOL6]**	☐	☐	☐	☐	☐	☐

3. Please note the primary sources from which you have learned about the academic integrity policies at Texas Tech. (Check all that apply.)

☐ Faculty orientation program. **[S_ORIENT]**	☐ Students. **[S_STUDENTS]**
☐ Faculty handbook. **[S_HNDBK}**	☐ Deans or other administrators. **[S-DEAN]**
☐ Department chair. **[S_CAHAIR]**	☐ Publicized results of judicial hearings. **[S_HERING]**
☐ Other faculty.**[S_FACULTY]**	☐ University catalog **[S_CALENDAR]**
☐ Campus website. **[S_WEBSITE]**	☐ Other: **[S_OTHER]**
☐ I have never really been informed about campus policies concerning student cheating. **[S_NOTHING]**	

4. How frequently do you think the following occur at Texas Tech?	Never	Very Seldom	Seldom/ Sometimes	Often	Very Often
Plagiarism on written assignments.	○	○	○	○	○
Students inappropriately sharing work in group assignments.	○	○	○	○	○
Cheating during tests or examinations.	○	○	○	○	○

5. How often, if ever, have you seen a student cheat during a test or examination at Texas Tech?

Never	○
Once	○
A few times	○
Several times	○
Many times	○

6. If you were convinced, even after discussion with the student, that a student had cheated on a major test or assignment in your course, what would be your most likely reaction? (Check all that apply.)

☐ Reprimand or warn the student **[RE_WARN]**	☐ Report student to the Dean of Students **[RE_DOS]**
☐ Lower the student's grade **[RE_GRADE]**	☐ Report student to your Chair, Director or Dean **[RE_REPORT]**
☐ Fail the student on the test assignment **[RE_FTEST]**	☐ Do nothing about the incident **[RE_NOTHING]**
☐ Fail the student for the course **[RE_FCOURSE]**	☐ Other _____ **[RE_OTHER]**
☐ Require student to retake test/redo assignment **[RE_REDO]**	

7. Have you ever ignored a suspected incident of cheating in one of your courses for <u>any</u> reason?

○ Yes = 1 ○ No = 2 **[IGNORE]**

If so, did any of the following factors influence your decision? (Check all that apply.)

☐ Lacked evidence/proof **[IGN_PROOF]**	☐ Student is the one who will ultimately suffer **[IGN_STUDSUFFER]**
☐ Cheating was trivial/not serious **[IGN_TRIVIAL]**	☐ Didn't want to deal with it; system is so bureaucratic **[IGN_DEAL]**
☐ Lack of support from administration **IGN-_NOSUPPORT]**	☐ Not enough time **[iIGN_NOTIME]**
☐ Other _____ **[RE_OTHER]**	

8. Have you ever referred a suspected case of cheating to your Chair, a Dean, or anyone else?

○ Yes ○ No

If yes, how satisfied were you with the way the case(s) were handled?

Very Satisfied	Satisfied	Neutral	Unsatisfied	Very unsatisfied
○	○	○	○	○

If you answered "unsatisfied" or "very unsatisfied" please explain your response.

Specific Behaviors

Students have different views on what constitutes cheating and what is acceptable behavior. We would like to ask you some questions about specific behaviors that some students might consider cheating. Please mark one response for each question.

In the RED column please mark how often, if ever, you have observed or become aware of a student in your class engaging in any of the following behaviors during the last three years. If a question does not apply to any of your courses, please check the 'Not Relevant' column. For example, if you do not use tests/exams, you would check 'Not Relevant' for questions related to tests/exams. In the BLUE column please mark how serious you think each type of behavior is.

	Never	Once	More Than Once	Not Relevant	Not Cheating	Trivial Cheating	Moderate Cheating	Serious Cheating
Fabricating or falsifying a bibliography.	○	○	○	○	○	○	○	○
Working on an assignment with others (in person) when the instructor asked for individual work.	●	●	●	●	●	●	●	●
Working on an assignment with others (via email or Instant Messaging) when the instructor asked for individual work.	○	○	○	○	○	○	○	○
Getting questions or answers from someone who has already taken a test.	●	●	●	●	●	●	●	●
In a course requiring computer work, copying another student's program rather than writing his/her own.	○	○	○	○	○	○	○	○
Helping someone else cheat on a test.	●	●	●	●	●	●	●	●
Fabricating or falsifying lab data.	○	○	○	○	○	○	○	○
Fabricating or falsifying research data.	●	●	●	●	●	●	●	●
Copying from another student during a test with his or her knowledge.	○	○	○	○	○	○	○	○
Copying from another student during a test or examination without his or her knowledge	●	●	●	●	●	●	●	●
Using digital technology (such as text messaging) to get unpermitted help from someone during a test or examination.	○	○	○	○	○	○	○	○
Receiving unpermitted help on an assignment.	●	●	●	●	●	●	●	●
Copying (by hand or in person) another student's homework.	○	○	○	○	○	○	○	○
Copying (using digital means such as Instant Messaging or email) another student's homework.	●	●	●	●	●	●	●	●

	Never	Once	More Than Once	Not Relevant	Not Cheating	Trivial Cheating	Moderate Cheating	Serious Cheating
Paraphrasing or copying a few sentences from a book, magazine, or journal (not electronic or Web-based) without footnoting them in a paper s/he submitted.	●	●	●	●	●	●	●	●
Turning in a paper from a "paper mill" (a paper written and previously submitted by another student) and claiming it as his/her own work.	○	○	○	○	○	○	○	○
Paraphrasing or copying a few sentences of material from an electronic source - e.g., the Internet - without footnoting them in a paper s/he submitted.	●	●	●	●	●	●	●	●
Submitting a paper s/he purchased or obtained from a Web site (such as www.schoolsucks.com) and claiming it as his/her own work.	○	○	○	○	○	○	○	○
Using unpermitted handwritten crib notes (or cheat sheets) during a test or exam.	●	●	●	●	●	●	●	●
Using electronic crib notes (stored in PDA, phone, or calculator) to cheat on a test or exam.	○	○	○	○	○	○	○	○
Using an electronic/digital device as an unauthorized aid during an exam.	●	●	●	●	●	●	●	●
Copying material, almost word for word, from any written source and turning it in as his/her own work.	○	○	○	○	○	○	○	○
Turning in a paper copied, at least in part, from another student's paper, whether or not the student is currently taking the same course.	●	●	●	●	●	●	●	●
Using a false or forged excuse to obtain an extension on a due date or delay taking an exam.	○	○	○	○	○	○	○	○
Turning in work done by someone else.	●	●	●	●	●	●	●	●
Cheating on a test in any other way.	○	○	○	○	○	○	○	○
	Never	Once	More Than Once	Not Relevant	Not Cheating	Trivial Cheating	Moderate Cheating	Serious Cheating

2. If you indicated above that students have paraphrased or copied material from a written or electronic source without citing it in one or more of your courses, please tell us how you believe they accessed this material: [MEANS]

Internet or other electronic means only	○ 1
Hard (paper) copies of sources only	○ 2
Primarily Internet or other electronic means	○ 3
Primarily hard (paper) copies of sources	○ 4
Have observed/suspected both methods pretty equally	○ 5

3. Have you ever offered an online test or exam at Texas Tech?	Yes	No
	○	○

3a. If you have given an online test or exam at Texas Tech, have you ever observed students who: (Check all that apply.)

Collaborated with others during an online test or exam when not permitted?	☐
Used notes or books on a closed book online test or exam?	☐
Received unauthorized help from someone on an online test or exam?	☐
Looked up information on the Internet when not permitted?	☐

4. How strongly do you agree or disagree with the following statements?

	Disagree Strongly	Disagree	Not Sure	Agree	Agree Strongly
Cheating is a serious problem at Texas Tech.	○	○	○	○	○
Our student judicial process is fair and impartial.	○	○	○	○	○
Students should be held responsible for monitoring the academic integrity of other students.	○	○	○	○	○
Faculty members are vigilant in discovering and reporting suspected cases of academic dishonesty.	○	○	○	○	○
The types of assessment used in my courses are effective at evaluating student understanding of course concepts.	○	○	○	○	○
The types of assessment used in my courses are effective at helping my students learn course concepts.	○	○	○	○	○

5. What safeguards do you employ to reduce cheating in your courses? (Check all that apply.)

☐	None. I do not use any special safeguards in my courses **[SAFE1]**
☐	Use the Internet, or software such as turnitin.com, to detect or confirm plagiarism. **[SAFE3]**
☐	Provide information about cheating/plagiarism on course outline or assignment sheet. **[SAFE4]**
☐	Change exams regularly.**[SAFE5]**
☐	Hand out different versions of an exam. **[SAFE6]**
☐	Discuss my views on the importance of honesty and academic integrity with my students. **[SAFE7]**
☐	Remind students periodically about their obligations under our University's academic integrity policy. **[SAFE8]**
☐	Closely monitor students taking a test/exam. **[SAFE11]**
☐	Other: _____ **[SAFE12]**

Demographics

1. What is your academic rank? [RANK]

Assistant Professor	○ 2
Associate Professor	○ 3
Full Professor	○ 4
Instructor	○ 1
Lab coordinator/instructor	○ 6
Other	○ 9

2. Sex:

Female	○
Male	○

3. In which of the following areas is your primary teaching responsibility? [COLLEGE]

Arts	○ 2
Business	○ 7
Communications/Journalism	○ 8
Engineering	○ 3
Humanities	○ 27
Math or Science	○ 28
Nursing/Health Professions	○ 15
Social Sciences	○ 39
Interdisciplinary	○ 97
Other	○ 98

4. How long have you been teaching at the university level? [YRSTEACH]

Less than 5 years	○ 1
5-9 years	○ 2
10-14 years	○ 3
15-19 years	○ 4
20 or more years	○ 5

Final Comments

1. Do you have any suggestions on how your campus might improve its policies concerning issues of academic integrity or any additional comments you care to make?

2. What role do you think faculty should play in promoting academic integrity and/or controlling cheating in their courses?

Thank you for participating in this survey!

Submit Form

If you are having any difficulty, please contact Don McCabe at: dmccabe@andromeda.rutgers.edu

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Appendix B

Modified Academic Integrity Survey

Modified AIS

Modified Academic Integrity Survey

Academic Environment

Please tell us about the academic environment at your institution. Please note that all responses will be part of the aggregated data and no individual responses will be released or identified with any individual.

1. How would you rate

	Very low	Low	Medium	High	Very high	No opinion
The severity of penalties for cheating in online classes at your institution	○	○	○	○	○	○
The average student's understanding of the college's policies concerning cheating in online classes?	○	○	○	○	○	○
Student support of these policies?	○	○	○	○	○	○
Faculty support of these policies?	○	○	○	○	○	○
The effectiveness of these policies?	○	○	○	○	○	○

2. When, if at all, in your online courses do you discuss with students your policies concerning: (which applies best?)

	Do not discuss	On individual assignments	In syllabus of course outline	At start of semester	Other	Not relevant
Plagiarism	○	○	○	○	○	○
Permitted and prohibited group work or collaboration	○	○	○	○	○	○
The proper citation or referencing of sources	○	○	○	○	○	○
Falsifying/fabricating research data	○	○	○	○	○	○

3. Please note the primary sources from which you have learned about the academic integrity policies at your institution (Check all that apply).

- ☐ Faculty orientation program
- ☐ Faculty handbook
- ☐ Department chair
- ☐ Other faculty
- ☐ Students
- ☐ Deans of other administrators
- ☐ Publicized results of judicial hearings
- ☐ College catalog
- ☐ I have never really been informed about campus policies concerning student cheating
- ☐ Other:

4. How frequently do you think the following occur in the online courses at your institution?

	Never	Very seldom	Seldom/sometimes	Often	Very often	No opinion
Plagiarism on writing	○	○	○	○	○	○

	Never	Very seldom	Seldom/sometimes	Often	Very often	No opinion
assignments						
Students inappropriately sharing work in group assignments	○	○	○	○	○	○
Cheating during tests or examinations	○	○	○	○	○	○

5. How often, if ever, have you seen a student cheat during an online test or examination at your institution?

- ○ Never
- ○ Once
- ○ A few times
- ○ Several times
- ○ Many times

6. If you answered anything other than Never to Question 5, please answer the following question. If you were convinced, even after discussion with the student, that a student had cheated on a major test or assignment in your online course, what would be your most likely reaction? (Check all that apply)

- ☐ Reprimand or warn the student
- ☐ Lower the student's grade
- ☐ Fail the student or the test assignment
- ☐ Fail the student for the course
- ☐ Require student to retake test/redo assignment
- ☐ Report student to the Dean of Students
- ☐ Report student to your Chair/Director or Dean
- ☐ Do nothing about the incident
- ☐ Other:

7. Have you ever ignored a suspected incident of cheating in one of your courses for any reason?

- ○ Yes
- ○ No

If you answered Yes, did any of the following influence your decision? (Check all that apply)

- ☐ Lacked evidence/proof
- ☐ Cheating was trivial/not serious
- ☐ Lack of support from administration
- ☐ Student is the one who will ultimately suffer
- ☐ Didn't want to deal with it; system is so bureaucratic
- ☐ Not enough time
- ☐ Other:

8. Have you ever referred a suspected case of cheating to your Chair, Dean, or anyone else?

- ○ Yes
- ○ No

If you answered Yes, how satisfied were you with the way the case was handled?

- ○ Very satisfied
- ○ Satisfied
- ○ Neutral
- ○ Unsatisfied
- ○ Very unsatisfied

Specific Behaviors

9. Students have different views on what constitutes cheating and that is acceptable behavior. We would like to ask you some questions about specific behaviors that some students might consider cheating. This is a two-part question. In part one, please mark how often, if ever, you have observed or become aware of a student in your class engaging in any of the following behaviors during the last three years. If a question does not apply to any of your courses, please check

the “Not Relevant” column. For example, if you do not use tests/exams, you would check “Not Relevant” for questions related to tests/exams. In part 2, you will be asked the same questions, but this time you will mark how serious you think each type of behavior is.

Part 1: How often, if ever, you have observed or become aware of a student in your class engaging in any of the following behaviors during the last three years?

	Never	Once	More than once	Not relevant
Fabricating or falsifying a bibliography in an online assignment	○	○	○	○
Working on an online assignment with others when the instructor asked for individual work.	○	○	○	○
Getting questions or answers on an online test from someone who has already taken a test	○	○	○	○
Helping someone else cheat on an online test.	○	○	○	○
Copying from another student during an online test with his or her knowledge.	○	○	○	○
Using digital technology (such as text messaging) to get unpermitted help from someone during	○	○	○	○

	Never	Once	More than once	Not relevant
an online test or assignment.				
Paraphrasing or copying a few sentences from a book, magazine or journal (not electronic or Web-based) without footnoting them in a paper s/he submitted in an online class.	○	○	○	○
Turning in a paper in an online class from a "paper mill" (a paper written and previously submitted by another student) and claiming it as his/her own work.	○	○	○	○
Using an electronic/digital device as an unauthorized aid during an exam.	○	○	○	○
Turning in a paper copied, at least in part, from another student's paper, whether or not the student is currently taking the same online course.	○	○	○	○

	Never	Once	More than once	Not relevant
Using a false or forged excuse to obtain an extension on a due date or delay taking an online exam.	○	○	○	○
Turning in work done by someone else in an online class.	○	○	○	○
Cheating on a test in an online class in any other way.	○	○	○	○

Part 2: How serious do you think each type of behavior is?

	Not cheating	Trivial cheating	Moderate cheating	Serious cheating
Fabricating or falsifying a bibliography in an online assignment	○	○	○	○
Working on an online assignment with others when the instructor asked for individual work.	○	○	○	○
Getting questions or answers on an online test from someone who has already taken a test	○	○	○	○
Helping someone else cheat on an	○	○	○	○

	Not cheating	Trivial cheating	Moderate cheating	Serious cheating
online test.				
Copying from another student during an online test with his or her knowledge.	○	○	○	○
Using digital technology (such as text messaging) to get unpermitted help from someone during an online test or assignment.	○	○	○	○
Paraphrasing or copying a few sentences from a book, magazine or journal (not electronic or Web-based) without footnoting them in a paper s/he submitted in an online class.	○	○	○	○
Turning in a paper in an online class from a "paper mill" (a paper written and previously submitted by another student) and claiming it as his/her own work.	○	○	○	○
Using an electronic/digital	○	○	○	○

	Not cheating	Trivial cheating	Moderate cheating	Serious cheating
device as an unauthorized aid during an exam.				
Turning in a paper copied, at least in part, from another student's paper, whether or not the student is currently taking the same online course.	○	○	○	○
Using a false or forged excuse to obtain an extension on a due date or delay taking an online exam.	○	○	○	○
Turning in work done by someone else in an online class.	○	○	○	○
Cheating on a test in an online class in any other way.	○	○	○	○

10. If you indicated in Question 9 that students have paraphrased or copied material from a written electronic source without citing it in one or more of your courses, please tell us how you believe they accessed this material:

- ○ Internet or other electronic means only
- ○ Hard (paper) copies or sources only
- ○ Primarily Internet or other electronic means
- ○ Primarily hard (paper) copies of sources
- ○ Have observed/suspected both methods pretty equally

11. Have you ever offered an online test or exam at your institution?

- ○ Yes
- ○ No

12. If you have answered Yes to Question 11, have you ever observed a student who: (Check all that apply)

- ☐ Collaborated with others during an online test or exam when not permitted?
- ☐ Used notes or books on a closed book online test or exam?
- ☐ Received unauthorized help from someone on an online test or exam?
- ☐ Looked up information on the Internet when not permitted?

13. How strongly do you agree or disagree with the following statements?

	Disagree strongly	Disagree	Not sure	Agree	Strongly agree
Cheating in online classes is a serious problem at this institution	○	○	○	○	○
Our student judicial process is fair and impartial	○	○	○	○	○
Students in online classes should be held responsible for monitoring the academic integrity of other students	○	○	○	○	○
Faculty members are vigilant in discovering and reporting suspected cases of	○	○	○	○	○

	Disagree strongly	Disagree	Not sure	Agree	Strongly agree
academic dishonesty in their online classes					

14. What safeguards do you employ to reduce cheating in your online courses? (Check all that apply)

- ☐ None. I do not use any special safeguards in my courses
- ☐ Use the Internet, or software such as Turnitin.com, to detect or confirm plagiarism
- ☐ Provide information about cheating/plagiarism on course outline or assignment sheet
- ☐ Change exams regularly
- ☐ Hand out different versions of an exam
- ☐ Discuss my views on the importance of honesty and academic integrity with my students
- ☐ Remind students periodically about their obligations under the institution's academic integrity policy
- ☐ Closely monitor students taking a(n) test/exam
- ☐ On-campus proctored testing center
- ☐ Off –campus proctored testing center
- ☐ At-home webcam computer proctor
- ☐ Password protected exams
- ☐ Secure exam browser lockdown
- ☐ Other: ____

15. What additional safeguards would you employ to reduce cheating in your online courses, if they were available? (Check all that apply)

- ☐ Plagiarism detection software, like TurnItIn.com
- ☐ On-campus proctored testing center
- ☐ Off –campus proctored testing center
- ☐ At-home webcam computer proctor
- ☐ Password protected exams

- ☐ Secure exam browser lockdown
- ☐ Other: _____

Demographics

-

16. How many years have you been teaching at the college level?

- ○ 0-2
- ○ 3-7
- ○ 8-12
- ○ 13 or more

17. Gender?

- ○ Male
- ○ Female

18. In which of the following areas is your primary teaching responsibility?

- ○ Arts
- ○ Business
- ○ Communication/Journalism
- ○ Engineering
- ○ Humanities
- ○ Math or Science
- ○ Nursing/Health professions
- ○ Social and behavioral sciences
- ○ Other: _____

Focus Group: The researcher will invite 8 focus group members for a one hour conversation about the survey questions. If you are interested in joining the focus group, please add your contact information to this link. Your information cannot be traced back to your survey answers.
https://docs.google.com/forms/d/1Z_zK5e4ryLjktEBUzLCysWXPmcjRnTN1BrUpglJphQU/viewform

Thank you for your participation! Please click to enter into the sweepstakes for a chance to win a $25 Amazon giftcard https://docs.google.com/forms/d/1Gxqi-F2IfpLEk4IFbaHn4SzgULSXVtXYMukHJVW6J7Y/viewform

Never submit passwords through Google Forms.

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Appendix C

Chi Square Test of the First 42 Questions

The survey was delivered via Google forms and there was a technical glitch, which disallowed the first 42 respondents from selecting multiple answers as indicated in the question. Instead, respondents could only select one answer from question 9a and one answer for 9b. Chi square test results indicate that this glitch did not significantly influence the respondents' answers when compared to subsequent submissions after the error was corrected.

Chi-Square Results: Question 9 Comparisons, First 42 Respondents vs. Remainder

Question	Chi Square	*df*	*N*	*p*
q9a1 - How often a student in my class fabricated or falsified a bibliography in an online assignment	5.62	3	121	0.13
q9b1 - How often a student in my class worked on an online assignment with others when the instructor asked for individual work	5.24	3	121	0.16
q9c1 - How often a student in my class got questions or answers on an online test from someone who had already taken a test	2.62	3	118	0.45
q9d1 - How often a student in my class helped someone else cheat on an online test	1.27	3	115	0.74
q9e1 - How often a student in my class copied from another student during an online test with his or her knowledge	4.06	3	114	0.26
q9f1 - How often a student in my class used digital technology (such as text messaging) to get unpermitted help from someone during an online test or assignment	4.19	3	114	0.24
q9g1 - How often a student in my class paraphrased or copied a few sentences from a book, magazine or journal (not electronic or Web-based) without footnoting them in a paper s/he submitted in an online class	2.34	3	113	0.50
q9h1 - How often a student in my class turned in a paper from a "paper mill" (a paper written and previously submitted by another student) and claiming it as his/her own work	3.32	3	116	0.35

q9i1 - How often a student in my class used an electronic/digital device as an unauthorized aid during an exam	2.28	3	117	0.52
q9j1 - How often a student in my class turned in a paper copied, at least in part, from another student's paper, whether or not the student in currently taking the same online course	3.41	3	115	0.33
q9k1 - How often a student in my class used a false or forged excuse to obtain an extension on a due date or delay taking an online exam	1.25	3	110	0.74
q9l1 - How often a student in my class turned in work done by someone else in an online course	0.74	3	111	0.86
q9m1 - How often a student in my class cheated in any other way	2.23	3	113	0.53