Undergraduates and Academic Dishonesty

Michelle Witherspoon, PhD
Assistant Professor
Florida Memorial University
United States of America

Nancy Maldonado, PhD
Walden University
United States of America

Candace H. Lacey, PhD
Program Professor
Nova Southeastern University
United States of America

Abstract

This study examined the frequency of engagement in academic dishonesty among undergraduate students at a large urban college and explored the use of traditional cheating methods and contemporary cheating methods to determine various forms of cheating, the number of times students cheat, and the number of ways students cheat. Primary data were collected using a modified version of the Survey on Academic Dishonesty (SAD) (McCabe, 1997). Findings revealed most students cheat occasionally, but only a small number are flagrant cheaters, who are five times more likely to cheat using contemporary methods.

Introduction

Society has communicated the concept that students need to acquire a degree for future employment, financial security, and personal reasons (Choi, 2009; Cohen & Brawer, 2003; McCabe, Butterfield, & Trevino, 2006). And students often believe they will receive higher salaries from future employers if they have exceptional grades throughout their college careers (Norton, Tilley, Newstead, & Franklyn-Stokes, 2001). Grades are important measures in society, significantly impacting the lives of students; therefore, students are under pressure (McCabe et al., 2006; Norton et al., 2001) and are extremely concerned about the grades they receive (Choi , 2009; McCabe et al., 2006; Wilkerson, 2009).

Indeed, plagiarism and cheating are reflections of the need to get good grades at all cost; and, they continue to be serious problems in academia (Danielsen, Simon, & Pavlick, 2006; Fontana, 2009; Lipka, 2009; McCabe, 2009; McCabe et al., 2006; Rosamond, 2002; Wilkerson, 2009). Gomez (2001) reported that many students tend to view cheating as a victimless crime, and students are demonstrating the application of the *no big deal phenomenon*. He further stated that "Students have taken a transactional approach to their education. . . . I give you something and you give me something" (p. 4). McCabe (2009) noted that "graduate students in general are cheating at an alarming rate, and business school students are cheating even more than others" (p.304).

He further reported that

> more than half of the nursing students, as well as approximately half of the graduate nursing students, in both the longitudinal survey and the nursing study, self-reported one or more classroom cheating behaviors [and this]is discouraging. The fact that these proportions seem to be higher than those for non-nursing students is even more disturbing. However, what may be most discouraging is the realization that these estimated rates of engagement are likely underreported and do not begin to capture the frequency with which these behaviors truly occur. (para. 37)

Furthermore, technology has created easier and simpler ways of cheating (Dehn, 2003; Lipka, 2009; Maitland, 2007; Mayhew, Seifert, & Pascarella, 2010; McCabe, 2009; McCabe et al., 2006; Park, 2003). According to Rosamond (2002), "academic sensitivity to the nature of the plagiarism problem has been heightened in recent years by the growth in web technology and the emergence of countless internet-based enterprises that sell term papers…" (p. 171).

The problem is that not only has student demography changed, but the constant advent of new electronic devices has both magnified and affected the ways and possibly how many times that students participate in academic dishonesty in colleges and universities (Brown & Emmett, 2001; Lathrop & Foss, 2000; McCabe, 2009; McCabe et al., 2006; Park, 2003; Szabo & Underwood, 2004).

Historically, many studies have focused on traditional methodologies of cheating and plagiarism such as crib sheets, writing on the hand, submitting another classmate's paper, collaborating on assignments, and whispering the answers to a test (Diekhoff, LaBeff, Clark, Williams, Francis, & Haines, 1996; Greene & Saxe, 1992; Roach, 1998). A significant portion of research literature on academic dishonesty has focused on reporting the prevalence rates of cheating (Choi, 2009; Diekhoff et al.,1996; McCabe, 2009; McCabe, et al., 2006), while other research studies have focused on variables dealing with the cheaters' personal backgrounds (Choi, 2009; Fields, 2002; McCabe, 2009; McCabe, et al., 2006; McCabe & Trevino, 1997; Wendy, Davies, Bates, & Avellone, 2003; Straw, 2002) and demographic variables such as age, gender, employment, and discipline (Brown & Choong, 2003; Choi, 2009; Fields, 2002; Haines, Diekhoff, LaBeff, & Clark, 1986; Maitland, 2007; McCabe, 2009; McCabe, et al., 2006; Seifert, Salisbury, Pascarella, Blaich, & Goodman, 2010).

The purpose of this study was to examine the overall frequency of academic dishonesty among undergraduate students at a large urban college. The study explored the use of traditional cheating methods and contemporary cheating methods to determine the various forms of cheating, the number of times students cheat, and the number of ways students cheat.

Literature Review

Context: A Changing Society

Society has changed dramatically over the past few decades. Reflective of this change is the rise in corporate scandals such as those of BP, Enron, Worldcom, and Citigroup (Lau, 2010; Maak, 2007; Mayhew, et al., 2010; Sorkin, 2010). Corporate greed and reliance on a dishonest market, identified by Wallis (2010) as the "yacht culture," has gained such traction that the division between rich and poor in the United States is growing at alarming rates. For instance,

> The family of Wal-Mart's founder, Sam Walton, is estimated to be worth $90 billion. That level of wealth in *just one family* is roughly equivalent to the $95 billion in wealth of the bottom 40 percent of Americans, all 120 million of them. The nation's wealthiest 1 per cent have more than doubled their share of national wealth. That top 1 per cent now controls over one-third of the nation's wealth, more than the bottom 90 per cent combined. (Wallis, 2010, p. 86)

In addition, dishonest behavior of well-known political and religious figures, as well as various acts of misconduct within the system of higher education (Boehm, Justice, & Weeks, 2009; Berrone, Surroca, & Tribó, 2007; McCabe, 2009) have all contributed to students finding it easier to provide justification for academic dishonesty behavior (i.e., plagiarism, cheating) (Blankenship & Whitley, 2000; Gomez, 2001; Nath & Lovaglia, 2009; Nonis & Swift, 2001; Petress, 2003; Smith & Davis, 2003).

The Problem of Cheating

Cheating is an institutional and societal problem. And academic dishonesty is more detrimental to the educational community than stakeholders realize because it affects faculty, students, and administration (Boehm, et al., 2009; Decoo, 2002; Fontana, 2009; Lipka, 2009; Rosamond, 2002; Wilkerson, 2009). For example, Boehm, et al. (2009) explained this issue by stating: "Academic dishonesty costs institutions administrative time, loss of integrity within the school, and student lack of respect for ethics and values. Faculty members point to a failure of institutional leadership to establish integrity standards and practices across campus" (para.10).

> Danielsen et al. (2006), in their discussion of a culture of cheating, noted that
> One might assume that cheating among medical, physician assistant (PA), and nursing students would be significantly lower than that among undergraduates— that professions that are viewed as highly ethical would be expected to attract students with strong codes of personal ethics. However, this does not always appear to be the case. (p. 23)

Unfortunately, cheating is found in a variety of programs. For instance, Hegmann (2008) conducted a study about cheating involving physician assistant students' process of logging patient information and noted that 50% self-reported some type of cheating and 90% indicated they believed their classmates cheated.

In another discipline, Muhney, Gutmann, Schneiderman, DeWald, McCann, and Campbell (2008) found that 86.5% of graduating dental hygiene students had cheated in some form during their studies. Fontana (2009) reported that "research has positively linked unethical classroom behaviors with unethical clinical behaviors…[and] has suggested students who cheat may go on to endanger the health and safety of their patients" (para. 4). Decoo (2002) argued that there is a whole world of cheating and plagiarism, which will necessitate the development of specific regulations for students who cheat via contemporary technology. However, academic authorities have often either ignored or failed to include academic dishonesty policies and ethics courses that are directed or specifically geared toward information and communication technologies (Lipka, 2009; Moeck, 2002). In addition, cheating and unethical behaviors are often tolerated by administrators and faculty who are concerned about their reputations as well as the associated stress involved in the university processes (Boehm, et al., 2009; Danielsen, et al., 2006). Wilkerson (2009) explained that there is another issue to consider: staff and students have different perceptions about cheating and plagiarism.

Traditional Cheating Methods

Traditional cheating methods include cheating inside of the classroom, cheating outside of the classroom, and plagiarism (Choi, 2009; Diekhoff et al., 1996; Greene & Saxe, 1992; Grijalva, Nowell, & Kerkvliet, 2006; Lipka, 2009; McCabe, 2009; McCabe, et al., 2006; Nate & Lovaglia, 2009; Power, 2009; Sutton, 1991).

Cheating inside the classroom. A number of articles have focused on traditional forms of cheating and plagiarism (Choi, 2009; Diekhoff et al., 1996; McCabe, 2009; Nate & Lovaglia, 2009; Power, 2009; Roach, 1998). Pullen, Ortloff, Casey, and Payne (2000) analyzed students' discarded cheat sheets and found similarities in the layout of the information included on students' notes after the documents were cross-referenced. Others extended the range of cheating behaviors within the classroom, which include stealing a test, lying to an instructor to get more time for an assignment, falsifying lab data, taking an exam for a classmate, and having a friend forge one's name on an attendance sheet (Choi, 2009; Danielsen, et al., 2006; Greene & Saxe, 1992; McCabe, 2009; Power, 2009).

A significant number of researchers have found that cheating on examinations was reported in higher proportions than in other situations and behaviors (Barnett & Dalton, 1981; Bowers, 1964; Choi, 2009; McCabe, et al., 2006; Nate & Lovaglia, 2006; Powers, 2009). Barnett and Dalton (1981) found that out of seven cheating behaviors, cheating on examinations was more frequently cited, and Bowers (1964) found that cheating on exams accounted for 59% of reported incidents. Eve and Bromley (1981) reported that 43% of students were found to be either giving another student answers or copying answers from another student during an exam. McCabe et al. (2006) explained that students expect faculty members to "avoid creating cheating opportunities" and indicated one student said, "A professor should never use the same exam twice" (p. 301). Szakacs (2005) noted that some students steal examinations to sell the answers to their peers.

Cheating outside the classroom. Writing or providing a paper for another student, copying homework, copying a friend's computer program, working on an assignment with others when the instructor asked for individual work, failing to report cheating by others, non-attribution, and purchasing a paper someone else wrote were common examples of cheating behaviors outside of the classroom (Greene & Saxe, 1992; Grijalva et al., 2006; Lipka, 2009; McCabe, 2009; Sutton, 1991; Wilkerson, 2009). However, these methods have often been overlapped and could be placed under the more specific topic of plagiarism.

Plagiarism. Larkham and Manns (2002) and Moeck (2002) indicated that cheating often is identified as plagiarism. However, of all cheating behaviors, plagiarism is identified as being a particular source of confusion (Brandt, 2002; Brown & Howell, 2001; Buranen, 2009; Franklyn-Stokes & Newstead, 1995; Park, 2003; Rosamond, 2002; Thompson, 2005). Rosamond (2002) believed that two developments prompted colleges and universities to address the issue of academic plagiarism. First, in the United Kingdom, universities had to start refining their regulations and policies for dealing with academic misdemeanors to meet the quality management expectations and the demands of external auditing (Rosamond, 2002). In addition, online businesses selling ready-made term papers and customized research has heightened dishonesty outside of the classroom (Maitland, 2007; Nate & Lovaglia, 2009; Rosamond, 2002). Brandt (2002) found that students plagiarized in four distinct ways. The methods included a) stealing material from another source and passing it off as their own (e.g., buying a paper from an essay bank or term paper mill, copying a whole paper from a source without proper acknowledgement, and submitting another student's work);

b) submitting a paper written by someone else (e.g., a peer or relative) and passing it off as one's own; c) copying sections of material from one or more sources and deleting the full reference; and d) paraphrasing material from one or more source(s) without providing appropriate documentation. Clement (2001) categorized plagiarism into three models (i.e., the hidden source, the source without an exact page number, and cut and paste).

Wilkerson (2009) discussed certain characteristics that might explain why students decide not to plagiarize. These include "attitudes towards plagiarism based on peer influences and religious and ethical positions; fear of failure or penalties if caught; and the intensity of institutional anti-plagiarism activities" (p. 99). However, Power's (2009) study provided some answers for why students decide to cheat:

> It is easy to do; they are confident they won't get caught; laziness (usually attributed to others); there is no victim; an assignment is deemed busywork; they don't like or don't understand the class or topic; they feel pressured for grades; they procrastinate; they don't know how to avoid it; they are unaware that they are plagiarizing; they have a sense that plagiarism in school is more acceptable than in the real world; they lack the ability to rephrase; and finally, they feel the professor didn't give enough time to complete the assignment. (para. 28)

Rosamond (2002) remarked that there has been no conclusive way to ascertain whether plagiarism among students is more dominant now than in the past. Park (2003) indicated that plagiarism covers a large scope in academia and occurs in a variety of settings: collaboration between students working together, undergraduates copying other people's work without proper acknowledgment of the original source, and Master's students and PhD students falsifying thesis papers.

Contemporary Cheating Methods

College students have often used contemporary cheating methods (Danielsen, et al., 2006; Dehn, 2003; Dawkins, 2004; Hansen, 2003; Maitland, 2007; McCabe, 2009; McCabe, et al., 2006; Szabo & Underwood, 2004; Thompson, 2005; Underwood & Szabo, 2003). Thompson (2005) found that the growth of research-writing firms online has expanded incidents of plagiarism and has made higher education more aware of the issue. Hansen (2003) reported that 38% of students admitted to plagiarizing using conventional sources while 40% plagiarized from the Internet. Szabo and Underwood (2004) investigated the attitudes and beliefs of 291 science students and found that 50% of them indicated an acceptance of using the Internet to cheat. McCabe (2009) noted that "of a total of 87 undergraduate nursing and health sciences students who acknowledged they had engaged in plagiarism.…Eighty-seven percent of these students indicated that the Internet was the exclusive or primary mechanism they use to access plagiarized material" (para. 23). Maitland (2007), in a discussion of disturbing trends on dental education, indicated that "students confidentially report widespread use of electronic technology in dishonest ventures to circumvent test integrity, to plagiarize documents, to falsify clinical records, to attempt to alter grades and to share information meant to be secure and confidential" (para. 7).

Many technological tools appear to control society because they allow people to communicate more effectively (Yates & Maanen, 2001), but as the aforementioned instances suggest, technologies are often misused by students. For example, the information and communication technologies that have been misused by students to cheat in higher education include computers via the Internet, calculators, cell phones, and Personal Data Assistants (PDAs) (Boehm, et al., 2009; Choi, 2009; Danielsen, et al., 2006; Grijalva, et al., 2006; Maitland, 2007; McCabe, 2009; McCabe, et al., 2006; Read, 2004; Richardson, 2002; Walker, 2004). The Internet, PDAs, high-tech calculators, cell phones, and other technological advances have caused student cheating to become less difficult and more frequent than it has been in past years (Boehm, et al., 2009; Choi, 2009; Danielsen, et al., 2006; Lathrop & Foss, 2000; Maitland, 2007).

Computers and the Internet. The computer and more so, the Internet, is an example of how technological advances in society have been intertwined into formal educational processes and teaching pedagogies. Most students use the Internet to download information via the computer. Researchers have found that the computer, and/or the Internet, has been the most misused technology in academia (Boehm, et al., 2009; Hansen, 2003; McCabe, 2009; Park, 2003; Roach, 2001; Szabo & Underwood, 2004; Wood, 2004). In addition, Roach (2001) explained that online education has many administrators, faculty, and accreditors worried about issues pertaining to anonymity and academic integrity. Underwood and Szabo (2003) argued that information and communication technologies have made academic dishonesty easier. However, the researchers maintained that contemporary methods of cheating may not have resulted in increased incidence.

This is a difficult statement to grasp since Stebelman (1998) found that students have found a seductive genre for cheating. Students have been using search engines like AltaVista to acquire translation software, which takes the original document downloaded from the Internet that may have been retrieved in French, Italian, German, or Latin, and translates into English, thus making plagiarism harder to trace (Stebelman, 1998). And Scott, as cited in Boehm, et al. (2009) indicated that many administrators believe the Internet is the primary cause for increased academic dishonesty.

Personal data assistants (PDAs). PDAs, or mini-computers that fit in the palm of the hand, allow students to store entire databases and spreadsheets and provide ways for students to cheat (Boehm, et al., 2009; Choi, 2009; Gomez, 2001; Maitland, 2007; Richardson, 2002). The PDA, or palm-pilot, functions like a personal computer (PC). More advanced PDAs are an integration of three-way wireless (i.e., computer, phone, and camera) and use a combination of information and communication technologies (Hewlett Packard Company, 2005).

Cell phones. Yates and Maanen (2001) reported that cell phones have changed institutions of higher education; these devices have been used for illegitimate means, or counter appropriated. The act of *counter appropriation* is defined by Yates and Maanen (2001) as "a secret or modified use of a technology to undermine dominant meanings" (p. 214). As communicated in the article, *Your Cheating Phone* (2004), it was determined that as cell phones become more complex, they increase the probabilities for deception.

Gomez (2001) attested that "cell phones have brought copying homework and sharing test answers to a new level, since they have made communicating between classes so easy" (p. 3). Students are using cell phones for text messaging answers to their classmates as well as using the camera device on cell phones to take pictures of their exams to keep or email to their friends (Boehm, et al., 2009; *Cell phones, handy tools for emergency alerts*, 2008; Choi, 2009; Gomez, 2001; Maitland, 2007; Read, 2004; Richardson, 2002; Walker, 2004).

Students are using their Web-connected cellular phones to find answers during the examination and are using instant messaging for communication (Heyman et al., 2005; Richardson, 2002), which caused some professors to permanently ban electronic devices from their classrooms (Read, 2004). Other students have taken pictures of their study guide, saved it in their phone, only to access it later during the test. Taking pictures of a test is a new form of cheating that is relatively easy (Gomez, 2001; Heyman et al., 2005; Read, 2004; Richardson, 2002; Walker, 2004).

Implications of Academic Dishonesty

The educational implications of academic dishonesty are still relatively new (Dawkins, 2004; Lipka, 2009; Read, 2004). McCabe, founder of the Center for Academic Integrity (2005), who is associated with the computer software program Turnitin.com, brought the issue to the forefront after reporting about contemporary strategies that high school and college students use to cheat on a televised news investigation. Read (2004) warned educators that many technological instruments may be high-tech cheat sheets as opposed to merely being classroom distractions. Constant scrutiny of these devices will be needed in the future (Read, 2004). Moral and ethical instruction (Gaudiani, 1999; Langlois & Lapointe, 2010; Lau, 2010, Mayhew, et. al., 2010) regarding the use of information and communication technologies and the creation of a "culture of integrity and responsibility" (McCabe, et al., 2006, p. 302) have also become a concern of colleges and universities, especially as more institutions of higher education become dependent on technology. Dawkins (2004) asserted that these "escalating incidents of hi-tech cheating have introduced new concerns to the growing list of challenges to academic integrity" (p. 117).

The research questions used to guide the study follow. What is the overall frequency of engagement in academic dishonesty using traditional cheating methods and contemporary cheating methods among undergraduate students at a large-scale college? What are the ways and frequency of student cheating via traditional cheating methods and contemporary cheating methods?

Methods

Data Collection and Analysis

Participants. The researchers obtained IRB approval and subsequent access to potential participants by contacting college authorities. A power analysis was used to determine the sample size that would be minimally necessary to detect a moderate effect size. The convenience sample was comprised of 186 undergraduate students enrolled in 11 general education courses open to all majors at one campus of the large, urban college.

The college community was well-equipped technologically which provided reasons why this student population would be a suitable sample for the current investigation.

Instrument. The survey used was a modified version of the Survey on Academic Dishonesty (SAD) (1997). Many of the SAD items were either directly or partially modified, with the consent of the author, McCabe, or the questions were newly created by the researchers based on the review of the literature. Nine questions were used from the original SAD, and 15 new questions were created for the current study. The researchers updated items on the instrument to include more contemporary questions regarding the use of information and communication technologies. Reliability of the survey instrument was measured using Cronbach's Coefficient Alpha; computations were produced during the pilot test and on the final survey instrument. Overall, all of the values were at or above the acceptable consistency levels that were set forth for the investigation. The scores ranged from .80-.85.

Academic dishonesty was measured by students' self-reported responses to various cheating behaviors that they had engaged in over the past year. The cheating index covered general domains of academic dishonesty -- traditional cheating behaviors and contemporary cheating behaviors (See Appendix). For each method, 12 items identified different ways to cheat and questioned the respondents about the frequency of cheating in each of these 12 ways of cheating. For each method, the variable number of ways of cheating was defined as the count of the number of items for which the respondent reported cheating at least once and potentially ranged from 0 to 12. For both methods of cheating, a Likert Scale coded from 0 to 3 was used, with 0 indicating Never, 1 indicating Once, 2 indicating Two to Five Times, and 3 indicating More than 5 Times. For each method, the minimum number of times cheating was calculated.

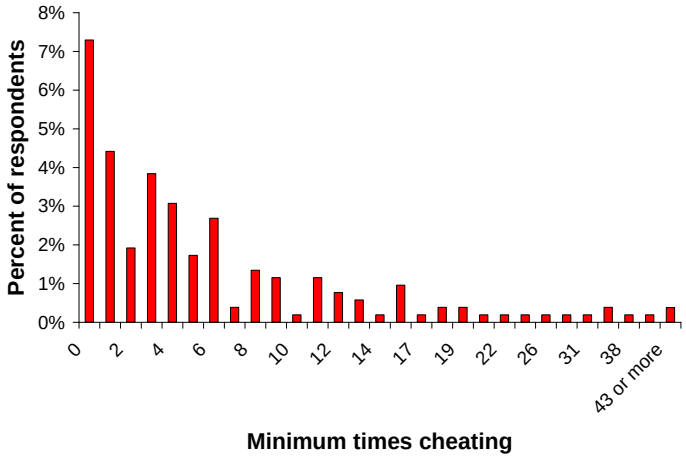
Analysis. Paired t-test were conducted to compare each respondent's traditional versus contemporary cheating behavior and to determine if frequency rates differed based on the ways and times that students cheated.

Results

Overall, the findings revealed that 20.3% of the respondents in this study did not admit to engaging in academic dishonesty, although 79.7% of the respondents self-reported that they had cheated at least once while enrolled in college. Findings revealed that most students cheat occasionally, but only a small minority are flagrant cheaters; and, these flagrant cheaters are five times more likely to be cheating via contemporary methods. The Figure below shows the frequency of distribution for the minimum number of times respondents cheated.

A paired-samples *t* test was conducted to determine if there were differences between the frequency of cheating by traditional methods and the frequency of cheating by contemporary methods (Table). This included both the number of ways of cheating and the minimum number of times of cheating. The test for the number of ways of cheating was significant, $t\ (181) = 9.66$, $p < .001$. Students cheated more ways using the contemporary methods ($M = 2.90$, $SD = 2.88$) than the traditional methods ($M = 1.35$, $SD = 2.41$). The eta square index indicated that 8% of the variance in the number of ways cheating was accounted for by the method of cheating.

Figure: Minimum number of times cheating by either method.



The test for the minimum number of times cheating was significant, t (181) = 7.54, $p < .001$. Students cheated more times using the contemporary methods (M = 4.75, SD = 7.51) than the traditional methods (M = 2.10, SD = 5.94). The eta square index indicated that 4% of the variance in the minimum number of times cheating was accounted for by the method of cheating.

Table : *Differences in Frequency of Cheating Between Matched Groups Who Used Traditional or Contemporary Methods of Cheating*

	Traditional		Contemporary		
Cheating measure	*M*	*SD*	*M*	*SD*	*t* (181)
Ways of cheating	1.35	2.41	2.90	2.88	9.66***
Times of cheating	2.10	5.94	4.75	7.51	7.54***

***$p < .001$

An additional finding was that the minimum number of times cheating by traditional methods was highly correlated with the minimum number of times cheating by contemporary methods, $r = .78$, $p < .001$. Also the number of ways of cheating by traditional methods was highly correlated with the number of ways of cheating by contemporary methods, $r = .68$, $p < .001$. This finding revealed that contemporary methods of cheating complement traditional methods, rather than substituting for them. In summary, students cheated more times and in more ways using contemporary methods, but the method of cheating predicted less than 10% of the variance in the minimum number of times cheating.

Discussion

One finding of this study is that if students cheat, they will cheat using traditional and/or contemporary cheating methods. In other words, this finding supports the inclination that cheaters will cheat using whatever happens to be available, whether it is using a piece of paper to scribble notes on a crib sheet or using a cell phone to text message or to have a picture image of an entire exam (Boehm, et al., 2009; Choi, 2009; Gomez, 2001; Maitland, 2007; Read, 2004; Richardson, 2002; Walker, 2004). These cheaters could be considered opportunists because they elect to cheat based on the available opportunities. A second finding is that while the rate of engagement in both types of cheating varied for the respondents, the data showed that respondents preferred to cheat more times and ways using contemporary cheating methods rather than traditional cheating methods. This finding supports the impact that technology has both in society and institutions of higher education (Lipka, 2009; Maitland, 2007; McCabe, 2009; McCabe, et al., 2006). A third finding was that traditional cheating occurred mostly outside of the classroom setting, and contemporary cheating occurred inside of the classroom.

Students may not cheat as much by using electronic gadgets once they become aware of the many technological resources available to academic authorities; in turn, students may be more apt to take advantage of tutoring programs, library research sessions, extracurricular activities, and study groups that promote scholarship (Buranen, 2009). Students may gain confidence in their own intellectual prowess via these positive outlets and may envision a society in which dishonesty is not the prevailing phenomena. McCabe and Makowski (2001) stated "increased student involvement in developing, disseminating, and implementing campus policies and procedures designed to address issues of student cheating" is an emerging theme (p. 17). Researchers have argued that self-regulation and self-monitoring techniques will bring about a higher level of compliance and cooperation than formal threats and sanctions (Boehm et al., 2009; McCabe & Makowski, 2001; Simon, Carr, McCullough, Morgan, Oleson, & Ressel, 2004).

Professional development opportunities might be created for faculty members, especially about technological inventions. Czubaj (2004) indicated that "cyberphobia" and "technopathology" might be treated with the proper training (p. 676). Boehm et al. (2009) added:

> Providing training, professional development, and current research about cheating to faculty members could be a positive approach in preparing faculty members to work with academic dishonesty issues. It is important for administrators to provide opportunities for faculty members to become aware of how they influence student behaviors and their responsibilities in communicating standards of ethical behavior….Developing an honor code, listing clear definitions, and providing specific examples for faculty members and students of what constitutes cheating, could set the stage for campus-wide implementation. Codes must be made available in a variety of ways such as publications, handbooks, syllabi, web pages, or other formats. (para. 33-34)

Varughese (2005) discussed ways in which Blackboard and WebCT software assessment tools have frequently been used as a form of course management. To deter students from cheating on examinations, WebCT software allows instructors to devise multiple templates that can randomly draw various questions for each test per student (Varughese, 2005). Read (2004) indicated that creating multiple versions of tests and not posting answer keys online will be one suitable solutions to cheating on examinations. Gomez (2001) also suggested that instructors require students to explain their answers and give verbal warnings before each test.

Townsley (2005) noted technology could be viewed as "being a best friend that is responsive to an individual's personal needs or it could be seen as an insidious, unfathomable, unreliable distraction" (p. 45). Smith (2003) suggested that it remains the responsibility of librarians and educators to fight academic dishonesty via "commonsense strategies that can provide a comprehensive approach to this complex problem" (p. 22). Others agree that administrators and faculty have a responsibility to promote "ethical community building" (McCabe et al., 2006, p. 302), to be role models and mentors for students (Maitland, 2007), to "role model academic integrity" and include academic honor codes (McCabe, 2009, para. 40), and to improve "strategies for helping our students to discover the importance of intellectual property and the sharing and ownership of ideas" (Power, 2009, para., 63),

Smith (2003) offered practical recommendations for stakeholders in academia such as letting students know that professors are technologically savvy, indicating that detecting plagiarism is an easy process, involving tutors or writing centers to teach paraphrasing skills, redesigning coursework by dividing major research assignments into smaller, sequential steps that lead to the finished product, and investing in anti-plagiarism software.

References

Barnett, D., & Dalton, J. (1981). Why college students cheat. *Journal of College Student Personnel, 22,* 545-551.

Berrone, P., Surroca, J., & Tribó, J. (2007). Corporate ethical identity as a determinant of firm performance: A test of the mediating role of stakeholder satisfaction. *Journal of Business Ethics, 76*(1), 35-53. doi:10.1007/s10551-006-9276-1.

Blankenship, K. L., & Whitley, B. E. (2000). Relation of general deviance to academic deviance. *Ethics & Behavior, 10* (1), 1-13.

Boehm, P., Justice, M., & Weeks, S. (2009). Promoting academic integrity in higher education. *The Community College Enterprise, 15*(1), 45-61.

Bowers, W. J. (1964). *Student dishonesty and its control in college*. New York, NY: Bureau of Applied Social Research, Columbia University.

Brandt, D. S. (2002). Copyright's (not so) little cousin, plagiarism. *Computers in Libraries, 22*(5), 39-42. Retrieved from http://www.infotoday.com.

Brown, B. S., & Choong, P. (2003). A comparison of academic dishonesty among business students in a public and private Catholic university. *Journal of Research on Christian Education, 12*(1), 27-48.

Brown, B., & Emmett, D. (2001, December). Explaining variations in the level of academic dishonesty in studies of college students: Some new evidence. *College Student Journal, 35*(4), 1-13.

Brown, V. J., & Howell, M. E. (2001). The efficacy of policy statements on plagiarism: Do they change students' views. *Research in Higher Education, 42*(1), 103-118.

Buranen, L. (2009). A safe place: The role of librarians and writing centers in addressing citation practices and plagiarism. *Knowledge Quest, 37*(3), 24-33.

Cell phones, handy tools for emergency alerts, could be used for cheating during tests. (2008, October).*The Chronicle of Higher Education, 55*(7), A.15.

Center for Academic Integrity. (2005). Retrieved fromhttp://www. academicintegrity.org/cai_research.asp>.

Choi, C. (2009). The pull of integrity. *ASEE Prism, 18*(7), 29-33.

Clement, M. J. (2001). Academic dishonesty: To be or not to be. *Journal of Criminal Justice Education, 12*(2), 253-270.

Cohen, A. M., & Brawer, F. B. (2003). *The American community college* (4th ed.). San Francisco, CA: Jossey-Bass.

Czubaj, C. (2004). Literature review: Reported educator concerns regarding cyberspace curricula. *Education, 124*(4), 676-682.

Danielsen, R. D., Simon, A. F., & Pavlick, R. (2006). The culture of cheating: From the classroom to the exam room. *Journal of Physician Assistant Education, 17(*1*),* 23-29.

Dawkins, R. L. (2004, March). Attributes and statuses of college students associated with classroom cheating on a small-sized campus. *College Student Journal, 38*(1), 116-130.

Decoo, W. (2002, February). How to break that cheating art. *Times Higher Education Supplement, 1526*, 14..

Dehn, R. (2003). Is technology contributing to academic dishonesty? *Journal of Physician Assistant Education, 14(*3*)*, 190-192.

Diekhoff, G. M., LaBeff, E. E., Clark, R. E., Williams, L. E., Francis, B., & Haines, V. J. (1996).College cheating ten years later. *Research in Higher Education, 37*, 487-502.

Eve, R., & Bromley, D. (1981). Scholastic dishonesty among college undergraduates: Parallel tests of two sociological explanations. *Youth and Society, 13*, 3-22. Retrieved from http://yas.sagepub.com.

Fields, M. U. (2002). The influence of psychological type, self-esteem, and gender on academic dishonesty of students in higher education (Doctoral dissertation, University of Florida, 2002). *Dissertation Abstracts International, 64*(03A), 737.

Fontana, J. (2009). Nursing faculty experiences of students' academic dishonesty. *Journal of Nursing Education, 48*(4), 181-5.

Franklyn-Stokes, A., & Newstead, S. (1995). Undergraduate cheating: Who does what and why. *Studies in Higher Education, 20*(2), 159-172.

Gaudiani, C. L. (1999). A call to social stewardship. *The Presidency, 2*(1), 20-25. Retrieved from Research Library. (Document ID: 49813484).

Gomez, D. (2001). Putting the shame back in student cheating. *Education Digest, 67*(4), 1-6.

Greene, A., & Saxe, L. (1992). *Everybody (else) does it: Academic cheating*. Paper presented at the annual meeting of the Eastern Psychological Association, Boston, MA.

Grijalva , Nowell, & Kervelivt (2006). Academic honesty and online courses. College Student journal, 40(1), 180-185. Retrieved from http://findarticles.com/p/articles/mi_m0FCR/is_1_40/ai_n16346361/

Haines, V. L., Diekhoff, G. M., LaBeff, E. E., & Clark, R. E. (1986). College cheating: Immaturity, lack of commitment, and the neutralizing attitude. *Research in Higher Education, 25*, 342-354. Retrieved from http://www.kluweronline.com.

Hansen, B. (2003). Combating plagiarism. *CQ Researcher, 13*, 777. Retrieved May 20, 2005,from http://FirstSearch.oclc.org.

Hegmann, T. (2008). Cheating by physician assistant students on patient encounter logs.
Journal of Physician Assistant Education, 19(2), 4-9.

Hewlett Packard Development Company (2005). *HP shopping*. Retrieved from
http://www.shopping.hp.com.

Heyman, J., Swertlow, F., Ballard, M., Barnes, S., Duffy, T., Gray, L., et al. (2005, January). Psssst…what's the answer? *People, 63*(3), 1-4.

Langlois, L., & Lapointe, C. (2010). Can ethics be learned?: Results from a three-year action-research project. *Journal of Educational Administration, 48(*2), 147.

Lau, C. L. (2010). A step forward: Ethics education matters! *Journal of Business Ethics,* 92, 565–584. doi 10.1007/s10551-009-0173-2

Larkham, P. J., & Manns, S. (2002). Plagiarism and its treatment in higher education. *Journal of Further and Higher Education, 26*(4), 339-349.

Lathrop, A., & Foss, K. (2000). *Student cheating and plagiarism in the Internet era: A wake-up call*. Englewood, CA: Libraries Unlimited, Inc.

Lipka, S. (2009, April). Colleges sharpen tactics for resolving academic-integrity cases. *The Chronicle of Higher Education, 55*(31), A20.

Maak, T. (2007). Responsible leadership, stakeholder engagement, and the emergence of social capital. *Journal of Business Ethics, 74*(4), 329-343. Retrieved from ABI/INFORM Global. (Document ID: 1348599641).

Maitland, R. (2007, September). Disturbing trends in education. *Oral Health, 97*(9), 53-54, 57.

Mayhew, M., Seifert, T., & Pascarella, E. (2010). A multi-institutional assessment of moral reasoning development among first-year students. *Review of Higher Education: Journal of the Association for the Study of Higher Education, 33*(3), 357-390. doi:10.1353/rhe.0.0153

McCabe, D. (2009). Academic dishonesty in nursing schools: An empirical investigation. *Journal of Nursing Education,* 48(11), 614-23.

McCabe, D. L., Butterfield, K. D., & Trevino, L. K. (2006). Academic dishonesty in graduate business programs: Prevalence, causes, and proposed action. *Academy of Management Learning & Education, 5*(3), 294-305.

McCabe, D., & Makowski, A. (2001, March-April). Resolving allegations of academic dishonesty: Is there a role for students to play?. *About Campus,* 17-21. Retrieved from http://web12.epnet.com.

McCabe, D. L., & Trevino, L. K. (1997). Individual and contextual influences on academic dishonesty: A multi-campus investigation. *Research in Higher Education, 38,* 379-396.

Moeck, P. G. (2002). Academic dishonesty: Cheating among community college students. *Community College Journal of Research & Practice, 26,* 479-491.

Muhney, K. A., Gutmann, M. E., Schneiderman, E., DeWald, J. P., McCann, A., Campbell, P. R., Muhney, K. A., et al. (2008). The prevalence of academic dishonesty in Texas dental hygiene programs. *Journal of Dental Education 72*(11), 1247-1260.

Nath, L., & Lovaglia, M. (2009). Cheating on multiple-choice exams: Monitoring, assessment, and an optional assignment. *College Teaching, 57*(1), 3-8.

Nonis, S., & Swift, C. O. (2001). An examination of the relationship between academic dishonesty and workforce dishonesty: A multicampus investigation. *Journal of Education for Business, 77*(2), 69-77.

Norton, L. S., Tilley, A., Newstead, S., & Franklyn-Stokes, A. (2001). *The pressures of assessment in undergraduate courses and their effect on student behaviours. Assessment & Evaluation in Higher Education, 26*(3), 269-284.

Park, C. (2003). In other (people's words: Plagiarism by university students—literature and lessons. *Assessment & Evaluation in Higher Education, 28*(5), 471-488.

Petress, K. C. (2003). Academic dishonesty: A plague on our profession. *Education, 123*(3), 624-628.

Power, L. (2009). University students' perceptions of plagiarism. *The Journal of Higher Education, 80(*6), 643.

Pullen, R., Ortloff, V., Casey, S., & Payne, J. B. (2000). Analysis of academic misconduct using unobtrusive research: A study of discarded cheat sheets. *College Student Journal, 34*(4), 616-627.

Read, B. (2004, July 16). Wired for cheating. *The Chronicle of Higher Education, 50*(45), pp. A27-A29.

Richardson, A. (2002, July). High-tech cheating: Where there's a will, there's a gadget. *Community College Week, 14*(24), 1-3.

Roach, R. (1998, December). Hi-tech cheating. *Black Issues in Higher Education, 15,* 26.

Roach, R. (2001, June). Safeguarding against online cheating. *Black Issues in Higher Education, 18*(8), 1-3.

Rosamond, B. (2002). Plagiarism, academic norms, and the governance of the profession. *Politics, 22*(3), 167-174.

Seifert, T., Salisbury, M., Pascarella, E., Blaich, C., & Goodman, K. (2010). Liberal arts colleges and good practices in undergraduate education: Additional evidence. *Journal of College Student Development, 51*(1), 1-22. Retrieved from ProQuest Psychology Journals. (Document ID: 1960507691).

Simon, C., Carr, J., McCullough, S., Morgan, S., Oleson, T., & Ressel, M. (2004, February). Gender, student perceptions, institutional commitments and academic dishonesty: Who reports in academic dishonesty cases?. *Assessment & Evaluation in Higher Education, 29*(1), 75-90.

Smith, B. (2003). Fighting cyberplagiarism. *NetConnect,* 22-23. Retrieved from http://web12.epnet.com.

Smith, L., & Davis, J. (2003). An examination of student cheating in the two-year college. *Community College Review, 31*(1), 17-34.

Sorkin, A. R. (2010, August 3). Punishing Citi, or Its Shareholders. *New York Times,* p. B.1. Retrieved from Banking Information Source. (Document ID: 2098483561).

Stebelman, S. (1998). Cybercheating: Dishonesty goes digital. *American Libraries, 29*(8), 48-51.

Straw, D. (2002, July 8). The plagiarism of generation why not. *Community College Week, 14*(24), 4-7.

Survey on Academic Dishonesty (1997).

Sutton, E. M. (1991). Undergraduate student perceptions of academic dishonesty as a function of ethnicity and religious participation. (Doctoral dissertation, Iowa State University,1991). *Dissertation Abstracts International, 52*(11A), 3839.

Szabo, A., & Underwood, J. (2004). Cybercheats: Is information and communication technology fueling academic dishonesty?. *Active Learning in Higher Education, 5*(2), 180-200.

Szakacs, J. (2005, May). A testing time. *Transitions Online*. Retrieved March 2, 2006, fromhttp://www.transitions-online.org.

Thompson, M. (2005). Hidden in plain sight. *Chronicle of Higher Education, 52*(15), p. B5.

Townsley, M. (2005, May). President to President. *Campus Technology, 18*(9), 43-46. .

Underwood, J., & Szabo, A. (2003). Academic offenses and e-learning: Individual propensities in cheating. *British Journal of Educational Technology, 34*(4), 467-477.

Varughese, J. (2005, April). Testing, testing. *University Business, 8*(4), 59-65.

Walker, M. A. (2004, September 10). High-tech cribbing: Camera phones facilitate cheating. *Wall Street Journal (Eastern Edition)*, p. B1.

Wallis, J. (2010). *Rediscovering values on wall street, main street, and your street: A moral compass for the new economy*. New York: Simon and Schuster, Inc.

Wendy, H., Davies, G., Bates, I., & Avellone, M. (2003, December). Academic dishonesty among pharmacy students. *Pharmacy Education, 3*(4), 261-269.

Wilkerson, J. (2009). Staff and student perceptions of plagiarism and cheating. *International Journal of Teaching and Learning in Higher Education,* 20(2), 98-105. Retrieved from http://www.isetl.org/ijtlhe/ ISSN 1812-9129

Wood, G. (2004). Academic original sin: Plagiarism, the Internet, and librarians. *The Journal of Academic Librarianship, 30*(3), 237-242.

Yates, J., & Maanen, J. (2001). *Information technology and organizational transformation: History, rhetoric, and practice.* Thousand Oaks, CA: Sage.

Your Cheating Phone. (2004*). Economist, 373*(8404), 15.

Appendix

Questions 1-12 asked participants about traditional cheating behaviors to ascertain whether or not they had ever engaged in the following:

1. Used crib notes, or cheat sheets, to cheat on an exam while in college
2. Copied a classmate's answers on an exam in college
3. Copied material, almost word for word, from any written source and turned it in as your own work
4. Improperly cited a reference of a written source on purpose
5. Submitted a paper, at least in part, from another student's paper, whether or not that student is currently taking the same course
6. Used a false or forged excuse to obtain an extension on a due date for an assignment or exam
7. Turned in work done by someone else
8. Cheated on an exam by illegally obtaining a copy of it before the test
9. Whispered the answers on a test to another classmate during an exam
10. Collaborated on an assignment or take-home test that you were directed to complete on an individual basis
11. Falsified or fabricated research data
12. Falsified or fabricated course lab data

Questions 13-24 asked participants about contemporary cheating behaviors to ascertain whether or not they had ever engaged in the following:

13. Used a cell phone to cheat on an exam in college
14. Text messaged answers to an exam to another classmate during the exam
15. Purchased a ready-made assignment or term paper from the Internet
16. Improperly cited a reference from the Internet on purpose
17. Plagiarized or copied and pasted an assignment from the Internet and submitted it as your own work in college
18. Used a false excuse to obtain permission to use an electronic device during class to cheat
19. Programmed math or science formulas into a calculator to cheat on a quiz or exam
20. Used a two-way pager to cheat on an exam or assignment in college
21. Used the camera accessory on a cell phone to take a picture of an exam in order to retrieve the answers during the test
22. Used a calculator to cheat on an exam in college
23. Used a Personal Data Assistant (PDA) or palm pilot to cheat on an exam
24. Downloaded information from the Internet into a PDA during an exam to retrieve answers