

Old Dominion University

ODU Digital Commons

Educational Foundations & Leadership Theses
& Dissertations

Educational Foundations & Leadership

Summer 2011

Attitudes of and Behaviors Towards Academic Integrity Between Community College Students Who Enroll in Online Courses Versus Traditional Courses

Kristine Marie Christensen
Old Dominion University

Follow this and additional works at: https://digitalcommons.odu.edu/efl_etds



Part of the [Applied Behavior Analysis Commons](#), [Educational Technology Commons](#), [Higher Education Commons](#), and the [Instructional Media Design Commons](#)

Recommended Citation

Christensen, Kristine M.. "Attitudes of and Behaviors Towards Academic Integrity Between Community College Students Who Enroll in Online Courses Versus Traditional Courses" (2011). Doctor of Philosophy (PhD), Dissertation, Educational Foundations & Leadership, Old Dominion University, DOI: 10.25777/srg9-f207
https://digitalcommons.odu.edu/efl_etds/94

This Dissertation is brought to you for free and open access by the Educational Foundations & Leadership at ODU Digital Commons. It has been accepted for inclusion in Educational Foundations & Leadership Theses & Dissertations by an authorized administrator of ODU Digital Commons. For more information, please contact digitalcommons@odu.edu.

**ATTITUDES OF AND BEHAVIORS TOWARDS ACADEMIC INTEGRITY
BETWEEN COMMUNITY COLLEGE STUDENTS WHO ENROLL IN ONLINE
COURSES VERSUS TRADITIONAL COURSES**

by

Kristine Marie Christensen
B.S. May 1997, Valparaiso University
M.B.A. August 1998, Eastern Illinois University
M.S. August 2000, Governors State University
M.S. August 2011, University of St. Francis

A Dissertation Submitted to the Faculty of
Old Dominion University in Partial Fulfillment of the
Requirements for the Degree of

DOCTOR OF PHILOSOPHY

COMMUNITY COLLEGE LEADERSHIP

OLD DOMINION UNIVERSITY
August 2011

Approved by:

Dana D. Burnett (Chair)

Linda Bol (Member)

Donald L. McCabe (Member)

ABSTRACT

ATTITUDES OF AND BEHAVIORS TOWARDS ACADEMIC INTEGRITY BETWEEN COMMUNITY COLLEGE STUDENTS WHO ENROLL IN ONLINE COURSES VERSUS TRADITIONAL COURSES

Kristine Marie Christensen
Old Dominion University, 2011
Director: Dr. Dana D. Burnett

Advances in technology have allowed educators to use new methods for delivering education, students are finding new ways to leverage technology to learn, and online course enrollments are growing at a faster rate than traditional face-to-face courses. Using McCabe's Academic Integrity Survey, data was collected from over 1,700 students enrolled in online or traditional, face-to-face courses at a large Midwestern community college during the fall of 2008. The purpose of this study was to examine whether differences in the self-reported attitudes and behaviors toward academic integrity exist between community college students enrolled in online courses and those in traditional, face-to-face learning environments. In addition, this study sought to determine whether the students' level of awareness of the institutional policies related to academic integrity and ratings of the academic integrity climate impacted students' self-reported cheating behaviors and perceived severity of those cheating behaviors and if it differed among students between the two learning environments.

Using both exploratory and confirmatory factor analysis, a five-factor model was developed and used to compare attitudes and behaviors toward academic integrity between the two learning environments. The results of the research did not reveal significant differences between the learning environments when examining the attitudes

and behaviors of student cheating but they did reveal that online students were more apprised of the college's academic integrity policy and rated the Academic Integrity Climate higher than students enrolled in traditional, face-to-face courses.

Committee Members:

Dr. Linda Bol
Dr. Donald L. McCabe

This dissertation is dedicated to my loving parents, Wesley and Kathleen Christensen. Dad, thank you for helping me keep the faith and take care of business! Mom, thank you for your encouragement and believing in me, I "Got-R-Done"!!! Thank you both for your everlasting support, guidance, and unconditional love! You have both indelibly etched the importance and value of education and life-long learning into my life.

ACKNOWLEDGEMENTS

Completing this dissertation would not have been possible without the support, guidance, and feedback provided to me by the members of my dissertation committee. I especially want to thank Dr. Dana Burnett for chairing my committee. Dana, words cannot express my appreciation for everything that you have done for me. You have kept me on track and encouraged me throughout this entire process with your can-do attitude and never-ending support. Your guidance, suggestions and feedback throughout the process have not only allowed me to write a quality dissertation but they have forever enriched my skill-sets and abilities. I count myself lucky that I was able to learn from and work with you. Thank you for being such a wonderful mentor and friend.

I also wish to thank Dr. Donald McCabe and Dr. Linda Bol. Don, thank you for agreeing to serve on my committee, allowing me to use your survey instrument, and for being supportive throughout the process. You have graciously shared your time, research, wisdom, and insights with me and I am forever grateful. I am still so excited that you agreed to serve on my committee, after all you are the Academic Integrity Guru! Linda, thank you for your guidance and feedback, especially with the statistical analysis of the study.

Completing my doctoral studies would not have been possible if it were not for my family and friends.

To my parents, you have guided, supported, and encouraged me with everything that I have set out to achieve and for that I am eternally grateful. Thank you for your encouragement when I felt frustrated, for listening when I wanted to talk, and for always believing in me - you have no idea how much that means to me!

To my twin sister Jeannine, I am thrilled that we are finishing our doctoral studies together. Even though we attended different schools and were in different programs we were able to share with and learn from one another throughout our studies. Thank you for allowing me to bounce ideas off of you, for your perspective and thoughts, sharing books and articles, and for your constant encouragement. Thank you for being my best friend and for always supporting me.

To my sister Kathy and her family, thank you for your encouragement and support. Kathy, thank you for the "Summer of Jack"! He provided a well-deserved break from studies and needed comic relief. You have a beautiful family, thank you for sharing them with us.

To my friend Rimas, thank you so much for your help and support throughout my doctoral studies. Thank you for lending your ear and listening to me as I thought out loud, for offering suggestions and advice, and for believing in me. I really appreciate everything that you have done and for your friendship. To my friends Boris and Ivan, thank you for always being there for me, helping me see the brighter side of the story, and for making me laugh when I most needed it.

There is not enough paper in the world to list everyone who has supported me throughout my studies. To my entire family, thank you so much for your love and support. I love you so much! To my work colleagues, thank you for your support and understanding. To my friends, thank you for your friendship and understanding when I needed to write papers or read articles and could not 'come out and play'.

TABLE OF CONTENTS

	Page
LIST OF TABLES.....	viii
LIST OF FIGURES	xv
INTRODUCTION	1
ACADEMIC DISHONESTY ON COMMUNITY COLLEGE CAMPUSES.....	2
PROBLEM STATEMENT	5
SIGNIFICANCE OF THE STUDY	6
RESEARCH QUESTIONS	6
METHODOLOGY	7
LIMITATIONS	8
REVIEW OF LITERATURE	10
ACADEMIC INTEGRITY	10
ACADEMIC INTEGRITY DEFINED	10
THE IMPORTANCE OF ACADEMIC INTEGRITY.....	11
ACADEMIC DISHONESTY	13
DEFINITION AND EXTENT	13
INDIVIDUAL FACTORS INFLUENCING CHEATING BEHAVIORS	15
SITUATIONAL FACTORS INFLUENCING CHEATING BEHAVIORS	23
HOW STUDENTS CHEAT.....	40
ACADEMIC DISHONESTY AND COMMUNITY COLLEGES.....	48
ONLINE LEARNING ENVIRONMENT	51
EXPANSION OF ONLINE LEARNING	52
LEARNING ENVIRONMENT COMPARED TO TRADITIONAL COURSES....	53
ONLINE INSTRUCTION IN COMMUNITY COLLEGES	55
LACK OF RESEARCH IN ONLINE LEARNING ENVIRONMENTS	57
DISAGREEMENTS IN THE RESEARCH.....	58
ACCOUNTABILITY IN THE ONLINE LEARNING ENVIRONMENT	61
SUMMARY AND HYPOTHESES	61

	Page
CONTRIBUTION OF THIS STUDY	67
METHODOLOGY	68
RESEARCH QUESTIONS	68
STUDY DESIGN	70
POPULATION AND SAMPLE.....	72
INSTRUMENTATION.....	74
RELIABILITY AND VALIDITY OF THE MCCABE ACADEMIC INTEGRITY SURVEY (M-AIS) INSTRUMENT	76
SCALES CREATED FROM THE MCCABE ACADEMIC INTEGRITY SURVEY INSTRUMENT	77
PROTECTION OF HUMAN SUBJECTS.....	80
SECONDARY DATA COLLECTION.....	80
DATA COLLECTION	81
DATA ANALYSIS	82
INTERNAL AND EXTERNAL VALIDITY OF THE STUDY	84
RESULTS	86
SAMPLE DEMOGRAPHICS.....	86
ANALYSIS OVERVIEW	90
FACTOR STRUCTURE OF MCCABE'S ACADEMIC INTEGRITY SURVEY (M-AIS).....	91
DESCRIPTIVE STATISTICS FOR ALL SCALES	99
RESULTS BY RESEARCH QUESTION	114
RESEARCH QUESTION 1	114
RESEARCH QUESTION 2	133
RESEARCH QUESTION 3	135
SUMMARY.....	143
CONCLUSION AND DISCUSSION.....	147
OVERVIEW OF THE STUDY	147

	Page
SUMMARY OF FINDINGS.....	149
ACADEMIC INTEGRITY SURVEY FACTOR STRUCTURE.....	149
LEARNING ENVIRONMENT.....	149
AGE	151
GENDER	152
PROGRAM OF STUDY	153
POLICY DISSEMINATION.....	154
ACADEMIC INTEGRITY CLIMATE	155
LIMITATIONS	156
RECOMMENDATIONS FOR FUTURE RESEARCH	157
IMPLICATIONS FOR COMMUNITY COLLEGE LEADERSHIP	159
CONCLUSION	160
REFERENCES	161
APPENDICES	180
A. ACADEMIC INTEGRITY SURVEY	181
B. PERMISSION TO USE DATA COLLECTED.....	189
C. PERMISSION TO USE SURVEY AND DATA COLLECTED	190
D. PRE-NOTICE EMAIL TO FACULTY	191
E. INFORMATIONAL LETTER TO TRADITIONAL FACULTY	192
F. INFORMATION HANDOUT TO STUDENTS ENROLLED IN TRADITIONAL COURSES	195
G. INFORMATIONAL EMAIL TO ONLINE FACULTY	196
H. ONLINE ANNOUNCEMENT IN BLACKBOARD FOR STUDENTS ENROLLED IN ONLINE COURSES	199
I. INITIAL EMAIL TO ONLINE STUDENTS	200
J. INITIAL EMAIL TO TRADITIONAL STUDENTS.....	202
K. REMINDER EMAIL TO ONLINE STUDENTS	203
L. REMINDER EMAIL TO TRADITIONAL STUDENTS.....	203
M. ITEMIZATION OF ELEMENTS FOR THE ACADEMIC ENVIRONMENT AND CHEATING BEHAVIOR SCALES.....	204
N. SCALE ITEM DESCRIPTIVE STATISTICS	206

O. SCALE ITEM DESCRIPTIVE STATISTICS SPLIT BY LEARNING ENVIRONMENT	215
VITA.....	233

LIST OF TABLES

Table	Page
1. Scales for Independent Variables	71
2. Study Variables	72
3. Blueprint for Academic Integrity Awareness Scales	79
4. Blueprint for Cheating Scales	80
5. Sample Distribution by Learning Environment	86
6. Sample Distribution by Gender	87
7. Sample Distribution by Program of Study (Major)	87
8. Gender by Learning Environment	88
9. Age by Learning Environment	89
10. Major by Learning Environment	90
11. Total Variance Explained for the Academic Integrity Survey	93
12. Final Five-Factor Structure of the McCabe Academic Integrity Survey (M-AIS) Using Cheating Behaviors	98
13. Composite Score Test of Reliability for Scales	99
14. M-AIS Scales Descriptive Statistics, Self-Reported Cheating Behaviors	100
15. M-AIS Scales Descriptive Statistics, Perceived Severity of Cheating Behaviors	101
16. M-AIS Scales Descriptive Statistics, Policy Dissemination and Academic Integrity Climate	102
17. Exam and Collaborative Cheating Scale Descriptive Statistics, Cheating Behaviors	103
18. Exam and Collaborative Cheating Scale Descriptive Statistics, Perceived Severity	105
19. Fabrication Scale Descriptive Statistics, Cheating Behaviors	106
20. Fabrication Scale Descriptive Statistics, Perceived Severity	106
21. Turning in Another's Work Scale Descriptive Statistics, Cheating Behaviors	107

22. Turning in Another's Work Scale Descriptive Statistics, Perceived Severity	108
23. Plagiarism Scale Descriptive Statistics, Cheating Behaviors	109
24. Plagiarism Scale Descriptive Statistics, Perceived Severity	110
25. Technology-Assisted Cheating Scale Descriptive Statistics, Cheating Behaviors	111
26. Technology-Assisted Cheating Scale Descriptive Statistics, Perceived Severity	112
27. Academic Integrity Climate Scale, Descriptive Statistics	113
28. Policy Dissemination Scale, Descriptive Statistics	114
29. Univariate Comparisons of Cheating Behaviors Between Learning Environments	115
30. Marginal Means Comparisons of Cheating Types Between Learning Environments - Cheating Behaviors	116
31. Univariate Comparisons of Cheating Behaviors Between Age Groups	117
32. Marginal Means Comparisons of Cheating Types Between Age Groups - Cheating Behaviors	118
33. Post-hoc / Pairwise Mean Age Group Comparisons of Cheating Behaviors	119
34. Marginal Means Comparisons of Cheating Types Between Major Groups - Cheating Behaviors	123
35. Univariate Comparisons of Cheating Behaviors Between Major Groups	122
36. Post-hoc / Pairwise Mean Major Group Comparisons of Plagiarism Cheating Behaviors	125
37. Univariate Comparisons of Perceived Severity of Cheating Behaviors Between Age Groups	127
38. Marginal Means Comparisons of Perceived Severity of Cheating Behaviors Between Age Groups	128
39. Post-hoc / Pairwise Mean Age Group Comparison, Perceived Severity of Cheating Behaviors	130
40. Univariate Comparisons of Perceived Severity of Cheating Behaviors By Gender	131
41. Marginal Means Comparisons of Perceived Severity of Cheating Behaviors By Gender	132

42.	Multivariate Comparison of Awareness of Institutional Policies between Learning Environments	134
43.	Univariate Comparisons of Policy Dissemination and Academic Integrity Climate Between Learning Environments	134
44.	Marginal Means Comparison of Policy Dissemination and Academic Integrity Climate between Learning Environments	135
45.	MANCOVA Analysis of the Interaction Between Learning Environment and Academic Integrity Climate on Cheating Behavior	136
46.	Comparison of the Main Effect and Interactions of AICS on Cheating Behaviors	137
47.	MANCOVA Analysis of the Interaction Between Learning Environment and AICS on Perceived Severity of Cheating Behaviors	138
48.	Comparison of the Main Effect for AICS on the Perceived Severity of Cheating Behaviors	139
49.	MACOVA Analysis on the Interaction between Policy Dissemination and Learning Environment on Awareness of Institutional Policies	140
50.	MANCOVA Analysis of the Interaction Between Learning Environment and PDS on Perceived Severity of Cheating Behaviors	141
51.	Comparison of the Main Effect and Interactions of PDS on the Perceived Severity of Cheating Behaviors	142
52.	Summary of Research Questions and Hypothesis Testing Findings	144

LIST OF FIGURES

Figure	Page
1. Scree-Plot	94
2. Adjusted Five-Factor Structural Model of the Academic Integrity Survey Using Confirmatory Factor Analysis	97

CHAPTER I

INTRODUCTION

Technology is changing the world that we know today; not only how we live, but also how we learn. New delivery methods and technologies for education and educational materials are growing and the students of today embrace and expect these advancements, ushering in a new era of learning (Allen & Seaman, 2008). Although technology brings many benefits to education; alongside those benefits come issues related to academic integrity (Adkins, Kenkel & Lim, 2005).

Academic dishonesty has been a problem throughout history (Whitley, 1998). The pervasiveness of academic dishonesty on college campuses is staggering. Whitley (1998) conducted a meta-analysis of research focused on academic dishonesty and found that the prevalence of cheating ranged from 9% to 95%, with an average of 70% of students self-reporting that they had cheated. In a study conducted by the Center for Academic Integrity (CAI), 75% of students on college campuses have admitted to engaging in some form of academic dishonesty (Hutton, 2006).

With the advent of new cheating methods such as paper mills, text-messaging multimedia phones, and “cut-and-paste” plagiarism, students are finding new ways to cheat and more clever ways to avoid detection (McMurtry, 2001). Use of the Internet has proven to be a slippery slope as instructors have had to re-evaluate uses of electronic documentation and websites as source material for papers since students are engaging in various forms of Internet copyright violations, “cut-and-paste” plagiarism, and borrowing information from several different web sites (McCabe, 2005).

Academic Dishonesty on Community College Campuses

Academic dishonesty is pervasive in education and threatens the academic establishment by eroding the credibility and sanctity of educational institutions. This problem is not confined to four year institutions, but is also an issue on community college campuses (Moeck, 2002). Students are finding new methods to cheat that are more difficult to detect and combat. With the rapid expansion and need for community colleges to train and prepare today's workforce, community colleges have taken on a much larger role in education today and are facing more of the related issues that larger, four year institutions face in terms of academic dishonesty. However, the vast majority of the research related to academic dishonesty has occurred on four year campuses.

The community college can be defined as, "any institution regionally accredited to award the associate in arts or the associate in science as its highest degree" (Cohen & Brawer, 2003, p. 5). These schools offer an affordable, accessible and quality education in a learning centered atmosphere for costs that are typically much less than the tuition and fees of four year institutions.

Community colleges are rapidly expanding to meet the diverse needs of their students including the expansion into online learning. According to the Sloan Consortium, an organization whose focus is online learning, community colleges have taken the lead in expanding their online offerings for students. Forty-one percent of community colleges offer entire degrees online and 92% offer at least one Internet based course (AACC, n.d.b). With the online learning environment growing rapidly and the pervasiveness of academic dishonesty in academia, the question becomes whether the online environment has any impact on a student's likelihood to engage in academic

dishonesty. In order to examine whether levels of student cheating are higher in online courses rather than traditional courses it is important to examine the nature of academic integrity and why students cheat and how they cheat.

There are many reasons why a student would engage in academic dishonesty, many of which come from a mix of both situational and individual factors. McCabe and Trevino (1997) found a significant correlation between academic dishonesty and age, gender, peer behavior and peer disapproval and found that older, female students reported lower levels of cheating. Vandehey, Diekhoff, and LeBeff (2007) also found age to be an individual factor correlated with academic dishonesty. Their research indicated lower levels of self-reported cheating among older students when compared to younger students. Additionally, these factors can be examined in both the online and traditional learning environment.

Several of the student characteristics that this study will examine include gender, age, and program of study. Examining these characteristics can help administrators and faculty develop appropriate materials that can be used to educate and communicate the importance of academic integrity in the classroom.

Reasons that students often present as factors which influence whether or not they will engage in academic dishonesty in a given situation include: pressure to succeed, peer pressure, poorly communicated institutional policies and a lack of faculty involvement in both educating students about academic integrity and pursuing cases of academic dishonesty by students (Bowers, 1964; McCabe, 2005a; McCabe, Treviño, & Butterfield, 2002; Gerderman, 2000). Some studies have found that such factors are more related to a student's decision to cheat than others. Research conducted by McCabe and Treviño

(1997) found that contextual factors influenced students more than individual factors. Contextual factors examined in their study included peer cheating behaviors, peer disapproval of cheating, and the perceived severity of cheating sanctions.

Cheating methods such as the inappropriate use of technology and the Internet, copying from and helping friends on a test, plagiarizing, and cheating on exams, are just a few of the ways that students engage in academic dishonesty. Although technology provides students with a wealth of information, it also provides them with an arsenal of tools that can be used to cheat. Students can fax and email to collaborate with other students. Information can be copied and pasted into another document without citations just as easy as it is to purchase a paper from a paper mill (Plowman, 2000). Olt (2002) observed that cheating with technology had become the difficult and hidden peril of online courses. Instead of working with an accomplice in a traditional class, and passing notes or answers to one another, students now send emails and encrypted messages which instructors have no hope of intercepting or decoding.

The methods with which and reasons why students cheat are expanding. Technology is providing new methods for teaching and learning. Nowhere is this more apparent than in community colleges (Allen & Seaman, 2008). Online courses are popular for a variety of reasons. They offer a broad range of topics, courses are available at any time, and not confined to a specific location (Chiesl, 2007). They also allow institutions of higher learning to expand when funding to physically expand is not available (Randall, 1998). Allen & Seaman (2008) show that since 2002, the growth in online enrollments is substantially higher than overall student population growth and will

continue to grow. They further found that more than one in four students in higher education had taken at least one online course during 2009 (Allen & Seaman, 2010).

With over half of online learners and 44% of all undergraduate students being educated by community colleges, it is important to empirically compare online and face-to-face student learning environments to determine if a difference in student attitudes of and behaviors toward academic integrity exists. This need is exacerbated by the fact that there is actually very little research that has been done concerning the prevalence of academic dishonesty in the online learning environment (Baron & Crooks, 2005; Black et al., 2008; Callaway, 1998; Gerdeman, 2000; Grijalva et al., 2006; Lanier, 2006; Lumsden & Arvidson, 2001).

Problem Statement

According to the Sloan Consortium's recent report, more than half of all online learners are being educated at association institutions (Allen & Seaman, 2008). Association institutes, defined by the Carnegie Classification, includes only institutions that award associate's degrees but no bachelor's degree (E.I. Allen, personal communication, April 27, 2009). With over half of online students being served at two-year associate degree-level institutions, and the expectation for the continued growth of online learning coupled with the prevalence of academic dishonesty among students today, it is important to examine whether the new learning environment has an impact on academic integrity.

The purpose of this study is to determine whether differences in self-reported attitudes and behaviors toward academic integrity exist between community college students enrolled in online courses and those in traditional courses. In addition, the

students' level of awareness of the institutional policies related to academic integrity and their impact on the self-reported behaviors of students engaging in acts of academic dishonesty will be examined.

Significance of the Study

With the future growth of community colleges offering online learning options, this study attempts to determine whether students are more likely to engage in forms of academic dishonesty when they take online courses as opposed to traditional courses. Information regarding the extent of cheating within online and traditional courses can help the faculty and administrators at community colleges develop curriculum, policies and procedures related to those learning environments. The results of the study can also be used to fill a gap that exists in the literature on academic integrity and the online learning environment at community colleges.

Research Questions

This study was conducted in order to answer the following questions:

1. To what extent do online and face-to-face students differ in their self-reported behaviors and attitudes toward academic integrity and do self-reported behaviors and attitudes vary by student characteristics (age, gender, and program of study)?
2. Does the level of awareness of institutional policies related to academic integrity differ among students enrolled in traditional courses and those enrolled in courses offered online?

3. What impact does an awareness of the institution's academic integrity policies have on the self-reported behaviors and attitudes of students engaging in acts of academic dishonesty?

Methodology

This study used a non-experimental comparative research design. The Academic Integrity Survey (M-AIS) developed by Dr. Donald McCabe, founding president of the Center for Academic Integrity, was used to collect data. The survey collects students' self-reported attitudes and behaviors of cheating behaviors and additional questions regarding the academic environment.

A stratified sample was used in order to ensure that students enrolled in traditional courses and those in online courses were adequately represented. The sample of this study consisted of 1,769 students selected from 115 online courses and 4,962 students from 300 traditional courses. The number of completed surveys collected from the sample of 1,769 online students was 427 yielding a 25% response rate and 1,331 for traditional students yielding a response rate of 27%.

To address the research questions in the present study only data from particular items will be analyzed. Scales for the academic environment (defined as student rating of the Academic Integrity Climate and Policy Dissemination) and cheating behaviors were constructed from the survey instrument. The Academic Integrity Climate scale will measure how students rate the severity for cheating and the support, understanding, and effectiveness of the academic integrity policies on campus. The Policy Dissemination scale will rate the frequency with which their instructors discuss policies related to maintaining academic integrity. The Exam and Collaborative Cheating scale will

examine activities that involve cheating on tests or exams and using unpermitted assistance to complete course work. The Fabrication scale will examine activities that involve the use of falsifying lab data and research data. The Turning in Another's Work scale will measure cheating activities that involve submitting work completed by another person. The Plagiarism scale will measure activities that involve fabricating bibliographies and paraphrasing a few sentences of copying large sections of work without proper citation. Finally, the Technology-Assisted Cheating Scale will measure activities that students use when cheating with technology. The scales are discussed in greater detail in Chapters 3.

Using exploratory factor analysis and confirmatory factor analysis the construct validity of the scales was measured and internal consistency was measured using Cronbach's alpha. The demographic data analyzed in the present study includes age, gender, program of study, number of credits earned, time spent in activities outside of studying, and self-rated technical skills. The instrument and cheating scales are described in greater detail in Chapter 3.

Limitations

This study has several limitations. Since this study will only examine the differences of attitudes and behaviors of students at one community college, the findings may not generalize the results to any other community college. In addition, the survey response rates are low which can further reduce the ability to make generalizations. Second, a web-based survey was used for data collection which may have made it difficult or impossible for some students who may not be computer literate or have limited or no access to a computer to participate in the study. In addition, even though

participants were assured that their responses would be anonymous and reported in aggregate, social desirability bias may lead individuals to respond more positively than they feel or have behaved in the past if they believe that their responses can be linked back to them. This is especially true with electronic surveys where students may think that technology can be used to trace their responses back to them (McCabe, 2005b).

CHAPTER II

REVIEW OF LITERATURE

This chapter provides a review of current and existing literature that examines academic dishonesty. The literature review defines academic integrity and cheating and examines individual and situational factors that can influence a student to cheat, ways in which students can cheat, and cheating in the online learning environment.

Academic Integrity

Academic Integrity Defined

To more thoroughly explore the concept of academic integrity, an understanding of what the term actually defines is necessary. The Center for Academic Integrity (1999) defines academic integrity as, "...a commitment, even in the face of adversity, to five fundamental values: honesty, trust, fairness, respect, and responsibility. From these values flow principles of behavior that enable academic communities to translate ideals into action" (p. 4). This definition of academic integrity will be used for the purpose of this study.

Lipson (2004) defines academic honesty using three principles. Those principles are:

- When you say you did the work yourself, you actually did it.
- When you rely on someone else's work, you cite it. When you use their words, you quote them openly and accurately, and you cite them, too.
- When you present research materials, you present them fairly and truthfully. That's true whether the research involves data, documents, or the writings of other scholars. (p. 3)

The Importance of Academic Integrity

Maintaining a climate of academic integrity is of importance to the educational academy for a variety of reasons. A campus that lacks a climate of academic integrity risks a negative impact on the teaching-learning process and to its reputation. As Bower (1966) states:

Cheating thwarts the instructor's efforts to impart knowledge and to engender regard for independent critical thinking.... To the extent that academic dishonesty prevails, grades lose their value as a measure of academic achievement, and consequently, they lose their power to motivate students....And there is always the threat of scandal that would damage the academic reputation of the college. (pp. 57-58).

In a similar fashion, Shyles (2002) contends that it is important to be vigilant agents of academic integrity in both the online and traditional learning environment. He further states that the online learning environment presents unique challenges in maintaining academic integrity, specific to identifying, authenticating and monitoring students as they complete academic work. If institutions of higher learning do not ensure that academic integrity and quality exist on their campuses, any infractions may, over time, begin to erode the credibility of the institution. This erosion poses a threat not only to the institution, but will also taint the reputation of faculty and students.

Exploring the damage academic dishonesty can inflict on an institution, Dr. Robert A. Harris, author of *The Plagiarism Handbook: Strategies for Preventing, Detecting and Dealing with Plagiarism*, stated that, "If students are allowed to cheat at a

given institution, the degree is going to lose its values, employers won't trust the institution's graduates and students will want to go someplace else" (Berg, 2003, p.7).

When attention is focused on academic integrity, especially by their peers and the faculty, students are less likely to engage in academic dishonesty for fear of reprisal for their actions (McCabe, 2005a; McCabe, 2005b; Zwagerman, 2008). Additionally, the responsibility for creating a climate of integrity lies with the entire learning community, not only students, but faculty and staff as well (Biernacki, 2004).

The influence of student conduct and action becomes a charge of the community college as they strive to educate the student in a holistic manner focusing not only on curricula but personal development as well. Christensen Hughes and McCabe (2006) believe that, "Higher education plays a role in democratic society - one that requires us to provide our students with a high quality education, to develop moral and engaged citizens, and to uphold the highest standards of integrity" (p. 59). Bleeker (2008) sums it up this way: "Even if we seldom discuss it or give it the thoughtful attention that it deserves, we know that education without integrity is like religion without faith" (p. 10). If students earn grades by cheating, those students are deprived of learning which, if allowed to continue, could jeopardize our democratic society.

In short, academic dishonesty hurts everyone. The work of honest students is devalued, the reputation of an institution may be marred, and students who cheat are deprived of learning from their mistakes (Cole & McCabe, 1996). Burnett, Rudolph, and Clifford (1998) summarize the detriments to the academy when academic integrity is lost:

There is a problem festering within our institutions of higher education that threatens to weaken their very foundation. The problem is more threatening than

faculty-administration disputes; more costly than the recent and pervasive funding cutbacks; and has a greater potential of eroding the core of the teaching-learning process than underprepared students or overpopulated classrooms. The problem is academic dishonesty, and the need to address the problem is paramount. (p. vii)

Academic Dishonesty

The majority of research that examines academic dishonesty has been conducted at four-year institutions and a scarcity in research at the community college exists.

Definition and Extent

Finding a common definition for academic dishonesty can be a difficult task, as the definition varies from author to author, and is relative to the individual (Whitley & Keith-Spiegel, 2002; Biernacki, 2004). For example, Bleeker (2008) found that researchers estimated that a minimum of 40% to a maximum of 80% of students reporting engaging in at least one act of cheating. In the meta-analysis of research, Whitley (1998) found that the prevalence of cheating ranged from 9% to 95% and had an average prevalence of 70% among students. The range in prevalence is a result in the varied definitions of cheating and ways in which cheating was studied (Bleeker, 2008; Whitley, 1998). Kibler (1993) defined academic dishonesty as "forms of cheating and plagiarism that involve students giving or receiving unauthorized assistance in an academic exercise or receiving credit for work that is not their own" (p. 253). Bowers (1966) conducted a study in which he defined cheating as, "a student's effort to deceive an instructor who is evaluating the student's academic performance" (p. 21). Alschuler and Blimling (1995) stated that "Cheating is the academic equivalent of urban crime" (p.

123). Puka (2005) called cheating an affront to learning. Smyth and Davis (2003) state that:

Academic cheating may be as simple as using crib notes in class or plagiarizing others in written work, or it may be as extreme as utilizing unauthorized sources for take-home exams or even hiring professionals to write papers and prepare case reports. (p.18)

Though cheating is often understood as a means to an end, it is the type of cheating practiced by students and how that is viewed and understood by faculty which can pose a significant challenge. Tanner (2004) describes a variety of cheating behaviors ranging from looking over a neighbor's shoulder at a test, copying someone's homework to stealing a test from an instructor's desk. The problem lies in what individual instructors choose to "see" as cheating. One instructor may believe that asking another student for assistance with a project, sometimes referred to as co-operative learning, may be cheating while another instructor may see this as an opportunity to learn valuable interaction skills which will benefit the student in his or her career (McCabe, 2005). Another example is that of one faculty member who believes that using old or previously administered tests to study for an upcoming exam is cheating and another instructor who believes it is an excellent way to review materials and better understand the concepts being asked about in the exam (Pincus & Schmelkin, 2003).

For this study, the following definition of academic dishonesty developed by Cizek (2003) will be used.

Any action that violates the established rules governing the administration of a test or the completion of an assignment; any behavior that gives one student an

unfair advantage over other students on a test or assignment; or any action that decreases the accuracy of the intended inferences arising from a student's performance on a test or assignment. (pp. 3 - 4)

The terms academic dishonesty and cheating will be used interchangeably throughout this study.

Individual Factors Influencing Cheating Behaviors

In order to better understand why and how cheating occurs, it is first necessary to take a closer look at the students who cheat. By examining existing data related to the propensity to cheat, it can be determined if there is a correlation between a student's characteristics and the likelihood that academic dishonesty will occur. The characteristics that will be explored are: gender, age, major, GPA, year in school, involvement in extracurricular activities, and employment status of the student. A review of the research indicated that these individual characteristics appear to have some influence on a student's likelihood to engage in academic dishonesty.

Gender. Examining the literature for a correlation between gender and the likelihood of student cheating produces mixed results. Crown and Spiller (1998) conducted a meta-analysis of the studies focused on academic integrity and indicated that male students are more likely to cheat while other studies show no difference.

Lanier (2006) conducted a study of 1,262 students at a large university to compare self-reported cheating between online and traditional criminal justice and legal studies classes and to also examine whether demographic variables influence students to engage in academic dishonesty. This study revealed that for traditional courses, 23.6% of the reporting males admitted that they had cheated and 19.4% female students said that they

had engaged in an act of academic dishonesty. The findings regarding the gender of online learners was higher yet consistent, men (43.7%) cheated more than female students (38.7%).

Similarly, another study also revealed the potential influence that the socialization of males and females could have on a student's likelihood to engage in cheating. Iyer & Eastman (2006) found that students who were male, students who belong to a fraternity or sorority, and those with low levels of self esteem were more likely to cheat. Biernacki (2004) also found that males are more likely to cheat due to the fact that their socialization makes them feel less guilt.

In 1993, McCabe and Bowers surveyed students and compared their results with data collected by Bowers in 1963 which examined trends in student cheating. McCabe and Bowers saw a dramatic increase in cheating among women (from 59 to 70%) while levels of cheating among men did not increase significantly. The increase in women cheating might be explained by the increased number of women in traditionally male-dominated majors such as engineering, business and the sciences (McCabe & Treviño, 1996).

Rettinger, Jordan and Perschiera (2004) surveyed 103 undergraduate students at a highly selective liberal arts college that has a large residential student body. The mean age of the participant was close to 20 years of age and 48% were male and 52% were female. The results substantiated that men (89.9%) were more likely to report that they had cheated than women (72.2%). Men also reported being more grade-oriented which could explain the higher rates of cheating.

In addition to self-reported behaviors, gender also has a role in the likelihood of reporting incidences of cheating. Simon et al. (2004) found that there was a significant gender difference with respect to reporting cheating by others. Forty-six percent of female students indicated that they would report observed violations as compared to less than thirty percent of male students. Students who felt that faculty cared about the academic institution were more likely to report cheating by others as well.

Not only do men and women differ in their self-reported cheating behaviors, but the methods in which they cheat can be influenced by gender as well. Underwood and Szabo (2003) conducted a study to determine whether the Internet and computer technologies have an impact on a student's likelihood of engaging in academic dishonesty. Survey results suggested that the students surveyed had the skill necessary to engage in plagiarism. Males (35%) were more likely than females (25%) to cheat. Males reported that they were more willing to engage in cut and paste plagiarism without citations.

Age. Lanier's study (2006) found that older students with higher GPAs were less likely to cheat in online courses and single individuals were more likely to cheat. Hutton (2006) determined that younger students, traditional age college students, and underclassman are more likely to cheat. Callaway (1998) reported that the little research that exists regarding community colleges found that older students were less likely to engage in acts of academic dishonesty. Christensen Hughes and McCabe (2006) also found that personal factors such as being older, female, married, and a high GPA are associated with lower rates of academic dishonesty.

As previously stated, age can play a role in whether or not students engage in academic dishonesty. Age can also be used to examine how students evaluate whether activities constitute academic dishonesty. Wotring (2007) examined how students within three generations: Baby Boomers (born 1943 - 1960), Gen Xers (born 1961 - 1981), and Millennials (born 1982 - 2000); at a community college evaluate academic activities as cheating. Results of the study indicated that all three generations evaluated activities involving exams and papers as cheating but found significant differences in how students evaluate activities involving fabrication, shortcuts, and excuses. Younger students, belonging to the Millennial generation, were less likely to evaluate activities involving fabrication as cheating than students belonging to the Gen Xer or Baby Boomer generations. In addition, Millennial students did not evaluate activities within the excuses scale as cheating while the older students belonging to the other two generations did.

Although results are not definitive, it does appear that older students are less likely to cheat than younger students (Crown & Spiller, 1998; Whitley, 1998). The extenuating reasons for this disparity could be that older students experience less peer pressure from other students or even less contact with peers from whom to cheat. Furthermore, older students may be enrolled in courses that have substantially smaller course enrollments than younger students and also courses that are more relevant to their major. With smaller course enrollments, the student may feel that it is easier for the faculty member to detect cheating. Older students are traditionally in upperclassman curricula where the courses are related to their major while younger students are enrolled in survey courses and courses that are required, and not necessarily related to their major.

In addition, younger students belonging to the Millennial generation are likely to experience greater pressure to succeed which may lead them to engage in activities, that may be considered cheating to other generations, but are considered necessary to remain successful (Wotring, 2007). This is an important distinction to make, especially with respect to the community college population where the average age of the student is 29 (AACC, 2009).

Major. The next factor which can influence a student's likelihood to engage in academic dishonesty is the major in which the student is enrolled. Unlike age and gender, major is discretionary; and some majors correlate more highly with the likelihood that a student will engage in academic dishonesty.

In reviewing the types of students that cheat, Bowers' (1964) found business majors to have the highest percent of cheating with 66% of respondents self-reporting cheating, followed by engineering (58%), education and social science (both at 52%), and fine and applied arts (50%), physical science (47%), history and area studies (43%), humanities (39%) and language (37%).

Students in the most clearly career-oriented fields, business, engineering and education are much more likely to cheat than students majoring in history, humanities, or languages. In between fall the students majoring in the social and physical sciences and the art fields. These categories no doubt include both students who are seeking occupational training and those who are more interested in knowledge for its own sake. (pp. 105-106)

Lanier's (2006) study echoes this finding showing that students studying business were most likely to cheat (47.1%), followed by the hard sciences (42.6%), social

sciences (30%) and medical students (18.8%). Sophomores (42.4%) and juniors (43.8%) were most likely to self-report that they had cheated. After graduate students, freshmen were least likely to cheat with 29.6% self-reporting. This finding could be attributed to the fact that they had more opportunities to engage in academic dishonesty than their freshman counterparts. The undergraduate major most highly correlated with cheating behavior was education (30.4%), followed by hard sciences (28.3%), business (25.7%), medical students (25%), and social sciences (18.1%).

In an additional study which revealed information on majors and cheating, McCabe (2005) found that business majors (26%) were more likely to self-report cheating than general majors (20%).

Grade Point Average (GPA). A study of the literature concerning the achievement level of students and the likelihood of student cheating produces inconsistent results. Several studies have indicated that low achieving students are more likely to engage in acts of academic dishonesty than students with high GPAs while other studies have not found a significant difference.

Lanier's (2006) study of academic integrity and the learning environment found that students with the lowest reported GPA were the most likely to self-report cheating in both the online and traditional learning environment. Students taking online courses with a 2.0 GPA were most likely to cheat (46.7%), followed by those with a 3.0 (44%), and those with a 4.0 (24.4%). The GPA results for students enrolled in the traditional learning environment mirrored that of the online courses and produced a similar pattern with low achieving students self-reporting higher levels of academic dishonesty. Students enrolled

in traditional courses with a 2.0 GPA were most likely to cheat (33.6%), followed by 3.0 (21.2%), and those with a 4.0 (11.1%).

Echoing these findings, a 1997 study, conducted by McCabe and Treviño (2000) found that students with lower GPAs self-reported higher levels of cheating than students with higher GPAs. This may not be due to the fact that the students did not cheat, but perhaps can be attributed to the fact that students who already have higher GPA's do not want to jeopardize their achievement by admitting to cheating.

However, a factor that also needs to be taken into consideration is the various GPA scales at a given institution. Buckley, Wiese & Harvey (1998b) asked 210 students from business classes at a large university to rate the probability of engaging in unethical acts. They found that GPA was not a strong predictor for engaging in unethical behavior and found no relationship between GPA and engaging in these behaviors. The authors did note that the sample of low GPA students may be truncated due to the fact that the business school where the sample was derived required at least a 2.0 GPA and the researchers defined low GPA as 2.9 and below. This may mean that students who were considered in the "low GPA" category for this study would have been considered in the "high GPA" in other studies.

Several studies have suggested that GPA does not impact a student's likelihood to cheat. Examining test cheating on rural campuses, Robinson, Amburgey, Swank and Faulkner (2004) found that GPA was not a significant factor in the level of cheating on exams among students.

In their research to determine whether business students are more likely to cheat than non-business students, Iyer and Eastman (2006) surveyed students from two state

universities and found no significant difference in the level of academic dishonesty between students with low and high GPAs in either major. Overall, business majors reported less cheating than non-business majors. Their results also indicated that business students reported higher levels of academic dishonesty than non-business majors when GPA was a factor. Maintaining a certain GPA level in order to avoid being placed on probation or ejected from the business school were cited as probable causes for the higher levels of academic dishonesty among business students when GPA was a factor.

Extracurricular Activities. Bowers (1966) surmises that most students who received athletic scholarships were not awarded scholarships for academic reasons and were the poorest students of all those with scholarships. Those students that had athletic scholarships reported the highest percentage of cheating with 74% reporting that they had done so. Results from the McCabe & Treviño (1997) study showed that students involved in extracurricular activities reported higher levels of academic dishonesty.

Employment. It is important to examine whether employment or preparing for future job opportunities can have an impact on whether or not a student is likely to cheat. Literature examining employment and level of cheating yields mixed results.

Premeaux (2005) found that business administration majors who worked more than 40 hours a week self-reported a higher likelihood to cheat. Iyer and Eastman (2006) did not find a significant difference in the level of cheating and the number of hours worked among business students but did find that non-business majors who worked were more likely to engage in higher levels of academic dishonesty when compared to business majors. The researchers attributed the non-significant result among business students to the fact that the majority of respondents reported that they worked more than

20 hours a week. The researchers also stated that further study is required to examine the relationship between academic dishonesty and employment. The researchers surmise that the reduction in available time to study caused by employment may be a reason for students to cheat. Similarly, Davis (1993) also found that students cited working as a reason for cheating since it reduces the amount of time that they had to study.

However, Pino and Smith (2003) surveyed students enrolled in a required course, normally taken by sophomores, juniors and seniors, at a medium-sized state school and their results indicated that age, social class and working for pay did not have any impact on whether a student would cheat. Whitely (1998) also found a negative relationship between cheating and employment.

Bloodgood et al. (2008) report that future employment opportunities may be a contributing factor in determining whether a student will engage in academic dishonesty. Pressures to achieve grade point averages in order to qualify for job interviews or better employment opportunities once they graduate may lead some students to cheat.

Situational Factors Influencing Cheating Behaviors

Now that the individual characteristics of students have been explored in relation to their propensity to cheat, there remain some additional underlying reasons that students often present as determining factors which influence whether or not they will engage in academic dishonesty in a given situation. The following section will explore a few of the personal reasons students most commonly give for engaging in academic dishonesty and explore more deeply the reasons for students to engage in academic dishonesty.

Benefits Outweigh the Risk. Many students may feel that cheating, although a risk, is simply worth it in order to maintain the type of lifestyle, relationship or social status

they have attained. When weighing what they stand to lose if they are caught cheating versus what they stand to gain if they succeed, some students choose the latter and engage in academic dishonesty.

Bowers (1964) noted that grades are important to students as they will serve as a record of their performance and may be used to help determine future options for the student. Poor grades may be an incentive to cheat as students try to increase their grade point average in order to stay enrolled at the school. Pressures to be liked and admired, to stay within a social group that must maintain a certain GPA level, to avoid a stigma or being labeled, or to please parents and loved ones are some factors that can quickly escalate the importance of grades to a student. This in turn can influence a student's likelihood to engage in academic dishonesty especially when the benefits of cheating far outweigh the risks associated with it. Bernardi et al.(2004) found that students who cheated during their high school and college years were more likely to cheat because they considered the benefits to cheating outweighed the risk of being caught.

A survey of 210 students taking undergraduate business classes at a large university was conducted by Buckley et al. (1998). Forty-one percent of the respondents to this study were women (86 females and 124 males) and 10% (21) were international students. Participants were asked to evaluate twelve factors that could influence cheating behaviors. The results revealed that students were more interested in achieving good grades and that the end result was more important than how they got them.

Not only do achievements and grades influence students' decisions, but the risk involved can become a deciding factor as well. Manley, Russell, and Buckley (2001) surveyed business students and used a sliding scale of probability of being caught and

punished to examine the likelihood of a student engaging in dishonest behaviors. Results showed that as the probability of being caught and punished increased, the level of self-enhanced bias, or inclination to think of oneself in a more positive light than the social norm, decreased. When the risk of being caught was low, students believed that they would engage in dishonest behaviors at the same level as their peers. When the risk was increased students responded that they would not engage in dishonest behaviors. When the risk of being caught was low, students believed that they would engage in dishonest behaviors at the same level as their peers. Overall, when the risk was increased students responded that they would not engage in cheating behaviors.

Course Load. A student's workload as a contributing factor to their engagement in academic dishonesty consists of the scholarly workload taken on by the student and the workload the student is tasked with outside of school. In both scenarios, the pressure from obligations can quickly overwhelm a student and encourage him or her to engage in academic dishonesty. In Callaway's (1998) study, two of the main reasons cited by students for cheating was pressure for good grades (98%) and getting behind schedule with homework and other work (95.3%).

According to Tanner (2004), students justified cheating when faculty had imposed unrealistic expectations, when exams did not seem fair, and when they felt overwhelmed with work. Students feel that their cheating is justified when they perceive that an instructor is unwilling to grant them extra time or credit or the instructor's requirement of too much information to be read or memorized and tests that were too difficult. These rationalizations were perceived as the simplest way to combat the workload.

Pressure to Succeed. Regardless of where it comes from, parents, friends, teachers or themselves, many students decide to cheat in order to succeed and reach their

goals, no matter the risk. McCabe and Treviño (1999) believe that students often feel that cheating is justified because they are under tremendous pressure to succeed due to family or societal pressures. According to McCabe & Treviño (2001), students face a lot of pressure to do well for a variety of reasons some of which include to get a good job or to gain entrance to a good graduate school. Though there are numerous reasons, these are just a few of the pressures that students face while in college. If faculty do not respond to cheating in the classroom, honest students may feel the need to resort to cheating in order to keep a 'level playing field' (McCabe, Treviño, & Butterfield, 2001). When students see their peers succeeding where they cannot, the urge to cheat can overwhelm them and they will resort to cheating to just keep up.

Antion and Michael (1983) surveyed 148 community college students to study the incidence and amount of self-reported cheating on an objective final taken for an introductory psychology exam. The researchers found that a student's likelihood to cheat was dependent on the situations including: high or low risk, peer performance, knowledge of failure and the amount of observance of their behavior. The researchers also found that cheating was used as a mechanism to increase test scores, "One would infer from the community college students studied that cheating has become a means to an end - realizing higher grades, achieving satisfactory transfer credit, or obtaining more lucrative employment" (p. 481). Many students use neutralization strategies that help them rationalize their decision to engage in academic dishonesty (McCabe, 1992). If other students cheat, then the only way to compete for good grades, in the minds of some students, is to cheat as well.

According to Bowers (1966) students who have reported cheating in their coursework tend to use it as a supplemental measure to increase academic performance. However, the number of students who reported habitual cheating, was relatively small in his findings. Payne and Nantz (1994) interviewed upperclassman business majors and found that earning higher grades and saving time and effort on their studies were the most self-reported reasons to cheat. Students also cited peer pressure to help friends, courses of no interest or perceived relevance to the student, and a reduced likelihood of detection as reasons to cheat.

The learning environment itself can exert pressure on students to engage in academic dishonesty. Buckley, Wiese, and Harvey (1998) found that if students were able to cheat and no one got caught and the school did not do anything about it, students would have to take matters into their own hands and "engineer the situation" to ensure their own success. Another factor that influenced cheating was the ease of cheating and the small risk associated with cheating. Rather than take the necessary time to study and succeed, students were more inclined to solicit help from peers to get the grade and to complete tasks.

Fear of Failure. The fear of failure is another personal reason why a student might engage in academic dishonesty. When faced with the decision to cheat or possibly fail, some students choose to cheat rather than try harder. Underwood and Szabo (2003) found that in their study, six percent of the respondents reported frequent cheating and would plagiarize if they needed to. Fear of failure was a large motivator for the willingness of students to cheat. More than half of the respondents stated that they would plagiarize from the Internet to avoid failing an assignment. This fear can be based on

many different repercussions (parents disappointment, scholarship loss etc) but is still ultimately tied to the student not wanting to fail the course.

Vandehey, Diekhoff & LeBeff (2007) conducted research to examine the attitudes, behaviors, and beliefs of students toward academic integrity using data that was collected over a twenty-year period. The purpose of the study was to determine whether changes had occurred in the attitude of students toward cheating, to reveal variables that could differentiate between students who cheated and those who did not, and to assess the effectiveness of strategies used to deter cheating. As a deterrent, fear of being punished (i.e. receiving an F for the course, being dropped by the instructor, and fear of disciplinary action by the university) was rated as more effective than social deterrents (disappointing family, friends disapproval and embarrassment).

Peer Pressure. Peer pressure and demands by friends and acquaintances in classes are the most common reasons for cheating given by students. McCabe, Treviño and Butterfield (2003) stated that not only is academic dishonesty learned from one's peers and friends, but those same peers oftentimes become a support system for continued acts of academic dishonesty, perpetuating and facilitating cheating.

Research conducted by McCabe and Treviño (1997) found that contextual more than individual factors were related to student cheating. Contextual factors included peer cheating behaviors, peer disapproval of cheating, and the perceived severity of cheating sanctions. Students self-reported cheating was lower when students perceived that their peers disapproved of cheating and it was higher when students perceived high-levels of cheating among their classmates.

Witnessing, discussing, or interacting with students and peers that have strong feelings concerning cheating can have a significant impact on a student's likelihood to cheat. Bowers (1966) found that "Students' college peers have a powerful effect on their cheating behavior. Students who perceive that their fellow students strongly disapprove of cheating are not nearly as likely to engage in it as those who believe that their peers are more tolerant of cheating" (p. 2-3). He further found that if a student has fellow classmates that cheat, then they may be more inclined to cheat.

Oftentimes though, actions speak louder than words as Bloodgood et al. (2008) found that a student may be tempted to cheat based on the fact that a peer successfully cheated, so therefore it should be ok for them to cheat as well. If someone cheats and succeeds, the drive to cheat is heightened for the honest student in an attempt "level out the playing field". Cheating is seen as something that is contagious and can spread between students if it is not curbed. To the wronged student the viewpoint is, "Cheaters seemingly have an unfair advantage over others in that their performance is not based on skill, ability, preparation or even random occurrence" (p.557).

McCabe, Treviño, and Butterfield (2002) surveyed students from 21 campuses during the fall of 1999. The most significant factors influencing cheating were the perception of peer behavior and the certainty of being caught. A study conducted by Wang (2008) sought to provide empirical evidence related to the prevalence of online plagiarism. The majority of students responded that the Web has made plagiarism easier. Sixty-two percent of respondents believed that their fellow classmates plagiarize, nearly double the number from the same study who reported that they had done so. The results of this study echo what McCabe and Trevino have found, social pressures on students not

only influence them to engage in academic dishonesty, but may falsely give them the impression that everyone is doing it.

As McCabe (2005b) states in his study, the factors that influence students most strongly are developed and perpetuated on their own. "Today's students seem to be less concerned with what administrators and/or faculty consider appropriate behavior and much more concerned with the views and behavior of their peers." (p. 29, ¶1).

Social Norm. Social acceptance is another factor that contributes to students' engaging in academic dishonesty on college campuses. The idea that it is ok to cheat can influence students to cheat simply because 'everyone else is doing it'. Biernacki (2004) states that "Cheating behavior, whether in academics, business or otherwise, has all but become a societal norm" (p. 32). As it has been shown earlier, students feel that academic dishonesty is not a problem. It is pervasive in society and therefore should be accepted in classes as a societal norm and ignored (Gomez, 2001).

Similarly, students who would normally not consider cheating will engage in activities that are academically dishonest in order to compete with students who are cheating (Manley, Russell, & Buckley, 2001). Most students perceive cheating as socially acceptable and therefore have no problem disregarding academic integrity in their classes and engaging in cheating (Moeck, 2002). Coincident with these results, Smyth and Davis (2003) found that when they interviewed a collection of college students regarding their perceptions of cheating, students admitted that they do believe that it is ethically wrong, but still engaged in cheating - almost 50% of them believed it was a socially acceptable practice. Manley (2001) stated that the perception of academic dishonesty on a campus by students oftentimes can result in a self-fulfilling prophecy that perpetuates itself as

students continue to engage in academic dishonesty regardless of whether or not they actually see it occurring.

A research review conducted by Moeck (2002) found that rates of student cheating have ranged from 40 to 90 percent and recently, movies have depicted acts of academic dishonesty and have portrayed them in such a way that makes it cool and acceptable. Levine (2001) said that students who see their peers cheating justify cheating themselves in order to compete. Whatever the cause, an outward appearance of cheating as an accepted and commonplace behavior lessens the weight of the act and lets students believe that it is a meaningless act that hurts no one.

Faculty Responses & Involvement. Another perception that can drive students to cheat is the belief that an instructor does not care about whether or not a student cheats. McCabe (2005a) found that when faculty do not report or uphold the institutional policy on cheating, the instances of cheating will rise. McCabe stated, "Such inaction in the face of cheating leads to even higher levels of cheating as students quickly become aware of which faculty are not likely to pursue cases of suspected cheating and their courses become targets for cheaters" (2005a, p. 9).

In their survey, Buckley et al. (1998) found that students also blamed the environment, not just the instructors. What this translated into was a penchant for cheating based on the success of the attempts. Since students could cheat without fear of reprisal, they would continue to cheat.

Although faculty may suspect or even be convinced that cheating is occurring in their classrooms, many are reluctant to address it for a variety of reasons including the time it takes to process paperwork to fear of not getting tenure (Adkins, Kenkel, & Lim,

2005). In addition, Selingo (2004) points out that cheating has become easier in part because of technology and the fact that faculty fail to confront acts of academic dishonesty they encounter. McCabe (2005a) found that 41% of faculty reported that they had ignored suspected student cheating, usually because they lacked the needed proof to support the allegation.

Alschuler & Blimling (1995) noted that there are disincentives for faculty to turn students in for cheating. Some of the reasons include needing to furnish proof, the process set up by the institution to ensure a student's due process can be long and drawn out, faculty may feel a lack of support from administration, and fear of retribution from students. McCabe (2005b) echoed these ideas stating that administrators may not support the faculty member while they are dealing with a cheater from their class. When this occurs, many faculty can become jaded and begin to feel that their job is to teach students, not to be the "police".

An additional factor that influences faculty inaction in the face of cheating is retribution for their actions. Strom and Strom (2007) state that many faculty are concerned about how parents will react when they are informed that their child is caught cheating. Seventy percent of faculty cited fear of a lawsuit as reprisal for catching a student for cheating.

Reasons aside, some faculty do not act on cheating in their classrooms because they may not believe that it is occurring or have their own individual methods (outside of the school's official policies) for dealing with academic dishonesty.

In an effort to study the factors that impact how faculty respond to academic dishonesty at a multi-campus two-year college, Burke (1997) surveyed 742 faculty and

found that faculty did not believe academic dishonesty was a problem, although 86% suspected cheating in their classrooms and 65% had been certain of it. The results also indicated that faculty were familiar with the academic integrity policies but were not concerned with the implementation of the policy as they handled the process on their own outside of the college's procedures.

Similarly, in 1962 when Bowers (1964) initially collected data for his study, he found that on average, deans of students estimated that 15% of students cheated or plagiarized while the student body presidents estimated 20% of students cheated. A large number of students (34%) estimated that 40% of students cheated or plagiarized.

Faculty Response to Academic Dishonesty. Carter & Punyanunt-Carter (2006) studied how faculty handle academic integrity infractions. Faculty responded that not taking action on incidents of academic dishonesty was not an acceptable solution and although not pleasant, failing a student on an exam or talking to the student after class were more appropriate alternatives.

Studying the faculty perspective of academic dishonesty, Jendrek (1989) found that 60% of faculty members had reported seeing some form of cheating in their classrooms, but only 20% of them reported or met with the student to discuss the incident or bring it to a higher level.

McCabe (2005a) stated that the likelihood of a student cheating in a class is highest in the situations where they are aware that the faculty are known to ignore cheating and not report it. Fear of confrontation or litigation from the accused student, damaging a student's academic record, and the time required to process and document the infraction were among reasons cited for ignoring and not reporting instances of

academic dishonesty (Jendrek, 1989; Adkins, Kenkel & Lim, 2005; McCabe, Butterfield, Treviño, 2006). Finally, a perceived lack of support from administration towards faculty when they do report cheating students is a deterrent for academic integrity, fostering a poor climate of learning. Fear of reprisal from accused students coupled with lack of administrative support can turn faculty away from promoting academic integrity (Hutton, 2006).

Moeck (2002) believes that some instructors do not report incidents of cheating because they desire a clean and untarnished record; therefore, academic integrity becomes secondary to their own professional advancement. Some faculty believe that academic integrity is not worth their time or effort, a never-ending battle coupled with what they believe to be a lack of initiative by the administration to curb cheating (Hutton, 2006).

Additionally, the lack of a centralized and well-documented academic dishonesty policy leaves faculty with the ability to deal with cases of academic dishonesty on a per case basis, taking external factors into consideration (gray areas) that can make them less likely to report incidences of cheating, thus perpetuating a climate of academic dishonesty (Pincus & Schmelkin, 2003).

Course Subject / Material Not Relevant. When students are faced with a task, assignment or even subject that is not interesting to them, the fear is that they may ‘tune out’ the lesson, however, an even more surprising result can occur from this lack of interest. Studies have shown that students may not just ignore a lesson that they find unappealing, they may even engage in academic dishonesty to get through it, since they perceive it holds no real value to them.

As students evaluate their own ideas concerning the importance of the classes they are taking and their the impact they have on their career path, Bowers (1966) found that students may cheat in one course so that they can spend more time in another course that they deem more important to their future. Similarly, Rowe (2004) points out that students will likely cheat when an exam has no meaning or importance to them. The decision to cheat in these situations is not driven by a personal desire to achieve a goal or a determination to reach an end, rather this lack of academic integrity is based on a dislike and a disregard for the class, instructor and institution.

Also, when students do not have a connection with their teacher or when the course materials and assignments are either boring, not relevant or overwhelming, Kohn (2008) points out that students are more likely to cheat. The personal connection that many instructors attempt to make with their students oftentimes also reflects in the student's attachment to the subject. If an instructor is not involved, interested or passionate about the subject that they teach, this disinterest can pass to the students and result in students who do not care about the subject and engage in academic dishonesty just to get through the course.

Some students go to college and view obtaining a degree or certificate as their primary goal and may view learning as secondary. If a student does not view a course as vital to their major area of study they may take shortcuts and cheat to complete the class (Moeck 2002). This is seen in situations where students have to take required courses which they may feel have no real bearing on their chosen career path or field of study. In these cases, the students will cheat since they perceive it to be an easier path through the required course than to actually study and learn. Once they are through the required

class, they feel they are free to truly pursue their educational goals and take the classes the “really matter” to them and will have a bearing on what they do in the future.

Unrealistic Assessments. Students come under tremendous pressures to succeed not only from their peers, parent and sometimes themselves, but they can also feel pressured by instructors to succeed in a class. An instructor may feel that students need to receive the most thorough and complete education that they can provide and occasionally this can translate to students as a difficult or “tough” class. Faced with these kinds of challenges, some students will resort to cheating as a defensive mechanism, claiming that they needed to cheat just to get by in the course. In these scenarios, cheating is not perceived as a big deal and oftentimes students try to rationalize or neutralize their behaviors. Research conducted by the Educational Testing Services stated that, "Many students said that cheating was a "victimless crime," or that it made up for unfair tests or lack of opportunity (Gomez, 2001, ¶3).

For example, if a student did not have a chance to study for an exam for which they needed a passing grade, they may cheat to pass the test, blaming the instructor for making the test (and oftentimes class) too difficult (Buckley et. al., 1998).

Additionally, some students may find that they are just too overwhelmed with their course load, work schedule or life in general to focus on a course and therefore will engage in academic dishonesty to combat the perceived “toughness” of a course.

Gibbons, Mize, & Rogers (2002) state that,

Students who already have very busy schedules may be compelled to take online courses due to the belief that they can add their academic work on top of an already busy lifestyle. Once the demands of the course become overwhelming,

especially in cases where the instructor may feel that the rigor of the course is being challenged, the student may feel that the course requirements are unreasonable for the credit to be awarded. Once students begin to feel that the course requirements are unreasonable, the temptation to use inappropriate resources to complete course assignments may grow. (p.4)

Institutional Policies Not Clearly Communicated. Decisions on whether or not to engage in academic dishonesty may not just be a result of the instructor's actions towards cheaters, but also their discussion of the rules and policies concerning cheating. If an instructor does not review their policies or the institution's policies concerning academic dishonesty, a student may not understand what constitutes cheating and therefore engage in acts of academic dishonesty unknowingly.

McCabe and Drinan (1999) recommended that colleges and universities take a more active role in combating academic dishonesty. A survey of close to 200 campuses revealed that approximately 25% of those institutions studied did not have any statements or policies related to academic integrity. Many of the institutions that did have statements and policies, lacked visibility and were difficult for faculty and students to find.

During the 2002-2003 academic year, McCabe surveyed more than 2,500 faculty members and found that two-thirds did not include information about their expectation of academic integrity within their syllabi. Of those surveyed, 44% admitted to turning a blind-eye to instances of academic dishonesty on occasion (McCabe & Pavela, 2004). In cases such as this, not only are the students unaware of the policies, but faculty who do not want to have to deal with students who cheat can use this lack of information as a safeguard against accusations of inaction in the face of cheating. McCabe and Pavela

(2004) further stated that faculty must espouse their commitment to academic integrity, model the behavior that they expect from students, and clearly communicate expectations. Instructors should not allow their students to claim that ignorance is acceptable, nor should they be able to claim it themselves. If an instructor wishes students to advocate the values and ideals that they admire, they need to display those same values themselves.

Volpe, Davidson, and Bell (2008) surveyed faculty at a small private university and reviewed their syllabi. Faculty reported that they believed between 30-40% of students cheated once. The researchers suggest that faculty underestimate the amount of cheating that occurs. The study also discovered that 20% of the faculty did not include any academic integrity statements in their syllabi. Examining the results for syllabi statements further, 34% of Arts and Science faculty did not include statements about penalties for cheating and 20% did not include any statements about academic integrity at all.

Instructors need to clearly define their academic integrity policies if they wish their students to understand and follow them. McCabe and Treviño (1996) found that students are less likely to cheat when they feel part of the college community, when they believe that their teachers are dedicated, and when they are aware of their institution's policies on academic integrity.

Misunderstanding / Ignorance. One of the simplest explanations as to why a student may engage in acts of academic dishonesty is simply a misunderstanding of the definitions and policies regarding cheating. Understanding academic dishonesty and confusion among faculty as to what constitutes dishonesty, particularly plagiarism, can

sometimes cause an honest student to engage in academic dishonesty by mistake or confusion (Choi, 2009). The difference between ignorance and miscommunication of school policy (as in the earlier examples) is that in this situation, the student is genuinely not aware of the definition of cheating at the institution (or in the classroom) and engages in cheating mistakenly. Burke et. al.(2007) suggest that students may mistakenly engage in acts of academic dishonesty without knowing it. For example, some students may use the ideas of researchers and authors without properly citing the source.

According to Moeck (2002), many first time college students who are just starting community college may be unfamiliar with the concepts of plagiarism or copyright and may be unaware of the institution's policies concerning academic integrity or academic dishonesty due to the fact that they have not read the student handbook and familiarized themselves with the school's core ideals.

With such a diverse and eclectic mix of students and faculty at the community college, there are different levels of understanding as to what constitutes academic dishonesty. Especially if they are the first generation to attend college, these students may not have a clear understanding of plagiarism or copyright. As Moeck (2002) pointed out, many students believe anything that is on the internet is considered public domain. Some students may plagiarize without intention because they do not have a good understanding of what it is, and coupled with a broad range of definitions held by faculty across the curriculum, may simply be confused (Broeckelman-Post, 2008).

Size of school. Not only do individual student factors influence cheating, but the size of an institution and the population of students that it serves can be indicators of whether or not academic dishonesty is likely to occur in the classroom.

Boehm (2006) found that how academic integrity is perceived and influenced on campuses is influenced by the size of the college community. The smaller the campus the more interaction there is between students, faculty and administrators, therefore the climate is more concretely and evenly defined and shared amongst constituents. Additionally, different strategies for fostering a climate of academic integrity need to be implemented for larger campuses with a larger student body than for smaller more intimate campuses and schools. Echoing this idea, Bowers (1966) stated that,

It might be that a small residential college with a favorable student-faculty ratio is more likely to foster an atmosphere in which students can rely on their peers for assistance in their school work than, say, a large urban university with a high proportion of part-time and commuting students. (p. 36)

Additionally, McCabe and Drinan (1999) assert a number of reasons for the decay of academic integrity on today's campus. Some reasons cited include a more permissive society, the lack of a personal touch or connection with a campus once it expands and becomes larger, and a lack of influence of full-time faculty on student life and part-time faculty taking on larger roles.

How Students Cheat

There are a number of methods students use to cheat. Research has uncovered some of the methods and they are described below.

Use of Technology. An example of technology being used to facilitate cheating is demonstrated by two undergraduate Columbia University students who cheated during the Graduate Record Examination by using high-tech transmitters and walkie-talkies. The students had in their possession approximately \$12,000 worth of electronic equipment

when they were caught. The students had tried to intercept test questions, and police officials believe that the two students would have sold the test questions to other students (Carnevale, 2002).

In another example, Burke, Polimeni, & Slavin (2007) cite an incident where accounting faculty were faced with complaints of cheating from students in an accounting class decided to use technology to catch those students who had used technology to cheat. The teachers posted an answer key for the exam with incorrect answers to see which students would use unauthorized assistance, i.e. electronic devices, to access the key. Of the 400 students who had taken the test, 12 students had the identical, incorrect answers that appeared on the key. Every student caught admitted to using Internet-enabled cell phones to cheat on the exam (Read, 2004).

A 2004 ABC News Primetime report focused on student cheating and found that small, high-tech devices are being used to download answers to graphing calculators and palm pilots while cell phones are being used to take images of test questions which can be sent on to others (Adkins et al., 2005).

Although technology provides students with a wealth of information at their fingertips, it also provides them with an arsenal of tools that can be used to cheat. Students can fax and email to collaborate with other students. Information can be copied and pasted into another document or papers can be purchased (Plowman, 2000). Olt (2002) observed that cheating with technology had become the difficult and hidden peril of the online course. Technology allows students to send e-mails and encrypted messages when completing online assessments rather than relying on the passing of notes or the use of hand signals when completing an assessment in the traditional learning environment.

Boehm (2006) reported that as technology grows and increases, faculty need to be better trained to use technology to curb cheating. Boehm further suggests that academic integrity officers need to set specific rules and guidelines that outline methods of internet/technology cheating and define how those types of cheating are to be handled by faculty.

These difficulties do not just occur in the traditional face-to-face classroom. Cheating is becoming commonplace in online courses as well. As Adkins (2005) points out, "Online courses offer unique opportunities for students to commit acts of academic dishonesty." (p. 21) and "Since there is no face-to-face interaction between the instructors and students, it becomes a challenge for instructors to ascertain academic honesty in their online classes" (p.18).

The Internet. The Internet can be used to cheat in a variety of ways, but especially with writing. All a student needs to do is type in a keyword or topic into a search engine and then parse through the results, find something worthwhile, and then copy-and-paste the contents. Additionally, students can also email assignments to other students attending different schools (McMurtry, 2001).

In McCabe's (2005a) study, examining questions related to written assignments, between 25% and 50% of students self-reported that they had engaged in working with others to complete assignments when not permitted, copying information without citation or receiving help from someone on an assignment. It is interesting to note that students reported less instances of copying materials from the Internet than a written source without citation. One theory that McCabe has for this low number is that students may be using more 'hard-print' items that may be more difficult for Google searches to pick up as

plagiarized work. McCabe also reports that nearly 62% of the students who had admitted to using 'cut-and-paste' plagiarism had done so using written and Internet sources.

The release of confidential or sensitive teaching materials can also be a concern, as Davis (1993) revealed that computerized test banks developed by textbook publishers have been for sale as soon as they are made available. And Etter and Finn (2006) also suggest that technology has lessened the barriers to cheating for students.

Prohibited Collaboration and the Use of "Ringers". An additional method that is used to cheat is prohibited collaboration. Rather than take time to study, students were more inclined to solicit help from peers to get the grade and to complete tasks (Buckley et al., 1998). One concern among faculty who teach online is the use of "ringers", defined by research as individuals with expertise in the field being studied and someone who takes the exam in place of the student (Adkins et al., 2005). Adkins et al. (2005) explain the use of ringers further,

According to Wein, at the University of Arizona campus, a flyer was circulated offering services of attending classes and taking exams for a fee (Wein, 1994).

In a survey conducted by Nuss, faculty members considered having someone take exams for someone else among the most serious forms of academic dishonesty (Nuss, 1994). The use of "ringers" in online classes can be more severe as it is harder for faculty to identify who is actually taking the course and completing the assignments for the course. (p.18)

Kidwell, Wozniak, and Laurel (2003) conducted a two-part study at a private, liberal arts university to compare student and faculty perspectives toward cheating and honor code violations. The researchers labeled students cheaters if they had engaged in a

cheating behavior more than once. Using that reasoning, the researchers found that 74.5% of students at the school were cheaters. The most common offense was taking several sentences without providing proper citation (47.1%) which was followed by working with classmates to complete an academic task when directed not to (46.7%), and obtaining test questions and answers from someone who had already taken it (45.8%). Students felt that the most serious cheating behavior was using unauthorized notes during an exam and did not feel that using work without citing it or working with others to complete work were as serious. In other words, the students who had taken the exam did not view the most frequently engaged in acts of cheating as serious infractions.

Regardless of whether or not students perceive cheating on exams as a serious form of cheating, studies show that it is prevalent across all curriculums and institutions. McCabe (2005b) gathered data from 67 US campuses and 16 Canadian campuses between 2002 and 2005 for the Academic Integrity Assessment Project. With respect to exams and tests, 21% of students surveyed had used at least one form of cheating (copying off someone with or without their knowledge, using cheat sheets, and helping someone during a test) while taking a test or exam.

Helping Friends. Similar to copying off another student in an exam or assignment, knowingly sharing answers with classmates when specifically instructed not to is a form of cheating that is widespread. In a survey conducted by Davis (1993), 20% of students who cheated on an exam used strategies such as making patterns with hand/feet movements, designating corners of the desk and tapping them to provide answers, stealing a copy of the test, using the book, listening to the test answers while taking the test, and to writing materials down on one's arm.

Rakovski and Levy (2007) examined business students' behaviors and attitudes towards academic dishonesty at a medium-sized business college. Using an online survey, students were asked to self-report how many times they participated in a variety of cheating behaviors and to rate the severity of each behavior and their perception of sanctions for cheating behaviors. Allowing someone to copy homework, copying homework, helping another on graded work, receiving help with graded work and copying off the Internet were the most frequently reported behaviors. Acts of academic dishonesty that were reported serious by students were not as frequently committed as those acts that were considered less severe.

Students who cheat during tests often do so with other students. According to a survey conducted by Bowers (1964), more than half of student respondents had seen other students cheat during an exam; 40% of those students were approached by fellow classmates and asked to assist them in cheating. Also, Strom and Strom (2007) reported that if faculty use the same test for multiple sections of a course, some students will try to obtain the test questions so that they can perform well on the exam.

Feigning Illness or Excuses to Extend or Postpone Due Dates. Fraudulently using an excuse to extend the due date of an assignment or postpone finishing an assignment is considered cheating because it is unfair not only to the instructor but the other students in the class as well. In a study conducted by McCabe (2005a) 16% of the student respondents had admitted to using a false excuse to defer taking an exam for a variety of reasons which include trying to obtain test questions and answers from someone who had taken it when it was scheduled. Respondents indicated that 33% reported learning information about a test from someone who had already taken it.

Roig and Caso (2005) studied whether the type or frequency of fraudulent excuses has changed over time and whether excuse making is associated with conventional forms of academic dishonesty. Seventy-two percent of students who responded indicated that they had used a fraudulent excuse at least once. Students also reported that fewer than 25% of their teachers required proof to substantiate their claim. Of the students that claimed that they used fraudulent excuses, 80% used them to gain more time to study or to complete an assignment.

Plagiarizing and Paper Mills. The definition of plagiarism can vary from faculty member to faculty member unless there is an institutional definition, usually included in the school's disciplinary policy. Some faculty may define plagiarism as using a few sentences without citation to submitting an entire paper that was copied from another source (Bennett, 2005). Callaway (1998) reported that of the types of cheating that students engaged in, the most frequent form of cheating was copying sentences without proper citation with 58.3%. Some students may plagiarize without intention because they do not have a good understanding of what it is, and coupled with a broad range of definitions held by faculty across the curriculum, may simply be confused (Boeckelman-Post, 2008).

McCabe (2005b) compiled results from more than forty thousand undergraduate students from sixty-eight campuses who responded to a web-based survey. Students self-reported the following: 51% reported serious cheating on written work. Four out of five students admitted to some form of cheating on written work, many stated that they had used the Internet to either cut-and-paste information or purchase a paper from a paper mill.

Technological advances have created new and innovative methods that students can use to cheat. According to Burke, Polimeni, and Slavin (2007), technology has also increased levels of plagiarism. Not only by copying and pasting material, but by the purchase of term papers offered by hundreds of paper mills. Online paper mills have become increasingly international, advanced and profitable. Products from these paper mills have been customized and rendered virtually undetectable by anti-plagiarism software. Paper mills have gone global, where labor is cheap - between \$1 and \$3 a page, and retailing for between \$20 to \$30 a page. Much of the writing is occurring overseas. Paper mills are all over the Internet and easy-to-find (Bartlett, 2009). One paper mill can be found at a web address where you would expect to find information about academic integrity, <http://www.academicintegrity.com>

According to Baum (2005), the number of Paper Mills available on the Web is growing. In 1999, there were approximately 35 sites offering papers, but by 2003 the number had grown to 250. Glasner (2002) interviewed Kenny Sahr, who is the founder of SchoolSucks.com, a website that offers free term papers and generates revenue by posting advertisements for other websites that charge for term papers. He stated that the site receives around 10,000 unique visitors each day and that growth of new visitors has been constant. Sahr, stated that he receives resumes from teachers interested in opportunities to write term papers. Sahr also admits that the free papers available to students are not the best and further stated, "I think a lot of them stink" (p.3. ¶21).

Cheating on Exams. There are a number of ways that students can cheat on an exam although some students may not consider some of these methods as cheating. Many have already been mentioned, the use of technology, a "ringer", or making fraudulent

excuses to delay taking a test and perhaps learning about the test questions from another student who had taken the test are just a few examples (Burke et al., 2007).

Students are able to use a variety of electronic devices, such as cell phones, iPods, electronic calculators, and personal data assistants (PDA), to cheat on examinations. Sophisticated cell phones have become the new medium for creating cheat sheets of formulas and other crucial information, allowing users to text-message answers during an exam and even take pictures of an exam to give to friends taking the exam later. (p.60).

There are a number of methods that students can use to cheat. Davis (1993) found that the two most frequently used methods to cheat identified by students were copying answers from a student in close proximity and using crib notes or cheat sheets. In their study, these two methods account for 80% of the cheating. Grijalva, Kerkvliet and Nowell (2006), state that there are two types of cheating that take place: planned and panic. Planned cheating involves the creation of cheat sheets while panic cheating occurs when a student finds themselves at a loss for answers. The researchers suggest that planned cheating may occur in online classes more than panic cheating since exams are often taken in 'isolation' which reduces the opportunity for panic cheating.

Academic Dishonesty and Community Colleges

Though the topic of academic integrity is important and widely researched across many different academic fields, there still exists a significant deficit of data and research related to the extent of academic dishonesty involving today's community college campuses. As Dembicki (2008) points out, much of the academic dishonesty research focuses on four-year institutions with very little examining the community college.

Lumsden and Arvidson (2001) stated that:

The wealth of information regarding academic integrity, honesty, and dishonesty at the four-year level, for both private and public institutions, is extraordinary.

However, significantly more study is required at community colleges, as the composition of the student population has typically included more diversity (p. 15)

Callaway (1998) surveyed 338 students enrolled in general education courses from seven community colleges within a Midwestern state. He found that 26% of students surveyed were employed full-time, 48.2% worked part-time, and 25.7% were not employed. Of the 15 cheating behaviors listed in the survey, 79.1% of the students self-reported engaging in one or more of the behaviors while 20.9% had reported that they had not engaged in any of the activities. Of the students who cheated, 20% had cheated once or twice, 18.5% reported three to four acts, 19.7% had reported engaging in five to seven acts, and a little over twenty percent (20.9%) had engaged in eight or more acts of academic dishonesty.

A survey of 750 chief academic officers at community colleges and four-year colleges and universities, both private and public conducted by Boehm (2006) found that 58% of public college officers and 64% of community college officers thought there was a moderate amount of cheating at their school while 51% of private college officers thought there were low levels of cheating at their schools.

In a similar report, Smyth and Davis (2003) discovered that 45.6% of community college students whom they surveyed admitted to cheating in some form. These results did mirror typical 4-year institution statistics, however, the researchers acknowledged

that the results could be skewed due to the atypical enrollment of the community college from which they drew their sample. For example, 25% of the students resided on campus, 83% were enrolled full-time, and 20% worked full-time while 30% did not work at all. The results of the study indicated that although 82% of students witnessed cheating 43.2% never observed a student caught for cheating, and 90% feared punishment if caught cheating. They found that males were more likely to cheat than females. Students who live on campus were more likely to believe that cheating is socially acceptable than those students who live off campus. Living on campus may influence a student's perception of cheating when considering the effect of peer pressure or seeing cheating as the social norm. The majority of students (92%) admitted that cheating is wrong; however, 45% responded that cheating was socially acceptable.

In another study focused on understanding student cheating at the community college, Lumsden and Arvidson (2001) surveyed 89 community college students using an adapted version of McCabe's Academic Integrity Survey. Overall, 73.5% of the students self-reported never engaging in acts of academic dishonesty while only 26.5% of the students reported that they had cheated. In addition, the researchers found that the likelihood and fear of getting caught was the most influential condition that is considered before cheating, followed by pressure to get good grades and penalties for cheating. Surprising and contradictory to what has been seen in much of the research, the researchers found that students reported that seeing others cheat in class was not an important factor when deciding whether or not to engage in academic dishonesty.

Bleeker (2008) analyzed data collected by McCabe from 3,225 students who had attended one of seven community colleges. According to Bleeker, the results suggest that

community college students may be more honest than students attending four-year institutions. Eighty-four percent of the students were aware of the academic integrity policy and 53% stated that they had learned it from their teachers. When presented with 19 cheating behaviors, a large percentage of students responded that they had never engaged in a majority of them. For example, 81% of students never used false excuses, 83% had never helped someone else cheat on an exam, 85% had never copied from another student during an exam with or without their knowledge, 86% reported never turning in a paper copied from another student or cheating on a test in any other way and 88% of students never turned in work done by another. The cheating behaviors that students admitted to engaging in the most were copying a few sentences from a written source without proper citation (19% responded only doing this once; 15% had done it more than once), followed by copying a few sentences from the Internet without citing (16% responded only doing this once; 13% had done it more than once), and collaborating on an assignment with others when the faculty requested individual work (16% responded only doing this once; 17% had done it more than once). In addition, 57% of the students reported that they had never seen another student cheat while taking an exam. These statistics mirror what Lumsden and Arvidson (2001) found but are different than results gathered from Callaway (1998) and Smyth and Davis (2003).

Online Learning Environment

The previous section outlined some of the most common individual and situational factors that influence students' likelihood to cheat. In addition, some of the most common and emerging methods which students use to cheat were explored. This section discusses the new teaching venues that are rapidly expanding and how this new

online learning environment impacts academic integrity. Some of the existing research will be explored together with current trends in the online learning environment and its growth, especially at the community college.

Expansion of Online Learning

The online learning environment is rapidly expanding, especially for community colleges where it offers already busy students a more flexible learning plan that more easily meets their needs. Additional reasons have also bolstered online enrollments and will be described in the following paragraphs.

Allen & Seaman (2008) assert that growth in online student headcount enrollments is substantially higher than the growth in higher education generally. They found that over 20% of students in higher education had taken at least 1 online course during the fall 2007 semester. They further suggest that as the economy declines and unemployment rates rise, there will be growth in online enrollments.

When comparing the figures from the first annual online learning Sloan survey in 2002 and the sixth survey in 2008, Allen and Seaman (2008) found an increase in online learners each year and within the last six years, with 1.6 million students taking at least one online course in fall 2002 to 3.94 million students taking online courses during fall 2007 doubling the enrollment from the initial number of online students in 2002.

Online courses are popular for a variety of reasons including: a broad range of topics, course availability, and courses are not confined to a location (Chiesl, 2007). Distance learning provides students with needed flexibility since students can access course materials online and can also help students meet the requirements for certain degrees, licensure or meet recertification needs (Deal, 2002). The online learning

environment also allows institutions of higher learning to expand their offerings and options to students when funding to build equivalent physical spaces is not available (Randall, 1998).

More than half of the online learners are educated by community colleges so it is important to compare online and face-to-face students to determine if there is a difference in their attitudes of and behaviors toward academic integrity.

Learning Environment Compared to Traditional Courses

Smith, Ferguson, & Caris (2001) interviewed 21 university faculty members who had taught both traditional face-to-face courses and online courses. Faculty commented that the online environment provides a platform for all students to participate, engage in deeper conversations, and also feel partial ownership over the class. The online environment also affords the more reserved students with a feeling of anonymity at the beginning of the course which allows them some time to get adjusted and more comfortable with the class. Smith, Ferguson, & Caris (2001) believe that through the written exchange that takes place over discussion threads and emails, the ideas and attitudes of a student become solidified and identifiable. They assert that "This emergence of online identity may make the whole worry of online cheating a moot point. Often stronger one-to-one relationships (instructor-student and student-student) are formed in online courses than in face-to-face classes." (p. 26). As students submit work throughout the course, faculty can quickly develop an online identity for the student based on their submitted ideas and writing style. In addition, faculty can quickly identify when work submitted does not match the identity developed by the student over time.

When engaged in Web-based learning, faculty and students communicate through email, chat sessions and discussion boards (Baron & Crooks, 2005). This type of interaction provides faculty with a written archive of the student's written work, thought process and ideas that can be used to compare work if the question of academic dishonesty arises. Traditional, face-to-face faculty only have an account of formal work throughout a term.

According to research conducted by Bensen et al. (2008), a number of studies that compared traditional classroom instruction to online instruction found that there were no significant differences in student satisfaction or learning outcomes.

The online environment can give some students the impression that faculty are not as involved as they are and as assignments become more challenging, students may often justify cheating because they do not feel as if their teachers are 'there' (Gibbons, Mize and Rogers, 2002).

Herberling (2002) believes that it is easier to detect academic dishonesty, particularly plagiarism, in online classes as opposed to traditional classes. Herberling's belief is predicated on the idea that online students typically submit more written assignments than in traditional courses which provides a baseline for the student's writing making it easier to recognize changes in a student's writing style.

The techniques used to curb academic dishonesty in traditional classrooms can also be applied to online classrooms (Whitley & Keith-Spiegel, 2002). Since cheating in online courses has received so much attention, faculty may be more cautious or vigilant in their online courses. This increased attention, in turn, can provide evidence and the

appearance of faculty concern to students, which may reduce the amount of cheating by students (Grijalva et al., 2006).

Online Instruction in Community Colleges

As community colleges welcome the next generation of students, many bring with them the interests, skills, and developments of current society. Miller, Pope and Steinman (2006) found that nearly all community college students enrolled in mathematics courses required for general education transfer work or occupational programs they surveyed indicated that they used computers on a daily basis. In their report, all respondents agreed that they use a computer to complete school work and use the Internet for both academic and personal reasons. They further found that the use of e-mail and instant messaging was evenly distributed among female and male students.

According to the AACC (n.d.a.), technology is driving growth in community college's expected enrollments. Innovations in technology have created the need for continual retraining and skill updating, and have provided a platform for community colleges to deliver education to individuals within their district and beyond. There is an increased need for community colleges to offer courses online and expand their reach to students for both accessibility needs and student preference. Many of the students enrolled in community colleges have family and work obligations and online courses allow them to fit a course or two within their busy schedule.

Keeping pace with advances in technology, the growing use of online resources for collaboration and interaction will significantly impact higher education within the next few years (Johnson, Levine, & Smith, 2009). With student usage trends showing an increased interest in online courses and the continued focus community colleges have on

maintaining accessibility for learners, online courses are quickly becoming an expectation for today's students and community colleges are trying to meet their needs (Allen & Seaman, 2008).

According to the Sloan Consortium, an organization focused on online learning, community colleges have taken the lead in expanding their online offerings for students. Forty-one percent of community colleges offer entire degrees online and 92% offer at least one internet based course (AACC, n.d.b). According to Allen and Seaman (2007), the growth rates of online learning at associate's institutions have exceeded any other type of Carnegie Classification of Institutions of Higher Learning. They further stated that community colleges enrolled over 54 percent of online enrollments in the United States.

Community colleges offer online education as an option for students for reasons beyond open access. Bensen et al.(2008) surveyed community colleges to examine the prevalence of distance education. When asked for reasons why online courses were offered, 83% stated that they could reach nontraditional students, 82% responded to reduce time barriers and constraints for students, 79% used it to market to new students, and 77% felt that it could increase access to academic courses. Surprisingly, reducing the institutions per-student-cost and making the education more affordable for students were least often cited as reasons to offer distance learning.

The increased cost of fuel is another consideration for the increase in online learners. According to Allen & Seaman (2008), more than 85 percent of the associate granting two-year colleges responded that higher fuel costs will increase the number of students who select online courses when given the choice. The online programs will also be offered to serve working adults and to accommodate the predicted growth in online

learning caused by the growth in unemployment (Allen & Seaman, 2008). Clearly, providing online learning can assist community colleges to fulfill their mission and meet community needs while at the same time creating a new source of revenue.

Although online courses offer great flexibility, one of the most common difficulties experienced by the faculty who teach those courses is the challenge of maintaining academic integrity within this new learning environment (Adkins, Kenkel, & Lim, 2005). There are a limited number of studies assessing academic integrity in the online environment and the results are mixed; some report higher incidences of academic dishonesty while others in the online environment report less when compared to levels reported in traditional classroom environment (Adkins, et al., 2005; Barons & Crooks, 2005; Lanier, 2006). Black, Greaser, & Dawson (2008) found that 81% of students perceived that there was no more cheating in the online classroom. They also reported that:

Results suggest factors known to contribute to academic dishonesty in face-to-face classes have little influence in online courses, and results suggest that future research needs to consider whether students who engage in online learning have different ideas about what constitutes cheating. (p. 23)

Lack of Research in Online Learning Environments

There is very little research that has investigated the prevalence of academic dishonesty in the online learning environment. Baron & Crooks (2005) found that there is an absence of research data regarding academic dishonesty in online education. The perception that there is more academic dishonesty in online classes than in traditional classes is presumed and not supported by empirical data. Considering the growth of

online education and the dearth of research focused on academic integrity, a critical need for statistical evidence and empirical data exists.

In an article by Carnevale (1999), Dees Stallings, director of academic programs at VCampus, a company that assists colleges that wish to establish online courses, was quoted as saying, "Measuring the extent of on-line cheating is difficult. No national data exists" (p.1.). Additionally, according to Kennedy, Nowak, Thomas, & Davis (2000), taking into consideration the rapid growth of distance education and the extremely limited amount of available statistical data, coupled with the (possibly incorrect) assumptions made concerning academic integrity in this environment, there is most certainly a need for further study.

There is ample evidence that more empirical data needs to be collected and explored concerning the online learning environment and its predilection towards academic dishonesty (Baron & Crooks, 2005; Black et al., 2008; Grijalva et al., 2006; Kennedy, et al., 2000; Lanier, 2006).

Disagreements in the Research

Based upon the small amount of data that is currently available concerning academic integrity and the online learning environment, there appears to be no significant difference in the amount of academic dishonesty that occurs in one versus the other. In a study conducted at a large public university which looked at cheating in a single online course, Grijalva, Kerkvliet, and Nowell (2006) surveyed students about their online course experience with respect to cheating behaviors on exams, homework assignments and plagiarism. The researchers found that students were no more inclined to cheat in an

online class than in a traditional class. They further stated that the design of online courses may reduce the likelihood for students to engage in panic cheating.

Although concerns about maintaining academic integrity in an online learning environment are legitimate, Ridley and Husbands (1998) believe that the thought that academic dishonesty is more likely in this learning environment are unsubstantiated. In their study of student grades in online and traditional courses, they found that in general, students who took online courses received lower grades in online courses than their traditional counterparts and further stated that "students showed no evidence of learning to use the greater opportunity to cheat by earning higher online grades over time" (p. 187).

A study of 1068 undergraduate students from 12 online psychology courses was conducted by Black, Greaser, and Dawson (2008) to investigate the perceptions that students had regarding cheating in the online classroom. The survey asked participants to compare and rate their experience in the online psychology courses versus past face-to-face courses on three items: the likelihood for peers to cheat, the learning that took place, and the interaction with their instructor. A major limitation of the survey used was that it did not ask students to self-report their cheating behaviors; it only focused on a student's perception of what other students are doing. Research revealed that students who reported higher amounts of interaction with faculty in the online course perceived less cheating in the course. The study also found that 81% of the students perceived that there was no more cheating in online classes than in traditional classes.

Adkins et al. (2005) concluded that research was mixed as to the prevalence of cheating in an online classroom versus the traditional classroom and also stated that online courses offered students unique opportunities to engage in cheating.

While looking into factors that may influence cheating, Stuber-McEwen, Wiseley, and Hoggatt (2009) examined and compared the type and frequency of student cheating behaviors at a private, Christian-based university. Using self-reported survey data, the researchers found that students enrolled in online course were less likely to cheat than those in the traditional, face-to-face learning courses. In addition, non-traditional adult students reported less cheating. Respondents taking both traditional and online courses believed that cheating was more prevalent in online courses.

Randall (1998) interviewed distance education faculty and found that they believed that the online learner was no more inclined to cheat than a learner in the traditional classroom. Interviewees stated that they communicated the expectations for maintaining academic integrity in the classroom. Similarly, Lanier (2006) conducted a study to compare self-reported cheating between online and traditional criminal justice and legal studies classes and also examined whether demographic variables influence students to engage in academic dishonesty. Results indicated that cheating was more prevalent in online courses than those in traditional courses. Of the students who took online classes, 58.9% did not cheat while 41.1% had admitted to cheating. Of those who reported cheating while enrolled in an online course, 19.7% cheated "rarely", 15.7% cheated "sometimes" and 5.8% cheated often. Students enrolled in the traditional class in the study reported less cheating with close to 80% of the population responding that they

never cheated in lecture courses. Of those who cheated, 3.4% admitted to sometimes cheating and only 1% admitted to cheating often.

Taking technology and changes in student proficiencies with technology into consideration, Rowe (2004) suggests that because there is a distance between the faculty member and the student, it is often easier to cheat on an online assessment. In addition, because some students are more technologically savvy than their teachers, students may understand how to exploit the technology in order to cheat.

Accountability in the Online Learning Environment

The Higher Education Opportunity Act (2008) added a new provision which requires, "an institution that offers distance education to have processes through which the institution establishes that the student who registers in a distance education course or program is the same student who participates in and completes the program and receives the academic credit" (§495). Several college officials have criticized this new provision and have stated that it, "implies that cheating is more of a problem among students online than among students in a classroom" (Foster, 2008, p.A1). Criticisms of this new provision may be aroused by the fact that not all students in traditional face-to-face courses need to produce identification when they first enter the classroom or take an exam.

Summary and Hypotheses

The focus of this literature review has been to explore the importance of academic integrity and understand how academic dishonesty can erode the fundamental principles of learning and the reputation of academic institutions. Through exploration of research devoted to the topic of academic integrity, it has been shown that there are varying

factors that can influence a student to engage in acts of academic dishonesty that step from a variety of factors, be they individual reasons or based on a student's given situation.

Individual and Situational Factors. Some of the individual and situational factors that influence cheating are age, gender, major, GPA, and the employment status of the student. Based on some of the findings explored in the literature review, differences exist in the basic understanding of what constitutes cheating to different age groups and based on the understanding, each group engages in academic dishonesty differently. Older students are less likely to self-report engaging in cheating activities than younger students. When evaluating gender and cheating, research studies have produced mixed results. Several studies have indicated that male students are more likely to cheat than their female counterparts and additionally, male students also had significant differences in what they reported as cheating. Finally, several studies have shown that GPA and major are potential factors in the likelihood for a student to cheat. Business majors and those students with lower GPAs were more likely to engage in academic dishonesty.

Pressure to succeed, course load, peer pressure and fear of failure are just a few of the situational factors that can influence student cheating. Students were significantly influenced by their peers and felt pressured to succeed as reasons to engage in cheating, but interestingly, a lack of understanding or exploration of what constitutes cheating can cause students to inadvertently cheat or engage in acts of academic dishonesty from the mistaken belief that is it accepted.

Ways in Which Students Cheat. The ways in which students are able to cheat are becoming more diverse and widespread. The use of technology, the Internet, helping

friends, and purchasing papers from paper mills are just several methods that students use to cheat. In some cases, when one looks at the situational factors that influence cheating, some of the cheating activities may stem from a lack of knowledge of what constitutes cheating. The majority of research has shown that students knowingly use resources to help them through their courses, or because it is considered socially acceptable or the norm by their peer group.

The Learning Environment. While the online learning environment has helped community colleges expand their reach and accommodate the needs of their community members, it has also prompted questions of whether academic integrity can be maintained within this new learning environment (Adkins et al., 2005).

Research addressing academic integrity within this new environment is limited and the results of the studies are mixed; some studies report higher incidences of academic dishonesty while others report less when compared to the traditional classroom environment (Adkins et al., 2005; Barons & Crooks, 2005; Lanier, 2006). Research studies have compared the online environment to the traditional environment and indicate that there are no significant differences in student satisfaction or learning outcomes (Bensen et al., 2008). In light of this research, the question remains whether the behaviors and attitudes that students have with respect to academic dishonesty are different for those who enroll in online courses than those in traditional face to face courses.

Hypotheses

In order to answer the research questions posed, the following hypotheses will be tested.

Hypothesis 1: There is no difference in the self-reported behaviors toward academic dishonesty for online students and traditional, face-to-face students.

Hypothesis 1b: There is no difference in the self-reported perceived severity toward cheating behaviors for online students and traditional, face-to-face students.

Research conducted by Ridley and Husbands (1998) and Black et al. (2008) suggest that the level of cheating in online courses was no different than in traditional courses.

Grijalva et al. (2006) also found that students in online courses are no more inclined to cheat than those in traditional courses. Based on this research, it is hypothesized that there is no difference in the self-reported behaviors of students in online courses and traditional, face-to-face courses.

Hypothesis 2: Younger students will be more likely to self-report higher levels of academic dishonesty than older students in both the online and traditional, face-to-face learning environments.

Hypothesis 2b: Older students will be more likely to self-report higher levels of perceived severity toward cheating behaviors than younger students in both the online and traditional, face-to-face learning environments.

Research has suggested that older students are less likely to cheat than younger students (Christensen Hughes & McCabe, 2006; Crown & Spiller, 1997; Hutton, 2006; Whitely, 1998). Callaway (1998) found that older students studying at community colleges were less likely to engage in acts of academic dishonesty. Lanier(2006) examined the online environment and found that older students were less likely to cheat. Based on this research, it is hypothesized that older students enrolled in both online and face-to-face courses will self-report lower levels of cheating than younger students.

Hypothesis 3: Male students will be more likely to engage in academic dishonesty than female students in both the online and traditional face-to-face learning environments.

Hypothesis 3b: Female students will be more likely to self-report higher levels of perceived severity toward cheating behaviors than male students in both the online and traditional, face-to-face students.

Studies examining gender as an individual factor influencing cheating have suggested that male students are more likely to engage in acts of academic dishonesty than female students (Biernacki, 2004; Crown & Spiller, 1998; Iyer & Eastman, 2006; McCabe & Treviño, 1996). Lanier (2006) examined academic integrity within the online and traditional learning environment and found that male students were more likely to cheat than females in both environments. Given these results, it is hypothesized that male students in both learning environments will self-report higher levels of academic dishonesty than female students.

Hypothesis 4: Students enrolled in business programs will self-report higher levels of academic dishonesty than any other program of study in both the online and face-to-face learning environments.

Hypothesis 4b: Students enrolled in business programs will be more likely to self-report lower levels of perceived severity toward the cheating behaviors than students with other majors, and this would not vary based on learning environment.

Research has suggested that business majors have self-reported higher levels of academic dishonesty when compared to any other major (Bowers, 1964; McCabe, 2005; Talab,

2004). Based on previous research, it is hypothesized that business majors will self-report engaging in higher levels of academic dishonesty than students in any other program of study.

Hypothesis 5: The level of awareness of institutional policies related to academic integrity will be different among students enrolled in traditional courses from those enrolled in online courses.

Hypothesis 6: Students in the online and traditional face-to-face learning environment who rate the support and understanding of campus academic integrity policies for both faculty and staff, effectiveness of policies, and severity of penalties for cheating as very high will be less likely to cheat and more likely to report behaviors as cheating.

Hypothesis 7: Students in the online and traditional face-to-face learning environment who report that their instructors discuss academic integrity policies in the classroom will be less likely to cheat and more likely to report behaviors as cheating.

Research suggests that students may unknowingly cheat when unaware of the academic integrity policies of the faculty and institution (Broeckelman-Post, 2008; Moeck, 2002). McCabe and Treviño (1996) found that students are less likely to engage in acts of academic dishonesty when they are aware of academic integrity policies. It is hypothesized that students who report that their faculty discussed academic policies often or very often are less likely to cheat than students who report faculty who seldom, very seldom, or never discuss policies.

Contribution of this Study

This study will contribute to the body of literature related to academic integrity as experienced in the community college environment. This will increase our awareness of the extent to which students are engaging in acts of academic dishonesty and contribute to the research that focuses on whether differences in the level of academic dishonesty exist between online and traditional learning environments.

Information gathered by this study can be used by community college faculty, administrators, accrediting bodies, and legislative policy makers as they make decisions about the future of distance learning. In addition, this information can also be used to develop strategies and methods to reduce cheating in the online learning environment.

CHAPTER III

METHODOLOGY

The purpose of this study was to determine whether differences in attitudes and behaviors toward academic integrity exist between students enrolled in online courses and those enrolled in traditional courses at a large Midwestern community college. This chapter describes the research design, secondary data used, population and sample, survey, data collection procedures, and data analysis.

Research Questions

In order to address the purpose of the study, the following research questions and hypothesis will be examined using quantitative methods. Each hypothesis was tested twice, once for the behaviors and the other for the perceived severity of the cheating behaviors.

1. To what extent do online and face-to-face students differ in their self-reported behaviors and attitudes toward academic integrity and do self-reported behaviors and attitudes vary by student characteristics (age, gender, and program of study)?

Hypothesis 1: There is no difference in the self-reported behaviors toward academic dishonesty for online students and traditional, face-to-face students.

Hypothesis 1b: There is no difference in the self-reported perceived severity toward cheating behaviors for online students and traditional, face-to-face students.

Hypothesis 2: Younger students will be more likely to self-report higher levels of academic dishonesty than older students in both the online and traditional, face-to-face learning environments.

Hypothesis 2b: Older students will be more likely to self-report higher levels of perceived severity toward cheating behaviors than younger students in both the online and traditional, face-to-face learning environments.

Hypothesis 3: Male students will be more likely to engage in academic dishonesty than female students in both the online and traditional face-to-face learning environments.

Hypothesis 3b: Female students will be more likely to self-report higher levels of perceived severity toward cheating behaviors than male students in both the online and traditional, face-to-face students.

Hypothesis 4: Students enrolled in business programs will self-report higher levels of academic dishonesty than any other program of study in both the online and face-to-face learning environments.

Hypothesis 4b: Students enrolled in business programs will be more likely to self-report lower levels of perceived severity toward the cheating behaviors than students with other majors, and this would not vary based on learning environment.

2. Does the level of awareness of institutional policies related to academic integrity differ among students enrolled in traditional courses and those enrolled in courses offered online?

Hypothesis 5: The level of awareness of institutional policies related to academic integrity will be different among students enrolled in traditional courses from those enrolled in online courses.

3. What impact does an awareness of the institution's academic integrity policies have on the self-reported behaviors and attitudes of students engaging in acts of academic dishonesty?

Hypothesis 6: Students in the online and traditional face-to-face learning environment who rate the support and understanding of campus academic integrity policies for both faculty and staff, effectiveness of policies, and severity of penalties for cheating as very high will be less likely to cheat and more likely to report behaviors as cheating.

Hypothesis 7: Students in the online and traditional face-to-face learning environment who report that their instructors discuss academic integrity policies in the classroom will be less likely to cheat and more likely to report behaviors as cheating.

Study Design

This study used a non-experimental comparative research design that relies on survey methodology. The independent variables for this study were the learning environment, academic awareness, policy discussion, age, gender, and program of study. The dependent variables used for this study are the cheating scales constructed from the survey for both the attitudes and behaviors of students. The independent variables are identified and described in Table 1 and all study variables are identified in Table 2.

Table 1

Scales for Independent Variables

Independent Variables	Description	Levels
Learning Environment	The learning environment for the course in which the student is enrolled.	Online Traditional
Age	The ages of students	18 - 21 years of age 22-35 years of age 36 years and older
Gender	The gender of the students	Female Male
Program of Study	The program of study that the student is majoring in	-Business & Technology -Health Sciences and Science -Education, Liberal Arts, and Public Service -Other & Undecided
Academic Integrity Climate Scale (AICS)	The student's attitudes toward the climate of academic integrity on the campus.	1=Very Low 2=Low 3=Medium 4=High 5=Very High
Policy Dissemination Scale (PDS)	The frequency that Instructors address academic integrity policies to their students as reported by the student.	1=Never 2=Seldom 3=Sometimes 4=Often 5 = Very Often

Table 2

Study Variables

Independent Variables	Dependent Variables
Learning Environment	Exam and Collaborative Cheating Scale - Behavior
Age	Fabrication Scale- Behavior
Gender	Turning in Another's Work Scale- Behavior
Program of Study	Plagiarism Scale- Behavior
Academic Integrity Climate Scale*	Technology-Assisted Cheating Scale - Behavior
Policy Dissemination Scale*	Exam and Collaborative Cheating Scale - Attitude
	Fabrication Scale- Attitude
	Turning in Another's Work Scale- Attitude
	Plagiarism Scale- Attitude
	Technology-Assisted Cheating Scale - Attitude

*This scale will also be used as a dependent variable to address the third research question.

Population and Sample

In order to examine whether differences in the level of academic dishonesty in online and traditional courses exist at the community college level, the population for this study was community college students. The sample used for this study consisted of students attending a large, Midwest community college. The average age of the student population attending the community college is 26 years old with 55% of students being female and 45% male. The majority of the students attend part-time (58%) while the remaining 42% of students attend full-time.

Given that the focus of the study examines whether the learning environment has an impact on a student's likelihood to cheat, two comparison groups were established. Using Statistical Analysis Software (SAS), a stratified random sampling of traditional and online courses for the fall 2008 semester was conducted. In order to obtain a comparison population of students, the following categories of class type were removed before classes were randomly selected: late starting classes (those starting the second eight weeks of the semester), Adult Basic Education (ABE), English as a Second Language (ESL), Independent Study, noncredit, Dual Enrollment, and courses specifically designed for partnerships held with various governmental agencies and external companies. A stratified sample was used in order to ensure that students enrolled in traditional courses and those in online courses were adequately represented (Gall, Gall, & Borg, 2003).

Online courses are defined as a course where the majority of the instruction, interaction, and communication between both faculty and students and interactions between the students takes place online. Traditional courses meet face-to-face and may use technology to supplement the course through the use of a course management system or the Web. At the time of the survey, 85% of students were attending traditional, face-to-face courses while 15% were enrolled in online courses.

Students enrolled in the traditional courses and online courses are comparable to the student demographic. The average age of students taking online courses is 26 while the average age for students enrolled in traditional courses is 25. Fifty percent of students enrolled in online courses attend full-time while the remaining half attend part-time. Forty-six percent of students taking traditional courses attend full-time while 54% attend

part-time. Sixty-eight percent of students enrolled in online courses are female while the remaining 32% are male. For traditional courses, female students account for 56% of the enrollment and 44% are male.

The sample for this study consisted of 1,769 students selected from 115 online courses and 4,962 students selected from 300 traditional courses. The number of complete surveys collected from online students was 427 yielding a 25% response rate and 1,331 from traditional students yielding a response rate of 27%. The response rate was calculated dividing the number of completed surveys by the potential number of students enrolled in each of the selected courses. The calculated response rate assumes that all potential student participants were informed about the survey and were encouraged by their faculty to participate. Additionally, information about the survey and a link to the web-based survey was sent to the student's college email account and not all students access this account. This may potentially reduce the number of student participants, which in turn, could have potentially increased response rates.

McCabe (2005a), discussed the use of this web-based survey since 2002 and stated that it is difficult to generate accurate response rates given the difficulty of knowing who received the email inviting them to participate in the study and who did not. The web-based surveys have yielded response rates between 10% and 15% in comparison to the typical response rate of 25-30% for the written surveys conducted (McCabe, 2005a). The response rates to the web-based survey at this community college exceed those experienced by McCabe.

Instrumentation

The McCabe Academic Integrity Survey (M-AIS) was used to answer the research questions (Appendix A). The survey was developed by Dr. Don McCabe, founding president of the Center for Academic Integrity. The survey has been administered to over 175,000 students at more than 170 institutions of higher learning. Minor modifications were made to the demographic questions (e.g. major of study, extracurricular activities) so that they would be relevant to the community college student population.

The survey is organized into four sections. The first section is comprised of questions which ask students to rate how they view the academic learning environment with respect to academic dishonesty. Students are asked to rate the severity of penalties for cheating at the college, the faculty and student understanding and support of the cheating policy, and the effectiveness of the policy on a five-point Likert-type scale (Very Low, Low, Medium, High, Very High). The second section asks students to self-report their level of engagement in 26 cheating behaviors and their attitudes toward each activity. For each cheating activity presented, students are asked to report the number of times they have engaged in each activity using a four-point Likert-type scale (Never, Once, More Than Once, Not Relevant) and also rate the seriousness of each activity on a four-point Likert type scale (Not Cheating, Trivial Cheating, Moderate Cheating, Serious Cheating). Students are also asked to rate the number of times that their instructor(s) discussed policies concerning plagiarism, collaborative and group work guidelines, proper citation and fabrication on a five-point Likert-type scale (Never, Very Seldom, Seldom/Sometimes, Often, Very Often). Additional questions regarding the use of technology, academic rigor and standards and peer behavior and approval are also

included in this section. The third section contains demographic questions and asks students to report the number of online and traditional courses that they have taken, the total number of credit hours earned, the number of semesters enrolled at the college, their age, gender, program of study, extracurricular activities and their self-rated technological skill. The last section of the survey allows students to make open comments regarding ways in which the college could strengthen their academic integrity efforts and to make additional comments about cheating in general.

Reliability and Validity of the McCabe Academic Integrity Survey (M-AIS) Instrument

Although this survey has been used in many studies and research articles, quantitative data about the reliability and validity is somewhat limited. In 1993, McCabe and Treviño reported a Cronbach's alpha of 0.794 for the cheating activities listed on the survey. The composite measure was constructed by totaling the values of respondents self-reported engagement of the 12 cheating behaviors on a Likert scale of 1 (never) to 4 (many times) (McCabe & Treviño, 1993). This process was also repeated in 1997 which yielded a Cronbach's alpha of .83 (McCabe & Treviño, 1997). Additional cheating behaviors were added and the survey instrument began to use 26 behavior items in 2004. In 2007, the Cronbach's alpha was calculated as .94 when using the 26 behavioral items (N=13,765) (Canham, 2008). Positive values of Cronbach's Alpha greater than .70 provide support for internal consistency reliability (Morgan et al., 2004).

Prior to being administered, the McCabe Academic Integrity Survey was reviewed by members of the Institutional Review Board and the Academic Integrity Task Force in order to establish content and face validity. Several changes were made to the demographic section of the survey in order to fit those questions to the community

college population based on the review. In addition, the McCabe Academic Integrity Survey has been widely used in dissertations and research articles focused on academic integrity, and has also been included in the Academic Integrity Assessment Guide for institutions of higher education through the Center for Academic Integrity. This guide was evaluated by twelve college campuses, including a community college, to ensure that the guide would help assess the academic integrity climate (CAI, n.d.).

Scales Created from the McCabe Academic Integrity Survey Instrument

For the purpose of the present study, only certain items and scales from the survey will be employed in order to address the research questions and test the hypotheses. The scales are described below. Items from the M-AIS were used to create twelve scales. Two scales were created from the Academic Environment section of the survey and will be used to examine students' ratings of academic integrity climate and understanding of the academic integrity policies and are shown in Table 3. Scales were also constructed from the 26 cheating activities listed in the second section of the survey for both behaviors and attitudes and are shown in Table 4. Cheating behaviors of the students will be measured through their self-reported engagement of the cheating activities while attitudes will be measured by the rating of perceived seriousness assigned to the activities. For each of the 26 behaviors listed, students are asked to self-report the number of times they engaged in each behavior (i.e. never , once, more than once, not relevant) and also rate the seriousness on a Likert-type scale (not cheating, trivial cheating, moderate cheating or serious cheating). The engagement scales will examine the student's engagement in each cheating behavior while the attitude scales will report on the students' rating of seriousness for each activity.

In order to establish factorial validity, the scales constructed for this study were assessed for validity and reliability by randomly splitting the sample and performing an Exploratory Factor Analysis (EFA) on one half of the data set and a Confirmatory Factor Analysis (EFA) on the other. The EFA used principal components with Direct Oblimin rotation and the CFA used Structural Equation Modeling with maximum likelihood estimation. To estimate reliability, Cronbach's Alpha was used to test the internal consistency of each factor. The results of the factor analysis are discussed in Chapter 4. The following scales will be used as independent variables to answer research question 2 and will be treated as dependent variables for research question 3.

- Academic Integrity Climate - student rating of the severity of penalties for cheating, the understanding and support of academic integrity policies by both faculty and students, and the effectiveness of the policies.
- Policy Dissemination - student rating of the frequency of their instructor's discussion of policies concerning plagiarism, group work, proper citation of sources both written and Internet-based, and fabrication of course lab data and research data.

The following scales are used to report cheating behaviors and attitudes and serve as the dependent variables for the study. The respondent is asked to rate each cheating activity using the behavior and attitude scales. Cheating activities were grouped using the following five categories and scales for both the behavior and attitude will be constructed for each category providing a total of ten cheating scales as shown in Table 4.

- Exam and Collaborative Cheating - activities that involve cheating on tests or exams ranging from using unpermitted cheat sheets to helping another student cheat on an exam and using unpermitted assistance to complete course work.
- Fabrication - activities that involve the use of falsifying lab data and research data.
- Turning in Another's Work - activities that involve submitting work completed by another student or individual and submitting it as one's own.
- Plagiarism - activities that involve fabricating bibliographies and paraphrasing a few sentences from both online and off-line sources.
- Technology-Assisted Cheating - activities that use technology to facilitate cheating ranging from copying another student's homework using email or Instant messaging, using unpermitted assistance, electronic devices, or crib notes to cheat during an exam.

The itemization of elements from the Academic Integrity Survey used to develop the scales used in this study are outlined in Appendix M.

Table 3

Blueprint for Academic Integrity Awareness Scales

Category of Cheating	Number of Items
Academic Integrity Climate	6
Policy Dissemination	6

Table 4

Blueprint for Cheating Scales

Category of Cheating	Behaviors	Attitudes
Exam and Collaborative Cheating	11	11
Fabrication	2	2
Turning in Another's Work	6	6
Plagiarism	3	3
Technology-Assisted Cheating	4	4

Protection of Human Subjects

Permission from the community college's and the Rutgers University Institutional Review Boards to administer the survey and to collect and store student responses was granted. Data was carefully collected so that participant responses could not be used to identify respondents. The data collection did not include any methods for tracking where responses were generated, such as the Internet Protocol (IP) addresses of the respondents. Students were informed and assured that participation in the study was completely voluntary, responses were kept anonymous and reported in aggregate.

Secondary Data Collection

The data that will be used for this study was collected by Dr. McCabe between September 22 and November 5, 2008. The researcher participated in the collection process by working closely with the Institutional Research Department and the Academic Integrity Task Force to organize and communicate the data collection effort. The data has been collected to serve as an Academic Integrity benchmark for the college. The

researcher requested the use of the collected data and received permission from both Dr. McCabe and the Office of Institutional Research at the college (Appendix B & C).

Data Collection

A web-based survey was used to collect student responses. In order to keep responses for online and traditional comparison groups separate, two identical web-based surveys were developed and assigned different web addresses. Students enrolled in online courses received a different web address than those enrolled in traditional classes. The web-based surveys were made available on Rutgers University web servers.

A pre-notice e-mail was sent to all faculty in order to inform them of the study that the college was conducting in order to gauge the climate of academic integrity on the campus and that students in their class may be invited to participate in the study (Appendix D).

Faculty assigned to the selected classes received notices that their class(es) were selected to participate in a nationwide study and were asked to inform their students about the survey. On September 19, 2008, information packets and handouts were provided to faculty whose courses were selected to participate in the study. Included in the information packets for traditional courses were instructions for the faculty and individual handouts for them to distribute to students. The student handouts explained the purpose of the study, the estimated time of 15 minutes which was needed to complete the survey, how to access the survey and contact information in the event that a participant had a question (Appendix E & F). Instructions were also provided to faculty who taught the online courses included in the sample. Those faculty received electronic instructions that were to be incorporated as an announcement in the course management system via e-

mail and a hard copy of faculty instructions were sent to their physical mailboxes (Appendix G & H).

The survey was made available starting September 22, 2008, and an email was sent to students using the college's student e-mail system on October 1, 2008 (Appendix I & J). A reminder e-mail was sent to students three weeks later (Appendix K & L). The survey was taken offline and was no longer available for responses on November 5, 2008.

Data Analysis

The construct validity and reliability for each scale was tested using both Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). The sample size for the study was sufficient to allow the sample to be randomly split in order to conduct a combination of an EFA and CFA. The EFA was performed to determine the best structure for the items, while the CFA was subsequently conducted to provide a validation of the structure that was found in the EFA. This factor analytic method reduces the probability that the structure was found in error (Pett, Lackey, & Sullivan, 2003; Kline, 2005) and enhances the construct validity for the ten cheating scales. After scales were developed, Cronbach's Alpha was used to further test the internal consistency of the twelve scales.

Descriptive statistics for each comparison group were calculated for each scale by group as well as for each item within the scale to further illuminate the difference. The responses pertaining to the cheating scales related to the self-reported engagement of the cheating behaviors used a numerical rating scale ("Never" = 1; "Once" = 2; "More Than Once"=3; and "Not Relevant" = 9). Consistent with the survey author's protocol, responses of "Not Relevant" were removed from the analysis (D.L. McCabe, personal

communication, March 27, 2010). Responses related to the perceived severity of each of the 26 cheating behaviors used a different numerical rating scale ("Not Cheating"=1; "Trivial Cheating"=2; "Moderate Cheating"=3; and "Serious Cheating" = 4). The Academic Integrity Climate Scale (AICS) was comprised of 6 items that used a five-point rating scale ("Very Low"=1; "Low"=2; "Medium"=3; "High" = 4; and "Very High" = 5). The Policy Dissemination Scale (PDS) is comprised of 6 items that used a five-point rating scale ("Never"=1; "Very Seldom"=2; "Seldom/Sometimes"=3; "Often" = 4; and "Very Often" = 5).

To answer the first research question, *To what extent do online and face-to-face students differ in their self-reported behaviors and attitudes toward academic integrity and do self-reported behaviors and attitudes vary by student characteristics (age, gender, and program of study)?*, separate multivariate analysis of variance (MANOVA) were conducted to answer the hypothesis that fit under research question 1. They were used to examine the means of multiple dependent variables, the cheating scale scores (Exam and Collaborative Cheating Scale - Behavior, Fabrication Scale - Behavior, Turning in Another's Work Scale - Behavior, Plagiarism Scale - Behavior, Technology-Assisted Cheating Scale - Behavior, Exam and Collaborative Cheating Scale- Attitude, Fabrication Scale - Attitude, Turning in Another's Work Scale - Attitude, Plagiarism Scale - Attitude, and Technology-Assisted Cheating Scale - Attitude), while examining a single independent variable (learning environment, age, gender, or program of study). ANOVAs were then conducted to determine if differences between groups existed for a single dependent variable with one independent variable for each hypothesis. In cases where

there were more than two groups, as with the case of age group and program of study, Scheffé Post-Hoc tests were run to examine pairwise differences between the groups.

To answer the second research question, *Does the level of awareness of institutional policies related to academic integrity differ among students enrolled in traditional courses and those enrolled in courses offered online?*, a MANOVA was run to examine if the online learning environment (the independent variable) had impact on the dependent variables, Academic Integrity Climate Scale (AICS) and the Policy Dissemination Scale (PDS). An ANOVA followed to examine the two dependent variables independent to the independent variable.

To examine the third research question, *What impact does an awareness of the institution's academic integrity policies have on the self-reported behaviors and attitudes of students engaging in acts of academic dishonesty?*, MANOVAs were conducted to examine the Academic Integrity Climate Scale [AICS], and Policy Dissemination Scale [PDS]) with the dependent variables (cheating scales). Since the AICS and PDS scores were continuous scales, a Parameter of Estimates table was prepared in order to examine the strength of the relationship between the independent variable and dependent variable. The AICS and PDS were tested separately.

Internal and External Validity of the Study

There are some factors to consider with respect to the internal and external validity of this study. The internal validity of this study may be affected if participants provide invalid responses when they do not feel that their responses will remain anonymous. In order to minimize this threat, students were made aware that participation was voluntary, that all responses would remain anonymous, and that there were no

methods employed for tracking where responses originated. These methods are commonly used to reduce the social influence of social desirability (Orcher, 2005). In addition, since the web survey resided on a separate web server and used a web address different than the community college's, students may feel more comfortable that their responses would remain anonymous.

The external validity may be limited since this study only examines the differences of attitudes and behaviors of students at one community college which may make it difficult to generalize the results to any other community colleges. In addition, the low response rates to the survey may jeopardize the ability to be able to generalize the results to non-respondents and other community college students.

CHAPTER IV

RESULTS

The focus of this research was to determine whether there is a difference in the attitudes of and behaviors toward academic integrity between students who enroll in face-to-face, traditional courses and those who enroll in online courses. The chapter will discuss the demographics of the study sample, present the results of the factor analysis of the McCabe Academic Integrity Survey which will be followed by the results of the statistical tests conducted to answer the research questions and test the hypotheses.

Sample Demographics

Respondents from the sample represent students from both online and traditional learning environments, including both males and females, and are from a variety of programs of study. In sum, the data from 1,760 respondents were collected, with 75.6% of respondents from the traditional learning environment and 24.4% online students, as shown in Table 5.

Table 5

Sample Distribution by Learning Environment

	n	Percent
Traditional	1331	75.6
Online	429	24.4
Total	1760	100

Examining the sample's gender distribution reveals that the majority of the sample is female. As shown in Table 6, respondents consisted of 67.4% female and 30.2% were male, with 2.4% of respondents choosing not to report their gender (Table 6).

Table 6

Sample Distribution by Gender

	n	Percent
Female	1186	69.0
Male	532	31.0
Total	1718	100

Note. 42 cases missing data.

Table 7 reveals the distribution of respondents by program of study. The largest percentage of respondents were from the *Health Sciences & Sciences* major (34.1%), 25.3% of respondents did not report a major or were undecided, 22.1% were from the *Education, Liberal Arts & Public Services*, 14.9% were from the *Business & Technology* group, and 3.5% of respondents did not respond to this item.

Table 7

Sample Distribution by Program of Study (Major)

	n	Percent
Business & Technology	262	15.4
Health Sciences & Sciences	601	35.4
Education, Liberal Arts, & Public Service	389	22.9
Other & Undecided	446	26.3
Total	1698	100

Note. 62 cases missing data.

Demographic Information for Each Learning Environment. Cross-tabulation of the respondents gender, age, and program of study were created to describe the sample's demographic information separately for each learning environment. Table 8 presents the cross-tabulation of gender and learning environment. Although the sample was composed of substantially more students from the traditional learning environment than online, females were somewhat more likely to be from the online environment than males. This is demonstrated by the larger proportion of participants that were female in the online learning environment (78%), compared to the traditional learning environment (63.9%). Neither environment seemed to be substantially more likely to have missing data for the gender variable, with traditional students missing 2.6% and online missing 2%.

Table 8

Gender by Learning Environment

	Traditional		Online		Total	
	n	Percent	n	Percent	n	Percent
Female	851	63.9	335	78	1186	69
Male	446	33.5	86	20	532	31
Total	1297	75.4	421	24.5	1718	100

Note. 42 cases missing data (34 from Traditional and 8 from Online).

Cross-tabulation was also used to examine learning environment in the context of age. As shown in Table 9, younger participants appear to comprise a smaller percentage of online participants and are less likely to take online courses when compared to their older counterparts. With respect to the traditional learning environment (LE), respondents

within the age range of 18 to 21 years of age comprised 58.5% of the group, compared to 25.1% for the 22 to 35 year age range, and 14.2% for the 36 years and older group.

Approximately 2.2% of traditional LE respondents failed to report their age.

The 22 to 35 years of age group was the largest segment of the online student group, accounting for 40.8% of respondents, compared to 34.3% for the 18 to 21 year old group, and 24.2% for the 36 years and older group. Approximately 0.7% of online respondents failed to report their age, a proportion that is slightly lower than respondents in the traditional learning environment. The percentage of missing data is low and unlikely to bias the results.

Table 9

Age by Learning Environment

	Traditional		Online		Total	
	n	Percent	n	Percent	n	Percent
18 to 21 years old	779	58.5	147	34.3	926	53.6
22 to 35 years old	334	25.1	175	40.8	509	29.5
36 years and older	189	14.2	104	24.2	293	16.9
Total	1302	75.3	426	24.7	1728	100

Note: 32 cases missing data (29 from Traditional and 3 from Online)

Table 10 describes the number and percent of respondents by program of study and by whether a respondent attended class in the traditional or online learning environment. The majority of respondents in both groups were students with a major in Health Science & Sciences.

Table 10

Major by Learning Environment

	Traditional		Online		Total	
	n	Percent	n	Percent	n	Percent
Business & Technology	191	14.9	71	16.8	262	15.4
Health Sciences & Science	464	36.4	137	32.5	601	35.4
Education, Liberal Arts & Public Service	280	21.9	109	25.8	389	22.9
Other & Undecided	341	26.7	105	24.9	446	26.3
Total	1276	100	422	24.9	1698	100

Note: 62 cases missing data (55 from Traditional and 7 from Online)

Analysis Overview

This study examined the extent to which students who were enrolled at a large, public Midwestern community college engaged in acts of academic dishonesty. The study also sought to determine whether differences in the frequency of academic dishonesty exist between online and traditional learning environments. Differences in the attitudes of and behaviors toward cheating, relative to age, gender, and program of study (major), were examined both individually and as covariates with the learning environment. Analyses of cheating behavior were performed twice, once while examining the self-reported cheating behaviors as the dependent variable, and a second time with the self-reported perceived severity of the cheating behaviors as the dependent variable.

To examine the self-reported cheating behaviors and their perceived severity, McCabe's Academic Integrity Survey (M-AIS) was administered to students in both the online and traditional learning environments. In order to determine whether there were

distinct and unique aspects of cheating to be examined in this sample population, both an Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) were performed. The EFA was intended to identify potential latent factors that were measured by the M-AIS, while the CFA was performed to test the validity of the factors identified in the EFA (Kline, 2005). To accomplish both the EFA and CFA, the sample was split, using the "random selection" function of SPSS. With the sample split, the EFA was performed on the first half of the data and the CFA was run on the second half. The random split of data was performed to guard against a self-confirming bias that may occur when an EFA and CFA are performed on the same data set (DeCoster, 1998; Kline, 2005). Scores on scales for Policy Dissemination and Academic Integrity Climate were also collected and used in this study.

Factor Structure of McCabe's Academic Integrity Survey (M-AIS)

Prior to testing the research questions, the factor structure of the M-AIS was examined to determine if academic dishonesty was best represented by a unitary "cheating" construct using a single factor model or by a structure that delineates between several types of cheating. The factor structure of the instrument was examined using the questions focused on the number of times the students self-reported engaging in the twenty-six cheating behaviors included in the survey. As previously mentioned, the factor structure of the M-AIS was examined using both an EFA and CFA; each on a randomized selection of 50% of the data.

The EFA was performed using principal components with direct oblimin rotation, and was followed by a CFA using structural equation modeling (maximum likelihood

estimation). Following the factor analysis, Cronbach's Alpha was used to test the internal consistency of each subsequent factor.

Results of the EFA indicated that a five-factor model provided the best fit for the data. This was determined by examining the “Total Variance Explained” table in SPSS 17.0 (shown in Table 11). The table indicated that the five factors had eigenvalues above the acceptable limit for minimum contribution to the factor structure, which is greater than or equal to one (Cattell, 1966).

Table 11

Total Variance Explained for the Academic Integrity Survey

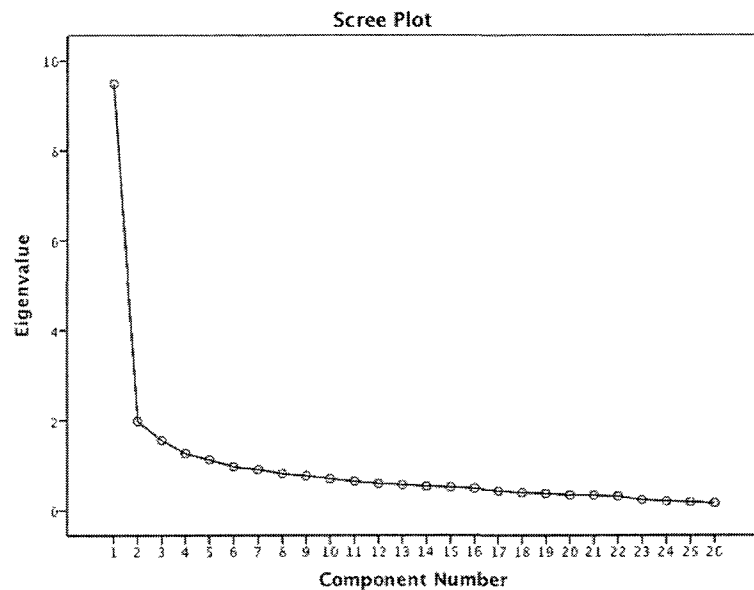
Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	9.489	36.495	36.495
2	1.985	7.633	44.128
3	1.562	6.006	50.135
4	1.266	4.871	55.005
5	1.126	4.333	59.338
6	.974	3.748	63.085
7	.910	3.502	66.587
8	.817	3.141	69.728
9	.771	2.965	72.693
10	.709	2.725	75.418
11	.645	2.479	77.897
12	.602	2.316	80.213
13	.574	2.209	82.422
14	.539	2.072	84.494
15	.520	1.999	86.493
16	.493	1.895	88.388
17	.435	1.672	90.059
18	.397	1.528	91.587
19	.380	1.463	93.050
20	.347	1.334	94.384
21	.340	1.307	95.690
22	.319	1.226	96.916
23	.239	.920	97.836
24	.209	.805	98.641
25	.190	.729	99.370
26	.164	.630	100.000

The appropriateness of the five-factor structure was corroborated by the examination of the scree-plot, as shown in Figure 1. This showed that the last clearly observable drop between plot points was found between component 5 and component

6, with a flattening of slope for the subsequent components. This observation, along with the “Total Variance Explained” table indicates that including more than 5 factors is unlikely to result in a model that explains a significant amount of additional variability in academic dishonesty than the five-factor model.

Figure 1

Scree-Plot



The resulting five factors were then examined for shared themes and assigned construct labels accordingly. The constructs of the five-factor structure were labeled: “Exam and Collaborative Cheating”, “Fabrication”, “Turning in Another’s Work”, “Plagiarism”, and “Technology-Assisted Cheating”. Items were assigned to the construct to which its loading was the highest, provided that it met the minimum criteria for factor loading, which is greater than or equal to 0.30. The final structure resulted in the five factors which each contained items with loadings well above .30.

The construct validity of the five factors extracted from the EFA was further tested using a Confirmatory Factor Analysis (CFA). The remaining 50% of the sample that was not used to test the EFA was used to run the CFA. The CFA was conducted using Maximum Likelihood estimation and AMOS 17.0 structural equation modeling software. The CFA constrains the items of the Academic Integrity Survey to load on the structures that were indicated by the EFA and then tests the fit of the hypothesized model to the observed data. Three fit indices were examined to determine the overall fit of the data, and a fourth was used to compare the competing models.

The three fit indices that were used to examine the overall fit of the five-factor model indicated by the EFA were: the chi-square fit indices (χ^2), Root Mean Error of Approximation (RMSEA), and the Confirmatory Fit Index (CFI). These three indices are commonly used in the evaluation to determine how well a hypothesized structural model reflects the actual relationship between items in the observed data (Kline, 2005). These three fit indices have differing thresholds that are used to indicate the fit of a model, with smaller values chi-square indicating a stronger fit (p-value less than .05), smaller values of the RMSEA also indicate a strong fit (values below .08, with values ranging between 0 and 1), and with larger values of the CFI indicating a strong fit (values above .90 are ideal, values can range between 0 and 1). The Akaike Information Criterion (AIC) was used to examine and compare competing models. This statistic is primarily used for comparing competing models, and although no standard for strong fit exists for this index, lower values generally indicate a stronger-fit when comparing models.

Results of the initial test of the EFA model indicated a marginal fit of the model ($\chi^2=2254.006$, $p < .05$; RMSEA = .087, CFI = .798; AIC=2430.006). None of the three fit

indices were within the acceptable range that would indicate a strong fit of the hypothesized model, although the RMSEA indices were close to the appropriate threshold. Examining the communalities table of the initial EFA indicated that three items in particular may not have been placed in the initial five-factor model and could explain the model's marginal fit. Specifically, the following items "Copying material, almost word for word, from any written source and turning it in as your own work", "Using a false or forged excuse to obtain an extension on a due date or delay taking an exam", and "Fabricating or falsifying a bibliography" appeared to be less explained by the hypothesized factor than the other items. Based on the equally strong loading on the factor 3 (Turning in Another's Work), along with its conceptually strong contribution to that construct, the item named "Copying material, almost word for word, from any written source and turning it in as your own work" was reassigned from factor 4 to factor 3 and the new factor structure was reevaluated.

Results of the adjusted five factor model, shown in Figure 2, demonstrated a significant improvement within the three fit indices compared to the initial model ($\chi^2=1925.797$, $p < .05$; RMSEA = .079, CFI = .832; AIC=2101.797). Notably, the fit index most commonly used for comparing competing models (AIC), showed that the adjusted model was a stronger fit with lower values of the AIC indicating a stronger fit. In addition, the other fit indices also indicated an improved fit with RMSEA moving within the range of "strong fit" and the CFI within the range of "moderate fit" which is between the values of 0.8 and 0.9 (Kline, 2005). Even though the chi-square continued to be significant, this is not uncommon with a sample size as large as the one used for this study and this may simply be an artifact of the sensitivity of the chi-square statistic to

large samples (Kline, 2005). Additional adjustments using the two remaining items previously identified did not significantly improve the model, so the initial adjusted model was accepted and those factors were subsequently used for MANOVA and ANOVA analysis. Separate MANOVAs will be conducted to examine the means of multiple dependent variables while examining single independent variables. When necessary, ANOVAs will be conducted to determine if differences between groups exist for a single dependent variable with one dependent variable. Scheffé Post-Hoc tests will be used when examining differences between more than two groups. Table 12 presents the final structure for the 26 cheating behaviors.

Figure 2

Adjusted Five-Factor Structural Model of the Academic Integrity Survey Using Confirmatory Factor Analysis

chi-sqr=1925.797; p=.000; CFI=.832; RMSEA=.079; AIC=2101.797

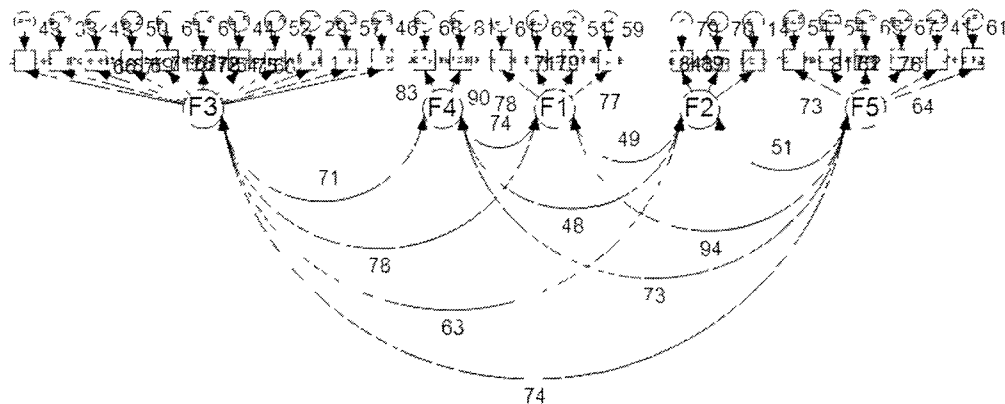


Table 12

Final Five-Factor Structure of the McCabe Academic Integrity Survey (M-AIS) Using Cheating Behaviors

Item	Component				
	1	2	3	4	5
<i>Exam and Collaborative Cheating (EC)</i>					
EC1	.734				
EC2	.639				
EC3	.686				
EC4	.709				
EC5	.740				
EC6	.687				
EC7	.729				
EC8	.702				
EC9	.599				
EC10	.622				
EC11	.585				
<i>Fabrication (F)</i>					
F1		.724			
F2		.697			
<i>Turning in Another's Work (TAW)</i>					
TAW1			.607		
TAW2			.854		
TAW3			.847		
TAW4			.463		
TAW5			.547		
TAW6			.586		
<i>Plagiarism (P)</i>					
P1				.567	
P2				.859	
P3				.869	
<i>Technology-Assisted Cheating (TAC)</i>					
TAC1					.776
TAC2					.666
TAC3					.750
TAC4					.788

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.

As shown in Table 13, Cronbach's alpha was computed for all of the factors and every factor was above the .70 threshold which indicates internal consistency reliability (Leech, Barrett, & Morgan, 2005).

Table 13

Composite Score Test of Reliability for Study Scales

Scale	Cronbach's Alpha
Exam and Collaborative Cheating: Behavior	.869
Fabrication: Behavior	.783
Turning in Another's Work: Behavior	.768
Plagiarism: Behavior	.723
Technology - Assisted Cheating: Behavior	.740
Exam and Collaborative Cheating: Severity	.938
Fabrication: Severity	.937
Turning in Another's Work: Severity	.956
Plagiarism: Severity	.851
Technology-Assisted Cheating: Severity	.940
Academic Integrity Climate Scale (AICS)	.884
Policy Dissemination Scale (PDS)	.927

Descriptive Statistics for All Scales

Descriptive statistics for individual items within each of the twelve scales were calculated and are shown in Appendix N. Descriptive statistics were also computed by splitting learning environment into comparison groups and are shown in Appendix O.

From the 1,760 completed surveys, the number of responses for each item varied between 1,193 responses to 1,742 responses. As previously mentioned in Chapter 3 and to further distinguish the cheating scales; scales labeled with the words "Cheating

Behavior" following the scale name will indicate the self-reported engagement of the cheating behavior while the attitude toward each cheating behavior will be measured using the rating of perceived seriousness and will be labeled with the words "Perceived Severity" following the scale name.

The mean scores for the self-reported cheating behavior scales are shown in Table 14. The scale with the highest mean score was Plagiarism ($M = 1.32$, $SD = .495$), which indicates that these types of behaviors were the most self-reported to be engaged in by students while the least engaged in behaviors were classified under the Turning in Another's Work scale ($M = 1.06$, $SD = .195$).

Table 14

M-AIS Scales Descriptive Statistics, Self-Reported Cheating Behaviors

Scale	n	M*	SD	α
Exam and Collaborative Cheating	1401	1.25	.373	.869
Fabrication	1274	1.13	.375	.783
Turning in Another's Work	1213	1.06	.195	.768
Plagiarism	1287	1.32	.495	.723
Technology-Assisted Cheating	1388	1.07	.228	.740

* Based on a three-point scale.

The mean scores for the perceived severity of the cheating behavior scales are shown in Table 15. The scale with the highest mean score was Turning in Another's Work ($M = 3.35$, $SD = .913$), which indicates that these the types of behaviors were rated to be the most serious form of cheating behavior while the Plagiarism scale was rated the least serious form of cheating ($M = 2.75$, $SD = .915$). The most serious form of cheating

was Turning in Another's Work and had the lowest mean scale score in terms of the frequency in which students report engaging in that cheating behavior; while Plagiarism was rated the least serious form of cheating and was reported to be the most prevalent cheating behavior.

Table 15

M-AIS Scales Descriptive Statistics, Perceived Severity of Cheating Behaviors

Scale	n	M*	SD	α
Exam and Collaborative Cheating	1198	2.98	.788	.938
Fabrication	1157	2.95	1.015	.937
Turning in Another's Work	1153	3.35	.913	.956
Plagiarism	1201	2.75	.915	.851
Technology-Assisted Cheating	1158	3.23	.922	.940

*Based on a four-point scale.

The mean scores for the Policy Dissemination and Academic Integrity Climate scales are shown in Table 16. The Academic Integrity Climate Scale (AICS) is the student's self-reported attitudes toward the climate of academic integrity on the campus. The Policy Dissemination Scale is the frequency that instructors address academic integrity policies to their students as reported by the student.

Table 16

M-AIS Scales Descriptive Statistics, Policy Dissemination and Academic Integrity Climate

Scale	n	M*	SD	α
Policy Dissemination (PDS)	1736	3.70	.983	.927
Academic Integrity Climate (AICS)	1746	3.96	.732	.884

*Based on a five-point scale.

The Exam and Collaborative Cheating scale consists of 11 items. Descriptive statistics for this scale for self-reported cheating behavior are shown in Table 17.

"Working on an assignment with others (in person) when the instructor asked for individual work" was reported as the cheating behavior most often engaged in by students ($M=1.58$, $SD=.798$) while students self-reported engaging in "Using unpermitted handwritten crib notes (or cheat sheets) during a test or exam" the least ($M=1.14$, $SD=.442$). Note that the self-reported levels of engaging in the cheating behaviors are generally low with a value of 1 representing never engaging in the cheating behavior.

Table 17

Exam and Collaborative Cheating Scale Descriptive Statistics, Cheating Behaviors

Item	N	Mean*	Std. Deviation
EC1. Working on an assignment with others (in person) when the instructor asked for individual work.	1480	1.58	.798
EC2. Working on an assignment with others (via email or Instant Messaging) when the instructor asked for individual work.	1462	1.29	.634
EC3. Getting questions or answers from someone who has already taken a test.	1495	1.31	.625
EC4. Helping someone else cheat on a test.	1518	1.17	.480
EC5. Copying from another student during a test with his or her knowledge.	1531	1.18	.490
EC6. Copying from another student during a test without his or her knowledge.	1533	1.16	.477
EC7. Receiving unpermitted help on an assignment.	1510	1.29	.605
EC8. Copying (by hand or in person) another student's homework.	1538	1.42	.720
EC9. Using a false or forged excuse to obtain an extension on a due date or delay taking an exam.	1536	1.22	.529
EC10. Cheating on a test in any other way.	1521	1.15	.449
EC11. Using unpermitted handwritten crib notes (or cheat sheets) during a test or exam.	1496	1.14	.442

* Based on a three-point scale.

Descriptive statistics for this scale for the perceived severity of these behaviors are shown in Table 18. The descriptive statistics reveal that for this scale, "Copying from another student during a test without his or her knowledge" was the most strongly rated item for cheating ($M=3.42$, $SD=.997$) and "Working on an assignment with others (in person) when the instructor asked for individual work" was rated the least significant cheating behavior ($M=2.16$, $SD=.979$).

Table 18

Exam and Collaborative Cheating Scale Descriptive Statistics, Perceived Severity

Item	N	Mean*	Std. Deviation
Working on an assignment with others (in person) when the instructor asked for individual work.	1278	2.16	.979
Working on an assignment with others (via email or Instant Messaging) when the instructor asked for individual work.	1279	2.22	1.007
Getting questions or answers from someone who has already taken a test.	1244	3.06	1.075
Helping someone else cheat on a test.	1257	3.35	.980
Copying from another student during a test with his or her knowledge.	1274	3.35	.984
Copying from another student during a test without his or her knowledge.	1264	3.42	.997
Receiving unpermitted help on an assignment.	1246	2.61	1.079
Copying (by hand or in person) another student's homework.	1267	2.86	1.037
Using a false or forged excuse to obtain an extension on a due date or delay taking an exam.	1250	2.68	1.126
Cheating on a test in any other way.	1253	3.27	1.018
Using unpermitted handwritten crib notes (or cheat sheets) during a test or exam.	1246	3.31	1.009

* Based on a four-point scale.

The Fabrication scale consists of 2 items. Descriptive statistics for this scale for the students self-reported cheating behavior are shown in Table 19. Both items within

this scale represent very low levels of self-reported cheating behaviors with students self-reporting engaging in the "Fabricating or falsifying lab data" only slightly more frequently ($M=1.17$, $SD=.474$) than "Fabricating or falsifying research data" ($M=1.12$, $SD=.399$).

Table 19

Fabrication Scale Descriptive Statistics, Cheating Behaviors

Item	N	Mean*	Std. Deviation
F1. Fabricating or falsifying lab data	1354	1.17	.474
F2. Fabricating or falsifying research data	1353	1.12	.399

* Based on a three-point scale.

Descriptive statistics for this scale representing perceived seriousness of each cheating behavior are shown in Table 20. The descriptive statistics reveal that for this scale, "Fabricating or falsifying research data" was most strongly rated as cheating ($M=2.99$, $SD=1.043$) compared to "Fabricating or falsifying lab data", as least strongly identified as cheating ($M=2.89$, $SD=1.060$).

Table 20

Fabrication Scale Descriptive Statistics, Perceived Severity

Item	N	Mean*	Std. Deviation
Fabricating or falsifying lab data	1234	2.89	1.060
Fabricating or falsifying research data	1193	2.99	1.043

* Based on a four-point scale.

The Turning in Another's Work scale consists of 6 items. Descriptive statistics for this scale of self-reported cheating behavior are shown in Table 21. The two cheating behaviors most often self-reported were "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" ($M=1.10$, $SD=.357$) and "Copying material, almost word for word, from any written source and turning it in as your own work" ($M=1.10$, $SD=.361$) while the least reported behavior was "Submitting a paper you purchased or obtained from a Web site (such as www.schoolsucks.com) and claim it as your own work" ($M=1.04$, $SD=.247$).

Table 21

Turning in Another's Work Scale Descriptive Statistics, Cheating Behaviors

Item	N	Mean*	Std. Deviation
TAW1. In a course requiring computer work, copying another student's program rather than writing your own.	1325	1.09	.361
TAW2. Turning in a paper from a "paper mill" (a paper written and previously submitted by another student) and claiming it as your own work.	1490	1.06	.298
TAW3. Submitting a paper you purchased or obtained from a Web site (such as www.schoolsucks.com) and claim it as your own work.	1497	1.04	.247
TAW4. Turning in work done by someone else.	1522	1.09	.349
TAW5. 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.	1515	1.10	.357
TAW6. Copying material, almost word for word, from any written source and turning it in as your own work.	1518	1.10	.361

* Based on a three-point scale.

Descriptive statistics for this scale are shown in Table 22. The descriptive statistics reveal that for this scale, "Submitting a paper you purchased or obtained from a Web site (such as www.schoolsucks.com) and claim it as your own work" was rated the most serious cheating behavior ($M=1.04$, $SD=.247$) and that "In a course requiring computer work, copying another student's program rather than writing your own" was rated the least serious ($M=3.18$, $SD=1.052$).

Table 22

Turning in Another's Work Scale Descriptive Statistics, Perceived Severity

Item	N	Mean*	Std. Deviation
In a course requiring computer work, copying another student's program rather than writing your own.	1235	3.18	1.052
Turning in a paper from a "paper mill" (a paper written and previously submitted by another student) and claiming it as your own work.	1253	3.42	1.017
Submitting a paper you purchased or obtained from a Web site (such as www.schoolsucks.com) and claim it as your own work.	1248	3.45	1.003
Turning in work done by someone else.	1251	3.27	1.056
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.	1256	3.26	.999
Copying material, almost word for word, from any written source and turning it in as your own work.	1266	3.40	1.003

* Based on a four-point scale.

The Plagiarism scale consists of 3 items. Descriptive statistics for this scale for self-reported cheating behavior are shown in Table 23. The cheating behavior most often self-reported by students was "Paraphrasing or copying a few sentences from a book, magazine, or journal (not electronic or Web-based)" ($M=1.48$, $SD=.744$) while the least reported behavior was "Fabricating or falsifying a bibliography" ($M=1.11$, $SD=.383$).

Table 23

Plagiarism Scale Descriptive Statistics, Cheating Behaviors

Item	N	Mean*	Std. Deviation
P1. Fabricating or falsifying a bibliography.	1378	1.11	.383
P2. Paraphrasing or copying a few sentences from a book, magazine, or journal (not electronic or Web-based).	1487	1.48	.744
P3. Paraphrasing or copying a few sentences of material from an electronic source - e.g., the Internet - without footing them in a paper you submitted.	1493	1.45	.718

* Based on a three-point scale.

Descriptive statistics for this scale on the students perceived seriousness of each cheating behavior are shown in Table 24. The descriptive statistics reveal that for this scale, "Paraphrasing or copying a few sentences of material from an electronic source - e.g., the Internet - without footing them in a paper you submitted" ($M=2.76$, $SD=1.068$) was the most strongly rated cheating behavior ($M=1.04$, $SD=.247$) and that "In a course requiring computer work, copying another student's program rather than writing your own" was the least strongly rated item ($M=3.18$, $SD=1.052$).

Table 24

Plagiarism Scale Descriptive Statistics, Perceived Severity

Item	N	Mean*	Std. Deviation
Fabricating or falsifying a bibliography.	1267	2.73	1.068
Paraphrasing or copying a few sentences from a book, magazine, or journal (not electronic or Web-based).	1269	2.66	1.043
Paraphrasing or copying a few sentences of material from an electronic source - e.g., the Internet - without footing them in a paper you submitted.	1266	2.76	1.053

* Based on a four-point scale.

The Technology-Assisted Cheating scale consists of 4 items. Descriptive statistics for this scale are shown in Table 25. The cheating behavior most often self-reported was "Copying (using digital means such as Instant Messaging or email) another student's homework" ($M=1.11$, $SD=.411$) while the least reported behaviors, with the same mean scores, were "Using digital technology (such as text messaging) to get unpermitted help from someone during a test or examination" ($M=1.06$, $SD=.306$) and "Using an electronic / digital device as an unauthorized aid during an exam" ($M=1.06$, $SD=.291$).

Table 25

Technology-Assisted Cheating Scale Descriptive Statistics, Cheating Behaviors

Item	N	Mean*	Std. Deviation
TAC1. Using digital technology (such as text messaging) to get unpermitted help from someone during a test or examination.	1513	1.06	.306
TAC2. Copying (using digital means such as Instant Messaging or email) another student's homework.	1507	1.11	.411
TAC3. Using electronic crib notes (stored in PDA, phone, or calculator) to cheat on a test or exam.	1507	1.10	.365
TAC4. Using an electronic /digital device as an unauthorized aid during an exam.	1505	1.06	.291

* Based on a three-point scale.

Descriptive statistics for this scale are shown in Table 26. The descriptive statistics reveal that for this scale, "Using digital technology (such as text messaging) to get unpermitted help from someone during a test or examination" was the most seriously rated cheating behavior ($M=3.33$, $SD=1.036$) and that "Copying (using digital means such as Instant Messaging or email) another student's homework" was the least seriously rated item ($M=2.85$, $SD=1.067$).

Table 26

Technology-Assisted Cheating Scale Descriptive Statistics, Perceived Severity

Item	N	Mean*	Std. Deviation
Using digital technology (such as text messaging) to get unpermitted help from someone during a test or examination.	1271	3.33	1.036
Copying (using digital means such as Instant Messaging or email) another student's homework.	1251	2.85	1.067
Using electronic crib notes (stored in PDA, phone, or calculator) to cheat on a test or exam.	1254	3.29	1.028
Using an electronic /digital device as an unauthorized aid during an exam.	1224	3.30	1.025

* Based on a four-point scale.

The Academic Integrity Climate scale consists of 6 items. Descriptive statistics for this scale for the students rating of the Academic Integrity Climate are shown in Table 27. The items within this scale used a five-point Likert-type scale with 1 representing a very low rating and 5 representing very high (the ratings were ordered as: Very Low, Low, Medium, High, Very High). Students rated the student support of the academic integrity policies with the lowest score ($M=3.59$, $SD=.988$) and rated "The faculty's understanding of these policies" with the highest score ($M=4.32$, $SD=.812$).

Table 27

Academic Integrity Climate Scale, Descriptive Statistics

Item: Please tell us about the academic environment. How would you rate:	N	Mean*	Std. Deviation
The severity of penalties for cheating at [college]	1742	3.96	.931
The average student's understanding of campus policies concerning student cheating?	1739	3.79	1.005
The faculty's understanding of these policies?	1736	4.32	.812
Student support of these policies?	1731	3.59	.988
Faculty support of these policies?	1728	4.22	.847
The effectiveness of these policies?	1728	3.88	.937

* Based on a five-point scale.

The Policy Dissemination scale consists of 6 items. Descriptive statistics for this scale for the students self-reported cheating behavior are shown in Table 28. The items within this scale used a five-point Likert-type scale with 1 representing a rating of never and 5 representing very often (the ratings were ordered as: Never, Very Seldom, Seldom/Sometimes, Often, Very Often). The most often reported policies discussed by faculty members were "Plagiarism" ($M=3.83$, $SD=1.099$), "Proper citation / referencing of written sources" ($M=3.83$, $SD=1.104$), and "Proper citation / referencing of Internet Sources" ($M=3.83$, $SD=1.126$) while the least reported policies discussed by instructors was "Falsifying / fabricating course lab data" ($M=3.48$, $SD=1.260$).

Table 28

Policy Dissemination Scale, Descriptive Statistics

Item: In the past year, how often, on average, did your instructors discuss policies concerning:	N	Mean*	Std. Deviation
Plagiarism	1730	3.83	1.099
Guidelines on group or collaboration	1708	3.65	1.074
Proper citation / referencing of written sources	1718	3.83	1.104
Proper citation / referencing of Internet sources	1712	3.83	1.126
Falsifying / fabricating course lab data	1710	3.48	1.260
Falsifying / fabricating research data	1714	3.54	1.246

* Based on a five-point scale.

*Results by Research Question**Research Question 1: Hypotheses Testing Focusing on Self-Reported Cheating Behaviors*

Using the composite scores of the validated factors of cheating, the research questions and main hypotheses were examined using MANOVA analysis.

Hypothesis one through four sought to answer research question 1: *To what extent do online and face-to-face students differ in their self-reported behaviors and attitudes toward academic integrity and do self-reported behaviors and attitudes vary by student characteristics (age, gender, and program of study)?*

Hypothesis one stated that there will be no difference in the self-reported academic dishonesty between online students and traditional, face-to-face students. A MANOVA analysis was conducted and indicated that significant differences between the Learning Environment (LE) groups did not exist when the covariates were not controlled

for (Pillai's Trace = .010, $F=1.684$, $p=.136$). As shown in Table 29, the ANOVA table, which present the univariate comparisons of marginal means, indicated that only scores for the Exam and Collaborative Cheating composite were significantly different between LE groups ($F=4.383$, $p < .05$). When the mean comparisons of cheating types was examined between learning environments, as shown in Table 30, the respondents from the traditional LE reported higher scores for Exam and Collaborative cheating ($M=13.194$, $SE=.209$) than respondents from the online LE ($M=12.399$, $SE=.317$). Note that these results must be interpreted with caution given that the results of the multivariate analysis revealed no difference between groups for cheating overall.

Table 29

Univariate Comparisons of Cheating Behaviors Between Learning Environments

Dependent Variable		SS	df	Mean Square	F	Sig.
Exam and Collaborative Cheating - Behavior	Contrast	56.045	1	56.045	4.383	.037
	Error	10612.094	830	12.786		
Fabrication - Behavior	Contrast	.355	1	.355	.753	.386
	Error	391.360	830	.472		
Turning in Another's Work - Behavior	Contrast	.005	1	.005	.008	.929
	Error	562.517	830	.678		
Plagiarism - Behavior	Contrast	.006	1	.006	.003	.956
	Error	1682.374	830	2.027		
Technology-Assisted Cheating - Behavior	Contrast	.335	1	.335	.400	.527
	Error	694.882	830	.837		

Table 30

Marginal Means Comparisons of Cheating Types Between Learning Environments - Cheating Behaviors

Dependent Variable	Learning Environment Status	95% Confidence Interval			
		Mean	Std. Error	Lower Bound	Upper Bound
Exam and Collaborative Cheating -Behavior	Traditional	13.194	.209	12.784	13.603
	Online	12.399	.317	11.776	13.022
Fabrication - Behavior	Traditional	2.215	.040	2.136	2.293
	Online	2.151	.061	2.032	2.271
Turning in Another's Work - Behavior	Traditional	5.218	.048	5.124	5.313
	Online	5.210	.073	5.067	5.354
Plagiarism - Behavior	Traditional	3.898	.083	3.735	4.061
	Online	3.890	.126	3.642	4.138
Technology-Assisted Cheating - Behavior	Traditional	5.194	.053	5.089	5.298
	Online	5.255	.081	5.096	5.414

Hypothesis two stated that younger students would be more likely to self-report higher levels of academic dishonesty than older students, and that this would not vary based on learning environment. A MANOVA analysis was conducted and results indicated that significant differences between existed between age groups (Pillai's Trace = .032, $F=2.720$, $p=.003$). As shown in Table 31, ANOVA analysis indicated that four of five types of reported cheating were significantly different between age groups, with only the *Turning in Another's Work* scale proving to be non-significant.

Table 31

Univariate Comparisons of Cheating Behaviors Between Age Groups

Dependent Variable		SS	df	Mean Square	F	Sig.
Exam and Collaborative Cheating - Behavior	Contrast	258.186	2	129.093	10.097	.000
	Error	10612.094	830	12.786		
Fabrication - Behavior	Contrast	2.847	2	1.423	3.019	.049
	Error	391.360	830	.472		
Turning in Another's Work - Behavior	Contrast	2.225	2	1.112	1.641	.194
	Error	562.517	830	.678		
Plagiarism - Behavior	Contrast	16.093	2	8.047	3.970	.019
	Error	1682.374	830	2.027		
Technology-Assisted Cheating - Behavior	Contrast	5.865	2	2.932	3.503	.031
	Error	694.882	830	.837		

The mean comparisons for each type of cheating is presented in Table 32 and can be interpreted to mean that younger respondents self-reported more cheating behaviors. This remained true even for the *Another's Work*, although this finding must be interpreted with caution since no significant differences were found between groups in the ANOVA analysis (Table 32).

Table 32

Marginal Means Comparisons of Cheating Types Between Age Groups - Cheating Behaviors

Dependent Variable	Age	95% Confidence Interval			
		Mean	Std. Error	Lower Bound	Upper Bound
Exam and Collaborative Cheating -Behavior	18 to 21 Years Old	13.920	.291	13.349	14.491
	22 to 35 years old	12.558	.270	12.028	13.087
	36 years and older	11.826	.426	10.991	12.662
Fabrication - Behavior	18 to 21 Years Old	2.300	.056	2.190	2.410
	22 to 35 years old	2.168	.052	2.067	2.270
	36 years and older	2.072	.082	1.912	2.232
Turning in Another's Work - Behavior	18 to 21 Years Old	5.306	.067	5.174	5.437
	22 to 35 years old	5.239	.062	5.117	5.361
	36 years and older	5.091	.098	4.898	5.283
Plagiarism - Behavior	18 to 21 Years Old	4.171	.116	3.944	4.399
	22 to 35 years old	3.767	.107	3.556	3.978
	36 years and older	3.734	.169	3.402	4.067
Technology-Assisted Cheating - Behavior	18 to 21 Years Old	5.346	.074	5.200	5.492
	22 to 35 years old	5.306	.069	5.170	5.441
	36 years and older	5.010	.109	4.796	5.224

Post-hoc / pairwise comparisons of age groups were then run to further delineate the differences between age groups. Table 33 shows the differences between specific groups vary somewhat between different types of cheating, with the youngest group generally self-reporting the most cheating behavior.

Table 33

Post-hoc / Pairwise Mean Age Group Comparisons of Cheating Behaviors

Dependent Variable	(I) Age	(J) Age	Mean Diff. (I-J)	SE	Sig. ^a
Exam and Collaborative Cheating - Behavior	18 to 21 Years Old	22 to 35 years old	1.362*	.397	.002
		36 years and older	2.094*	.516	.000
	22 to 35 years old	18 to 21 Years Old	-1.362*	.397	.002
		36 years and older	.732	.504	.441
	36 years and older	18 to 21 Years Old	-2.094*	.516	.000
		22 to 35 years old	-.732	.504	.441
	Fabrication - Behavior	18 to 21 Years Old	.132	.076	.251
		36 years and older	.228	.099	.065
	22 to 35 years old	18 to 21 Years Old	-.132	.076	.251
		36 years and older	.096	.097	.963
	36 years and older	18 to 21 Years Old	-.228	.099	.065
		22 to 35 years old	-.096	.097	.963
Turning in Another's Work - Behavior	18 to 21 Years Old	22 to 35 years old	.067	.091	1.000
		36 years and older	.215	.119	.211
	22 to 35 years old	18 to 21 Years Old	-.067	.091	1.000
		36 years and older	.148	.116	.604
	36 years and older	18 to 21 Years Old	-.215	.119	.211
		22 to 35 years old	-.148	.116	.604
Plagiarism - Behavior	18 to 21 Years Old	22 to 35 years old	.405*	.158	.032
		36 years and older	.437	.205	.101
	22 to 35 years old	18 to 21 Years Old	-.405*	.158	.032
		36 years and older	.033	.201	1.000
	36 years and older	18 to 21 Years Old	-.437	.205	.101
		22 to 35 years old	-.033	.201	1.000
Technology - Assisted Cheating - Behavior	18 to 21 Years Old	22 to 35 years old	.040	.102	1.000
		36 years and older	.336*	.132	.033
	22 to 35 years old	18 to 21 Years Old	-.040	.102	1.000
		36 years and older	.296	.129	.066
	36 years and older	18 to 21 Years Old	-.336*	.132	.033
		22 to 35 years old	-.296	.129	.066

* Mean Difference is significant ($p < .05$).

a. Adjustment for multiple comparisons: Bonferroni.

With respect to *Exam and Collaborative* cheating behaviors, the youngest group aged between 18 to 21 years old ($M = 12.558$, $SE=.270$) self-reported significantly more cheating behaviors than either the 22 to 35 years old ($M = 13.920$, $SE=.291$, $p = .002$) or the 36 years and older group ($M=11.826$, $SE = .426$, $p <.001$). The two older groups did self-report significantly different *Exam and Collaborative* cheating scores from one another ($p >.05$).

Differences between age groups for *Fabrication* cheating behaviors were less robust. In fact, although the univariate ANOVA shown in Table 31 indicated that the difference between groups for cheating overall was significant ($F = 3.019$, $p = .049$), none of the pairwise comparisons were able to produce a significant difference. While the youngest group, ages 18 to 21 years old, continued to show the highest rate of self-reported cheating ($M = 2.300$, $SE=.056$), the difference between the group's score and the score of the lowest reported group, ages 36 and older, ($M=2.072$, $SE=.082$) only approached significance ($p = .065$). Respondents between the ages of 22 and 35 were not significantly different from either the oldest or youngest groups ($M = 2.168$, $SE=.052$, $p >.05$).

Differences between age groups for *Technology – Assisted* cheating behaviors showed patterns similar to *Fabrication*, although it was somewhat stronger. Consistent with the overall trend, the youngest group showed the highest rate of self-reported cheating ($M = 5.34$, $SE=.074$), the differences between the group's score and that of the lowest reported group, 36 years and older ($M = 5.010$, $SE = .082$), was statistically significant ($p = .033$). Respondents who were 22 to 35 year old ($M=5.30$, $SE=.069$) were not significantly different from either the oldest or youngest group ($p > .05$).

An examination of the *Plagiarism* scale reveals that the youngest group (18 to 21 years old) self-reported the most cheating behaviors ($M = 4.171$, $SE = .116$), although only the difference between the youngest and the 22 to 35 year old group ($M = 3.767$, $SE = .107$) was statistically significant ($p = .032$). The oldest group continued to show the lowest score for self-reported cheating as indicated on the *Plagiarism* scale ($M = 3.734$, $SE = .169$). This unusual occurrence of the greater difference having a lower p-value than the slightly smaller difference is likely an effect of the smaller standard of error. There was not a statistical difference found between 22 to 35 year old respondents and 36 years and older respondents ($p > .05$).

The third hypothesis stated that male students would be more likely to self-report higher levels of academic dishonesty than female students, and that this would not vary based on the learning environment. Results of the MANOVA analysis indicated no significant difference was found for gender as males did not significantly differ from females on overall cheating (Pillai's Trace = .004, $F = .720$, $p > .05$). Since no multivariate effects were found, follow up univariate analyses were not reported.

The fourth hypothesis related to research question one stated that business majors would be more likely to self-report higher levels of academic dishonesty than respondents of other majors, and that this would not vary based on learning environment. Results of the MANOVA analysis indicated significant differences between major groups (Pillai's Trace = .030, $F = 1.685$, $p = .047$). As shown in Table 34, *Health Sciences and Science* students tended to self-report the most cheating, having the highest marginal mean for all five cheating types. However, as shown in Table 35, univariate ANOVA analysis was conducted and results indicated that only one of five types of cheating were significantly

different between major groups, only the *Plagiarism* scale proved to be significant ($F=13.702$, $p < .001$).

Post-hoc analysis was then conducted and results are shown in Table 36. The analysis shows that a higher marginal mean reported for cheating in the *Health Sciences and Sciences* group ($M = 4.395$, $SE=.126$) accounted for the majority of the variability. This group was also significantly higher than the *Business & Technology* group ($M = 3.561$, $SE = .157$, $p < .001$), the *Education, Liberal Arts, & Public Services* group ($M = 3.818$, $SE = .137$, $p=.012$), and the *Other & Decided* group ($M = 3.796$, $SE = .182$, $p = .042$). None of the remaining three majors differed significantly from one another.

Table 34

Marginal Mean Comparisons of Cheating Types Between Major Groups - Cheating Behaviors

Dependent Variable	Major	95% Confidence Interval			
		Mean	SE	Lower Bound	Upper Bound
Exam and Collaborative Cheating - Behavior	Business & Technology	12.837	.394	12.064	13.611
	Health Sciences & Sciences	13.382	.316	12.762	14.003
	Education, Liberal Arts, & Public Service	12.455	.343	11.782	13.129
	Other & Undecided	12.449	.457	11.552	13.346
Fabrication - Behavior	Business & Technology	2.143	.076	1.995	2.292
	Health Sciences & Sciences	2.321	.061	2.201	2.440
	Education, Liberal Arts, & Public Service	2.182	.066	2.053	2.312
	Other & Undecided	2.083	.088	1.911	2.255
Turning in Another's Work - Behavior	Business & Technology	5.186	.091	5.008	5.364
	Health Sciences & Sciences	5.351	.073	5.208	5.494
	Education, Liberal Arts, & Public Service	5.187	.079	5.032	5.342
	Other & Undecided	5.131	.105	4.924	5.337
Plagiarism - Behavior	Business & Technology	3.561	.157	3.253	3.869
	Health Sciences & Sciences	4.395	.126	4.148	4.642
	Education, Liberal Arts, & Public Service	3.818	.137	3.550	4.086
	Other & Undecided	3.796	.182	3.439	4.154
Technology - Assisted Cheating - Behavior	Business & Technology	5.191	.101	4.993	5.389
	Health Sciences & Sciences	5.357	.081	5.198	5.515
	Education, Liberal Arts, & Public Service	5.243	.088	5.071	5.415
	Other & Undecided	5.111	.117	4.882	5.341

Table 35

Univariate Comparisons of Cheating Behaviors Between Major Groups

Dependent Variable		SS	df	Mean Square	F	Sig.
Exam and Collaborative Cheating - Behavior	Contrast	63.077	3	21.026	1.644	.178
	Error	10612.094	830	12.786		
Fabrication - Behavior	Contrast	2.986	3	.995	2.111	.097
	Error	391.360	830	.472		
Turning in Another's Work - Behavior	Contrast	2.838	3	.946	1.396	.243
	Error	562.517	830	.678		
Plagiarism - Behavior	Contrast	41.107	3	13.702	6.760	.000
	Error	1682.374	830	2.027		
Technology - Assisted Cheating - Behavior	Contrast	2.932	3	.977	1.168	.321
	Error	694.882	830	.837		

Table 36

Post-hoc / Pairwise Mean Major Group Comparisons of Plagiarism Cheating Behaviors

(I) Recoded Major Variable	(J) Recoded Major Variable	(I-J)	SE	Sig.
Business & Technology	Health Sciences & Sciences	-.834	.201	.000
	Education, Liberal Arts, & Public Service	-.257	.208	1.000
	Other & Undecided	-.235	.240	1.000
Health Sciences & Sciences	Business & Technology	.834	.201	.000
	Education, Liberal Arts, & Public Service	.576	.186	.012
	Other & Undecided	.598	.221	.042
Education, Liberal Arts, & Public Service	Business & Technology	.257	.208	1.000
	Health Sciences & Sciences	-.576	.186	.012
	Other & Undecided	.022	.228	1.000
Other & Undecided	Business & Technology	.235	.240	1.000
	Health Sciences & Sciences	-.598	.221	.042
	Education, Liberal Arts, & Public Service	-.022	.228	1.000

Research Question 1: Hypotheses Testing Focusing on Self-Reported Perceived Severity of Cheating Behaviors

The second set of hypotheses testing focuses on the perceived severity of cheating behaviors and these subsequent hypotheses will be denoted by appending a (b) to the original hypotheses that focused on the behavior toward academic dishonesty.

Hypothesis 1b stated that there would be no difference between traditional, face-to-face students and online students in their self-reported attitudes of severity related to types of academic dishonesty. A MANOVA was conducted to examine whether respondents from the online learning group significantly differed from individuals from the face-to-face, traditional learning group. The results failed to reveal significant differences between the two groups (Pillai's Trace = .009, $F = .730$, $p > .05$). Since no multivariate effects were found, follow-up analysis was not completed.

Hypothesis 2b stated that older students would be more likely to self-report higher levels of perceived severity of academic dishonesty than younger students, and that this would not vary based on learning environment. A MANOVA was performed and indicated that significant differences between age groups existed (Pillai's Trace = .059, $F=5.511$, $p < .001$). As shown in Table 37, univariate ANOVA analysis indicated that three of the five types of cheating scales were significantly different between age groups, the scales for *Turning in Another's Work* and *Plagiarism* proved to be non-significant.

Table 37

Univariate Comparisons of Perceived Severity of Cheating Behaviors Between Age Groups

Dependent Variable		SS	df	Mean Square	F	Sig.
Exam and Collaborative Cheating - Severity	Contrast	1803.661	2	901.830	12.309	.000
	Error	66378.656	906	73.266		
Fabrication - Severity	Contrast	78.298	2	39.149	10.281	.000
	Error	3449.965	906	3.808		
Turning in Another's Work - Severity	Contrast	113.621	2	56.810	2.796	.062
	Error	18410.227	906	20.320		
Plagiarism -Severity	Contrast	23.259	2	11.630	1.585	.206
	Error	6647.926	906	7.338		
Technology-Assisted Cheating -Severity	Contrast	254.742	2	127.371	6.414	.002
	Error	17992.544	906	19.859		

The mean comparisons between the perceived severity of each type of cheating are presented in Table 38 and indicate that older respondents reported perceiving cheating behaviors as more severe than their younger counterparts.

Table 38

Marginal Mean Comparisons of Perceived Severity of Cheating Behaviors Between Age Groups

Dependent Variable	Recoded Age Variable	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Exam and Collaborative Cheating - Severity	18 to 21 Years Old	30.225	.806	28.643	31.808
	22 to 35 years old	34.430	.640	33.173	35.687
	36 and older	36.453	1.194	34.110	38.796
Fabrication - Severity	18 to 21 Years Old	5.339	.184	4.978	5.700
	22 to 35 years old	6.206	.146	5.919	6.492
	36 and older	6.647	.272	6.113	7.182
Turning in Another's Work - Severity	18 to 21 Years Old	16.407	.425	15.574	17.240
	22 to 35 years old	17.437	.337	16.775	18.099
	36 and older	17.999	.629	16.765	19.232
Plagiarism - Severity	18 to 21 Years Old	7.877	.255	7.376	8.378
	22 to 35 years old	8.427	.203	8.029	8.825
	36 and older	8.445	.378	7.704	9.187
Technology-Assisted Cheating - Severity	18 to 21 Years Old	15.477	.420	14.654	16.301
	22 to 35 years old	17.065	.333	16.411	17.720
	36 and older	17.808	.622	16.589	19.028

As shown in Table 39, post-hoc / pair-wise comparisons of age groups were calculated to further delineate the differences that were found to be significant in the ANOVA table (Table 37). In terms of *Exam and Collaborative* cheating, students within the age group of 18 to 21 years old reported significantly lower perceptions of severity ($M = 30.225$, $SE = .806$) than both the 22 to 35 year old group ($M = 34.430$, $SE = .640$, $p < .001$) and the 36 years old and over group ($M = 36.453$, $SE = 1.194$, $p < .001$). There was not a significant difference between the two older groups ($p = .407$). A similar

pattern emerged for both *Fabrication* cheating and *Technology-Assisted* cheating, with the youngest group self-reporting the lowest perceived severity score and the two older groups showing no significant difference from one another (see Table 39).

Table 39

Post-hoc / Pairwise Mean Age Group Comparison, Perceived Severity of Cheating Behaviors

Dependent Variable	(I) Recoded Age Variable	(J) Recoded Age Variable	(I-J)	SE	Sig.
Exam and Collaborative Cheating - Severity	18 to 21 Years Old	22 to 35 years old	-4.204*	1.030	.000
		36 and older	-6.228*	1.440	.000
	22 to 35 years old	18 to 21 Years Old	4.204*	1.030	.000
		36 and older	-2.023	1.355	.407
	36 and older	18 to 21 Years Old	6.228*	1.440	.000
		22 to 35 years old	2.023	1.355	.407
Fabrication - Severity	18 to 21 Years Old	22 to 35 years old	-.867*	.235	.001
		36 and older	-1.309*	.328	.000
	22 to 35 years old	18 to 21 Years Old	.867*	.235	.001
		36 and older	-.442	.309	.459
	36 and older	18 to 21 Years Old	1.309*	.328	.000
		22 to 35 years old	.442	.309	.459
Turning in Another's Work - Severity	18 to 21 Years Old	22 to 35 years old	-1.030	.542	.173
		36 and older	-1.592	.759	.109
	22 to 35 years old	18 to 21 Years Old	1.030	.542	.173
		36 and older	-.562	.713	1.000
	36 and older	18 to 21 Years Old	1.592	.759	.109
		22 to 35 years old	.562	.713	1.000
Plagiarism - Severity	18 to 21 Years Old	22 to 35 years old	-.550	.326	.275
		36 and older	-.568	.456	.639
	22 to 35 years old	18 to 21 Years Old	.550	.326	.275
		36 and older	-.018	.429	1.000
	36 and older	18 to 21 Years Old	.568	.456	.639
		22 to 35 years old	.018	.429	1.000
Technology-Assisted Cheating - Severity	18 to 21 Years Old	22 to 35 years old	-1.588*	.536	.009
		36 and older	-2.331*	.750	.006
	22 to 35 years old	18 to 21 Years Old	1.588*	.536	.009
		36 and older	-.743	.705	.877
	36 and older	18 to 21 Years Old	2.331*	.750	.006
		22 to 35 years old	.743	.705	.877

*. Mean Difference is significant ($p < .05$).

a. Adjustment for multiple comparisons: Bonferroni.

Hypothesis 3b states that female students will be more likely to self-report higher levels of perceived severity toward cheating behaviors than male students, and that this would not vary based on the learning environment. A MANOVA analysis was conducted and indicated that significant differences between males and females existed (Pillai's Trace = .012, $F=2.226$, $p < .05$). As shown in Table 40, an ANOVA analysis followed and indicated that two of the five types of cheating were significantly different between female and male students, with the *Fabrication* and *Plagiarism* scales proving to be significant. For both significant differences, and as a gender trend across the five types of cheating, female students reported higher perceived severity for cheating behaviors compared to male students (Table 41).

Table 40

Univariate Comparisons of Perceived Severity of Cheating Behaviors By Gender

Dependent Variable		SS	df	Mean Square	F	Sig.
Exam and Collaborative Cheating -Severity	Contrast	139.090	1	139.090	1.898	.169
	Error	66378.656	906	73.266		
Fabrication - Severity	Contrast	24.347	1	24.347	6.394	.012
	Error	3449.965	906	3.808		
Turning in Another's Work - Severity	Contrast	22.808	1	22.808	1.122	.290
	Error	18410.227	906	20.320		
Plagiarism - Severity	Contrast	54.618	1	54.618	7.443	.006
	Error	6647.926	906	7.338		
Technology - Assisted Cheating - Severity	Contrast	35.743	1	35.743	1.800	.180

Table 41

Marginal Mean Comparisons of Perceived Severity of Cheating Behaviors Between Gender

Dependent Variable	Gender	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Exam and Collaborative Cheating -Severity	Female	34.351	.465	33.439	35.263
	Male	32.906	.940	31.061	34.752
Fabrication - Severity	Female	6.347	.106	6.140	6.555
	Male	5.743	.214	5.322	6.164
Turning in Another's Work - Severity	Female	17.552	.245	17.072	18.032
	Male	16.967	.495	15.995	17.939
Plagiarism - Severity	Female	8.689	.147	8.400	8.977
	Male	7.783	.298	7.199	8.367
Technology - Assisted Cheating - Severity	Female	17.120	.242	16.646	17.595
	Male	16.388	.490	15.427	17.349

Hypothesis 4b stated that business majors would be more likely to self-report lower levels of perceived severity toward the cheating behaviors than students with other majors, and that this would not vary based on learning environment. A MANOVA was conducted and failed to reveal significant differences among majors between the two learning environments (Pillai's Trace = .019, $F = 1.130$, $p > .05$). Since no significant differences were found, follow-up univariate analyses were not performed.

Research Question 2

Research question two posed the following questions. Does the level of awareness of institutional policies related to academic integrity differ among students enrolled in traditional courses and those enrolled in courses offered online? Subsumed under this research question is the hypothesis which states that the level of awareness of institutional policies related to academic integrity will be different among students enrolled in traditional courses as compared to those enrolled in online courses.

As shown in Table 42, results of MANOVA analysis was conducted and indicate that students enrolled in online courses self-reported more awareness of institutional policies than respondents enrolled in traditional courses (Pillai's Trace = .006, $F=5.459$, $p = .004$). Comparing the outcome variables by learning environments reveals that the students enrolled in the online learning environment reported more awareness of policies and rated the support and understanding for academic integrity to be greater than students in traditional, face-to-face courses (Table 43). As Table 44 shows, univariate ANOVA analysis shows that the differences for both Policy Dissemination and Academic Integrity Climate were significant.

Table 42

Multivariate Comparison of Awareness of Institutional Policies between Learning Environments

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.960	20660.909	2.000	1725.000	.000
	Wilks' Lambda	.040	20660.909	2.000	1725.000	.000
	Hotelling's Trace	23.955	20660.909	2.000	1725.000	.000
	Roy's Largest Root	23.955	20660.909	2.000	1725.000	.000
LE	Pillai's Trace	.006	5.459	2.000	1725.000	.004
	Wilks' Lambda	.994	5.459	2.000	1725.000	.004
	Hotelling's Trace	.006	5.459	2.000	1725.000	.004
	Roy's Largest Root	.006	5.459	2.000	1725.000	.004

Table 43

Univariate Comparisons of Policy Dissemination and Academic Integrity Climate between Learning Environments

Dependent Variable		SS	df	Mean Square	F	Sig.
PDS	Contrast	292.746	1	292.746	8.471	.004
	Error	59645.955	1726	34.557		
AICS	Contrast	133.478	1	133.478	6.928	.009
	Error	33256.273	1726	19.268		

Table 44

Comparison of Marginal Means of Policy Dissemination and Academic Integrity Climate between Learning Environments

Dependent Variable	Learning Environment	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
PDS	Traditional	21.935	.162	21.617	22.254
	Online	22.897	.288	22.333	23.461
AICS	Traditional	23.599	.121	23.361	23.837
	Online	24.248	.215	23.827	24.669

Research Question 3

Research question three poses the following question: What impact does an awareness of the institution's academic integrity policies and the students' attitudes of the academic integrity climate on the campus have on the self-reported behaviors and attitudes of students with regard to academic dishonesty? Two hypotheses were formed under this research question, one for Academic Integrity Climate, measured by the Academic Integrity Climate Scale (AICS) and one using the Policy Dissemination Scale (PDS).

The sixth hypothesis stated that students in the online and traditional, face-to-face learning environment who rate the Academic Integrity Climate higher will be less likely to cheat and more likely to self-report behaviors as cheating. As shown in Table 45, results of the MANCOVA examined the interaction between learning environment and the AICS and showed that no significant interaction was present in the prediction of the cheating behaviors (Pillai's Trace = .003, $F = .459$, $p > .05$). However, a main effect for

AICS was found to generally have a negative association with self-reported cheating behaviors (Pillai's Trace = .044, $F = 8.206$, $p < .001$).

Table 45

MANCOVA Analysis of the Interaction Between Learning Environment and Academic Integrity Climate on Cheating Behaviors

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.593	260.973	5.000	894.000	.000
LE	Pillai's Trace	.003	.479	5.000	894.000	.792
AIC	Pillai's Trace	.044	8.206	5.000	894.000	.000
LE * AIC	Pillai's Trace	.003	.459	5.000	894.000	.807

Because the AICS scale was a continuous predictor, the parameters estimates table was examined to determine whether AICS had any unique predictive abilities on each outcome (see Table 46). The results revealed that all five types of cheating varied significantly with AICS. Additionally, the nature of all five relationships match the overall trend where in AICS was negatively linked to cheating behaviors. The AICS was strongly predictive of *Exam and Collaboration* cheating ($R^2 = .050$, $\beta = -.20$, $t(901) = -3.568$, $p < .001$).

Table 46

Comparison of the Main Effect and Interaction of AICS on Cheating Behaviors

Scale	Parameter	B	SE	t	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Exam and Collaborative Cheating - Behavior	Intercept	17.536	1.394	12.583	.000	14.801	20.271
	[LE=.00]	-.368	1.591	-.231	.817	-3.490	2.754
	[LE=1.00]	0	.	.	.	.	.
	AIC	-.200	.056	-3.568	.000	-.310	-.090
	[LE=.00] * AIC	.049	.064	.757	.449	-.078	.175
	[LE=1.00] * AIC	0	.	.	.	.	.
Fabrication - Behavior	Intercept	2.758	.264	10.438	.000	2.240	3.277
	[LE=.00]	.134	.302	.445	.656	-.458	.726
	[LE=1.00]	0	.	.	.	.	.
	AIC	-.025	.011	-2.348	.019	-.046	-.004
	[LE=.00] * AIC	-.002	.012	-.128	.898	-.026	.022
	[LE=1.00] * AIC	0	.	.	.	.	.
Turning in Another's Work - Behavior	Intercept	6.417	.320	20.060	.000	5.789	7.045
	[LE=.00]	-.408	.365	-1.117	.264	-1.124	.309
	[LE=1.00]	0	.	.	.	.	.
	AIC	-.049	.013	-3.776	.000	-.074	-.023
	[LE=.00] * AIC	.018	.015	1.189	.235	-.011	.047
	[LE=1.00] * AIC	0	.	.	.	.	.
Plagiarism - Behavior	Intercept	5.320	.544	9.782	.000	4.253	6.387
	[LE=.00]	-.198	.621	-.319	.750	-1.416	1.021
	[LE=1.00]	0	.	.	.	.	.
	AIC	-.057	.022	-2.604	.009	-.100	-.014
	[LE=.00] *	.005	.025	.203	.839	-.044	.054
	[LE=1.00] *	0	.	.	.	.	.
Technology-Assisted Cheating-Behavior	Intercept	5.976	.364	16.437	.000	5.263	6.690
	[LE=.00]	-.063	.415	-.153	.878	-.878	.751
	[LE=1.00]	0	.	.	.	.	.
	AIC	-.029	.015	-1.986	.047	-.058	.000
	[LE=.00] *	.003	.017	.187	.852	-.030	.036
	[LE=1.00] *	0	.	.	.	.	.

Hypothesis 6b examined the impact that the academic integrity climate had on the perceived severity of self-reported cheating behaviors. As shown in Table 47, results reflected a similar pattern that was found for the self-reported cheating behaviors. No significant interaction was found between learning environment and academic integrity

climate (Pillai's Trace = .002, $F=4.35$, $p > .05$) but there was a significant main effect for the academic integrity climate which proved to be significant (Pillai's Trace = .028, $F=5.522$, $p < .002$).

Table 47

MANCOVA Analysis of the Interaction Between Academic Integrity Climate and Learning Environment on Perceived Severity of Cheating Behaviors

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.182	43.112	5.000	971.000	.000
LE	Pillai's Trace	.003	.501	5.000	971.000	.776
AICS	Pillai's Trace	.028	5.522	5.000	971.000	.000
LE * AICS	Pillai's Trace	.002	.435	5.000	971.000	.825

The unique predictive effects for the AICS on self-reported perceptions of the severity of cheating behaviors are shown in Table 48. The results can be interpreted to mean that the AICS, representing the academic integrity climate, was positively related to the perception of severity of cheating behaviors although it was only found to be significant for two of the five cheating scales, with a third approaching significance. Table 50 shows that perceived severity of *Exam and Collaborative* cheating ($R^2 = .042$, $\beta = .371$, $t(971) = 2.686$, $p = .007$) and *Plagiarism* cheating ($R^2 = .039$, $\beta = .108$, $t(971) = 2.499$, $p = .013$) were both significantly and positively related to AICS, with the connection between AICS and *Fabrication* cheating approaching significance ($R^2 = .026$, $\beta = .091$, $t(901) = 1.929$, $p = .059$).

Table 48

Comparison of the Main Effect for AICS on the Perceived Severity of Cheating Behaviors

Scale	Parameter	B	Std. Error	t	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Exam and Collaborative Cheating - Severity	Intercept	25.777	3.373	7.642	.000	19.158	32.397
	[LE=.00]	-1.093	3.810	-.287	.774	-8.569	6.384
	[LE=1.00]	0	.	.	.	.	.
	AIS	.371	.138	2.686	.007	.100	.642
	[LE=.00] * AIS	-.061	.156	-.389	.697	-.368	.246
Fabrication - Severity	[LE=1.00] * AIS	0	.	.	.	.	.
	Intercept	4.735	.779	6.080	.000	3.207	6.263
	[LE=.00]	-.524	.880	-.596	.551	-2.250	1.202
	[LE=1.00]	0	.	.	.	.	.
	AIS	.061	.032	1.929	.054	-.001	.124
Turning in Another's Work - Severity	[LE=.00] * AIS	.007	.036	.200	.841	-.064	.078
	[LE=1.00] * AIS	0	.	.	.	.	.
	Intercept	15.029	1.745	8.614	.000	11.605	18.452
	[LE=.00]	-1.270	1.970	-.644	.519	-5.137	2.597
	[LE=1.00]	0	.	.	.	.	.
Plagiarism - Severity	AIS	.118	.071	1.647	.100	-.022	.258
	[LE=.00] * AIS	-.002	.081	-.027	.979	-.161	.157
	[LE=1.00] * AIS	0	.	.	.	.	.
	Intercept	6.088	1.055	5.772	.000	4.018	8.157
	[LE=.00]	-.719	1.191	-.604	.546	-3.056	1.619
Technology- Assisted Cheating- Severity	[LE=1.00]	0	.	.	.	.	.
	AIS	.108	.043	2.499	.013	.023	.192
	[LE=.00] * AIS	.008	.049	.163	.870	-.088	.104
	[LE=1.00] * AIS	0	.	.	.	.	.
	Intercept	14.540	1.736	8.378	.000	11.134	17.946
	[LE=.00]	-1.665	1.960	-.849	.396	-5.512	2.182
	[LE=1.00]	0	.	.	.	.	.
	AIS	.122	.071	1.725	.085	-.017	.262
	[LE=.00] * AIS	.010	.081	.119	.905	-.148	.168
	[LE=1.00] * AIS	0	.	.	.	.	.

The seventh hypothesis examined the link between self-reported cheating behaviors and the Policy Dissemination Scale (PDS), and the degree to which the learning environment would impact self-reported cheating behaviors. As shown in Table 49, results of the MANCOVA analysis failed to reject the null hypothesis. The main effect between policy dissemination and cheating behavior was not significantly greater than zero (Pillai's Trace = .011, $F=2.023$, $p > .05$). In addition, the interaction between the learning environment and policy dissemination was not significant (Pillai's Trace = .003, $F=.550$, $p > .05$). Since no main effects or significant interaction was found, no univariate analyses were performed.

Table 49

MANCOVA Analysis on the Interaction between Policy Dissemination and Learning Environment on Awareness of Institutional Policies

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.687	392.614	5.000	895.000	.000
LE	Pillai's Trace	.003	.518	5.000	895.000	.763
PDS	Pillai's Trace	.011	2.023	5.000	895.000	.073
LE * PDS	Pillai's Trace	.003	.550	5.000	895.000	.738

Hypothesis 7b examined whether policy dissemination had any impact on the perceived severity of cheating behaviors. Results of the MANCOVA analysis revealed a similar pattern to that found for the self-reported cheating behaviors and the academic integrity climate (AICS). As shown in Table 50, no significant interaction was found between the perceived severity of cheating behaviors and policy dissemination (PDS)

(Pillai's Trace = .003, $F=.620$, $p > .05$), but there was a significant main effect for PDS (Pillai's Trace = .031, $F=6.294$, $p < .001$)

Table 50

MANCOVA Analysis of the Interaction Between Policy Dissemination and Learning Environment on Perceived Severity of Cheating Behaviors

Effect		Value	F	df	Error df	Sig.
Intercept	Pillai's Trace	.317	89.848	5.000	968.000	.000
LE	Pillai's Trace	.003	.661	5.000	968.000	.653
PDS	Pillai's Trace	.031	6.294	5.000	968.000	.000
LE * PDS	Pillai's Trace	.003	.620	5.000	968.000	.684

The unique predictive effects for the PDS on self-reported perceptions of the severity of the cheating behaviors are shown in Table 51. Results indicated that the PDS was generally positively related to the perception of severity of the cheating behaviors, although it was only found to be significant for two of the five cheating behaviors. The parameter estimates table. Table 51 shows that the perceived severity of *Exam and Collaborative* cheating ($R^2=.030$, $\beta = .260$, $t(968) = 2.339$, $p = .020$) and *Technology-Assisted Cheating* ($R^2=.041$, $\beta = .120$, $t(968) = 3.481$, $p < .001$) were both statistically significant and positively related to policy dissemination with the connection between PDS and Fabrication cheating approached significance ($R^2=.019$, $\beta = .050$, $t(968) = 1.952$, $p=.051$).

Table 51

Comparison of the Main Effect and Interactions of Policy Dissemination and Learning Environment on the Perceived Severity of Cheating Behaviors

Scale	Parameter	B	Std. Error	t	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Exam and Collaborative Cheating - Severity	Intercept	28.723	2.625	10.940	.000	23.571	33.875
	[LE=.00]	.120	2.910	.041	.967	-5.591	5.831
	[LE=1.00]	0	.	.	.	.	.
	PDS	.260	.111	2.339	.020	.042	.479
	[LE=.00] * PDS	-.118	.124	-.955	.340	-.362	.125
	[LE=1.00] * PDS	0	.	.	.	.	.
Fabrication - Severity	Intercept	5.044	.604	8.346	.000	3.858	6.230
	[LE=.00]	-.041	.670	-.061	.951	-1.355	1.274
	[LE=1.00]	0	.	.	.	.	.
	PDS	.050	.026	1.952	.051	.000	.100
	[LE=.00] * PDS	-.013	.029	-.447	.655	-.069	.043
	[LE=1.00] * PDS	0	.	.	.	.	.
Turning in Another's Work - Severity	Intercept	15.830	1.354	11.689	.000	13.173	18.488
	[LE=.00]	-.480	1.501	-.319	.749	-3.426	2.466
	[LE=1.00]	0	.	.	.	.	.
	PDS	.087	.057	1.523	.128	-.025	.200
	[LE=.00] * PDS	-.037	.064	-.571	.568	-.162	.089
	[LE=1.00] * PDS	0	.	.	.	.	.
Plagiarism - Severity	Intercept	15.466	1.348	11.471	.000	12.821	18.112
	[LE=.00]	-.913	1.494	-.611	.542	-3.845	2.020
	[LE=1.00]	0	.	.	.	.	.
	PDS	.088	.057	1.536	.125	-.024	.200
	[LE=.00] * PDS	-.023	.064	-.361	.718	-.148	.102
	[LE=1.00] * PDS	0	.	.	.	.	.
Technology-Assisted Cheating-Severity	Intercept	5.892	.814	7.241	.000	4.296	7.489
	[LE=.00]	.430	.902	.476	.634	-1.340	2.200
	[LE=1.00]	0	.	.	.	.	.
	PDS	.120	.035	3.481	.001	.052	.188
	[LE=.00] * PDS	-.040	.038	-1.037	.300	-.115	.036
	[LE=1.00] * PDS	0	.	.	.	.	.

Summary

This study used a non-experimental comparative research design that employed survey methodology. This research utilized McCabe's Academic Integrity Survey to determine the self-reported student perceptions of the frequency and severity of various types of cheating by employing an exploratory and confirmatory factor analyses. Since the sample was sufficient in size, it was split into two samples in order to exercise both analyses. The exploratory factor analysis (EFA) was first conducted on one sample to determine the best structure for the data and then the confirmatory factor analysis was conducted on the second sample to validate the structure found in the EFA in order to lower the probability that the structure found in the EFA was found in error.

Once the structure of the data was determined, the research questions were examined using both multivariate and univariate analyses. Multivariate analysis of variance (MANOVA) were used to address the research questions and to examine the means of the multiple dependent variables while examining only one independent variable at a time. When significant effects were found using MANOVA analysis, an analysis of variance (ANOVA) was used to determine whether there were statistically significant differences between groups. When significant differences between groups were found, pairwise comparisons analyses were conducted to illuminate the differences between groups (Tabachnick & Fidell, 2007). Table 54 displays the results of the analyses conducted for the research questions and hypothesis testing.

Table 52

Summary of Research Questions and Hypothesis Testing Findings

Research Question 1: To what extent do online and face-to-face students differ in their self-reported behaviors and attitudes toward academic integrity and do self-reported behaviors and attitudes vary by student characteristics (age, gender, and program of study)?		
Hypothesis	Findings	
H ₁ : no difference in the self-reported behaviors toward academic dishonesty between online students and traditional/ face-to-face students.	Exam and Collaborative Cheating - Behavior	Traditional LE self-reported higher scores than respondents from the online LE
	Fabrication - Behavior	No Difference
	Turning in Another's Work - Behavior	No Difference
	Plagiarism - Behavior	No Difference
H ₂ : younger students would be more likely to self-report higher levels of academic dishonesty than older students, and that this would not vary based on learning environment (Learning Environment by Age interaction).	Technology-Assisted Cheating - Behavior	No Difference
	Exam and Collaborative Cheating - Behavior	Younger respondents reported more cheating
	Fabrication - Behavior	Younger respondents reported more cheating
	Turning in Another's Work - Behavior	No Difference
H ₃ : male students would be more likely to self-report higher levels of academic dishonesty than female students, and that this would not vary based on learning environment (Learning Environment by Gender interaction).	Plagiarism - Behavior	Younger respondents reported more cheating
	Technology-Assisted Cheating - Behavior	Younger respondents reported more cheating
	Exam and Collaborative Cheating - Behavior	No difference
	Fabrication - Behavior	No difference
H ₄ : business majors would be more likely to self-report higher levels of academic dishonesty than respondents with other majors, and that this would not vary based on learning environment (Learning Environment by Major interaction).	Turning in Another's Work - Behavior	No difference
	Plagiarism - Behavior	No difference
	Technology-Assisted Cheating - Behavior	No difference
	Exam and Collaborative Cheating - Behavior	No difference
H ₅ : business majors would be more likely to self-report higher levels of academic dishonesty than respondents with other majors, and that this would not vary based on learning environment (Learning Environment by Major interaction).	Fabrication - Behavior	No difference
	Turning in Another's Work - Behavior	No difference
	Plagiarism - Behavior	Health Sciences and Sciences reported the most cheating
	Technology-Assisted Cheating - Behavior	No difference

Table 54 Continued

Summary of Research Questions and Hypothesis Testing Findings

Hypothesis	Findings	
H _{1b} : no difference in the self-reported perception of severity of academic dishonesty types between online students and traditional/ face-to-face students.	Exam and Collaborative Cheating - Severity	No difference
	Fabrication - Severity	No difference
	Turning in Another's Work - Severity	No difference
	Plagiarism - Severity	No difference
	Technology-Assisted Cheating - Severity	No difference
H _{2b} : younger students would be more likely to self-report higher levels of perceived severity of academic dishonesty than older students, and that this would not vary based on learning environment (Learning Environment by Age interaction).	Exam and Collaborative Cheating - Severity	Older students reported higher level of severity
	Fabrication - Severity	Older students reported higher level of severity
	Turning in Another's Work - Severity	No difference
	Plagiarism - Severity	No difference
	Technology-Assisted Cheating - Severity	Older students reported higher level of severity
H _{3b} : male students would be more likely to self-report higher levels of perceived severity of academic dishonesty than female students, and that this would not vary based on learning environment (Learning Environment by Gender interaction).	Exam and Collaborative Cheating - Severity	No difference
	Fabrication - Severity	Females reported higher perceived severity for cheating behaviors.
	Turning in Another's Work - Severity	No difference
	Plagiarism - Severity	Females reported higher perceived severity for cheating behaviors
	Technology-Assisted Cheating - Severity	Females reported higher perceived severity for cheating behaviors
H _{4b} : business majors would be more likely to self-report higher levels of academic dishonesty than respondents with other majors, and that this would not vary based on learning environment (Learning Environment by Major interaction).	Exam and Collaborative Cheating - Severity	No difference
	Fabrication - Severity	No difference
	Turning in Another's Work - Severity	No difference
	Plagiarism - Severity	No difference
	Technology-Assisted Cheating - Severity	No difference

Table 54 Continued

Summary of Research Questions and Hypothesis Testing Findings

Research Question 2: Does the level of awareness of institutional policies related to academic integrity differ among students enrolled in traditional courses and those enrolled in courses offered online?		
Hypothesis	Findings	
H ₅ : The level of awareness of institutional policies related to academic integrity will be different among students enrolled in traditional courses from those enrolled in online courses.	Online respondents reported more awareness of institutional policies than respondents from the traditional learning environment	
Research Question 3: What impact does an awareness of the institution's academic integrity policies have on the self-reported behaviors and attitudes of students engaging in acts of academic dishonesty?		
Hypothesis	Findings	
H ₆ : Students in the online and traditional face-to-face learning environment who rate the support and understanding of campus academic integrity policies for both faculty and staff, effectiveness of policies, and severity of penalties for cheating as very high will be less likely to cheat and more likely to report behaviors as cheating.	Exam and Collaborative Cheating - Behavior Fabrication - Behavior Turning in Another's Work - Behavior Plagiarism - Behavior Technology-Assisted Cheating - Behavior	AICS was especially predictive AICS is negatively linked AICS is negatively linked AICS is negatively linked AICS is negatively linked
H _{6b} : Examined the impact of AICS on perceived severity of cheating behaviors.	Exam and Collaborative Cheating - Severity Fabrication - Severity Turning in Another's Work - Severity Plagiarism - Severity Technology-Assisted Cheating - Severity	Positively related to AICS Approaching positive relation No relation Positively related to AICS No relation
H ₇ : Examined the link between the self-reported cheating behaviors and Policy Dissemination System (PDS), and the degree that learning environment would impact this link.	The main effect between PDS and cheating behavior was not significantly greater than zero and the interaction between learning environment and PDS was not significant.	
H _{7b} : Examined the impact of PDS on perceived severity of cheating behaviors.	Exam and Collaborative Cheating - Severity Fabrication - Severity Turning in Another's Work - Severity Plagiarism - Severity Technology-Assisted Cheating - Severity	Positively related to perception of severity of cheating behaviors Approaching positive relation No relation No relation Positively related to perception of severity of cheating behaviors

CHAPTER V

CONCLUSION AND DISCUSSION

This chapter will begin by providing an overview of the study, including the purpose and significance of the study in addition to a brief description of the methodology used to conduct the study. The major findings of the study will then be discussed in greater detail and will focus on the Academic Integrity Survey Factor Structure, learning environment, age, gender, program of study, policy dissemination, and the academic integrity climate. Next, the limitations of this study will be addressed, recommendations for future research will also be made, and implications for community college leadership will be described.

Overview of the Study

Purpose of the Study

This study examined whether differences in the self-reported attitudes and behaviors toward academic integrity exist between community college students enrolled in online courses and those in traditional, face-to-face learning environments. In addition, this study sought to determine whether the students' level of awareness of the institutional policies related to academic integrity and ratings of the academic integrity climate impacted students' self-reported cheating behaviors and perceived severity of those cheating behaviors and if it differed among students between the two learning environments.

This study sought to answer the following questions:

1. To what extent do online and face-to-face students differ in their self-reported behaviors and attitudes toward academic integrity and do self-reported

behaviors and attitudes vary by student characteristics (age, gender, and program of study)?

2. Does the level of awareness of institutional policies related to academic integrity differ among students enrolled in traditional courses as compared with those enrolled in courses offered online?
3. What impact does an awareness of the institution's academic integrity policies have on the self-reported behaviors and attitudes of students engaging in acts of academic dishonesty?

Research Methodology

This study used a non-experimental comparative research design that employed the use of survey methodology. The Academic Integrity Survey (M-AIS) developed by Dr. Donald McCabe was used to collect data. Using a stratified random sample, two comparison groups were selected to participate in the study. The study included 1,231 students from face-to-face, traditional courses and 427 students from online courses.

Significance of the Study

The results of this study can be used to help reduce a significant deficit of research that exists on academic integrity and the online learning environment, particularly at the community college level. Given the scant amount of research, many researchers within this field have suggested that more studies that examine the community college population as well as the online learning environment be conducted (Baron & Crooks, 2005; Black et al.; Dembicki, 2008; Grijalva et al., 2006; Lanier, 2006; Lumsden & Arvidson, 2001).

Information garnered from this study can also be used by community college faculty, administrators, accrediting bodies, and legislative policy makers as they make decisions

about the future of distance learning. The results can also be used to help faculty and administrators develop strategies, methods, and policies to reduce cheating in both environments.

Summary of Findings

Academic Integrity Survey Factor Structure

Previous studies that utilized this instrument to examine student cheating have either reported the reliability of the instrument by combining all cheating behaviors into a unitary measure or by reporting the results of each cheating behavior individually; very few studies have developed scales that could be used to examine cheating behaviors. Zimmeran (1999) conducted a factor analysis on a McCabe Academic Integrity Survey which contained 13 cheating behaviors at the time the study was conducted and developed a three factor model but did not report the Cronbach's alpha for each of the three factors.

This study used both exploratory factor analysis and confirmatory factor analysis to develop a five-factor structure using data collected from the questions asking students to self-report the number of times they had engaged in the twenty-six cheating behaviors presented. The Cronbach's alpha for each of the ten cheating scales created based off of this structure were well above the 0.7 threshold which indicates internal consistency reliability and provides additional reliability and validity for the survey instrument.

Learning Environment

As predicted, this study did not find statistically significant differences in either the self-reported cheating behaviors or perceived severity of those cheating behaviors between students enrolled in traditional courses and those enrolled in online courses.

Aligning with the results of this study are the findings of Grijalva, Kerkvliet, and Nowell (2006) who found that students were no more inclined to cheat in an online class than in a traditional class. Hart and Morgan (2010) also found that cheating in an online course is no more prevalent than in traditional, face-to-face courses.

When scores were further examined using univariate comparisons of marginal means, it was found that students in traditional courses self-reported higher scores for the Exam and Collaborative Cheating scale than their online counterparts. One reason for this difference could be attributed to a reduced opportunity for panic cheating in the online environment. Grijalva, Kerkvliet, and Nowell (2006) stated online students may engage in panic cheating less than students in a traditional learning environment since exams are often taken on their own, which eliminates the opportunity to observe answers from their neighboring students. Davis (1993) reported that eighty-percent of cheating on an exam were reported to be copying answers from a student in close proximity and using crib notes or cheat sheets. Additionally, online students do not always engage in the same types of social interactions as traditional, face-to-face students resulting in a reduced ability to collaborate with peers in an unethical manner as the social element is somewhat removed. In a sense, the solitary-like classroom environment of the online course may remove the opportunity to engage in cheating available to students in the traditional classroom.

Since cheating in the online learning environment has received significant attention, faculty may be designing course materials and exams that are centered more around a student displaying knowledge through written and or application exams rather than standard, multiple choice, true false exams. If faculty use more application and essay

exams, it becomes easier for them to recognize potential acts of academic dishonesty as most online courses require a number of writing assignments that can serve as a baseline or sample of the student's work (Herberling, 2002).

Age

The results of this study revealed that younger students were more likely to self-report higher levels of academic dishonesty than older students. When cheating behaviors were examined, it was found that younger students were more likely to self-report higher levels of academic dishonesty than older students. Four of the five types of reported cheating were found to display significant differences between the three age groups with only Turning in Another's Work proving to be non-significant. In all four cases that were significantly different, the youngest age range (18 -21 years of age), reported the highest level of cheating. For the Exam and Collaborative Cheating and Plagiarism behaviors, the youngest group was at a significantly higher rate than both of the older groups; but, there was no significant difference between those two older groups. When examining Fabrication and Technology-Assisted cheating behaviors, the youngest group again reported the most cheating but this result was only statistically different when compared to the eldest group (36 years and older). The self-reported cheating incidence of the middle group (22 - 35 years of age) was not significantly different from either of the other groups.

These results mirror findings from other research studies that examined age as a potential characteristic for determining cheating behaviors. Lanier (2006) found that older students were less likely to cheat while Hutton (2006) determined that younger students were more likely to cheat. Callaway (1998) reported that although there was

limited research on academic dishonesty and the community college student, the available studies had found that older students were less likely to engage in acts of academic dishonesty.

In examining the results pertaining to the perceived severity of the cheating behaviors, there were significant differences between age groups and it was found that older students self-reported higher levels of perceived severity than their younger counterparts. The modality of learning environment was not a factor in the perceived severity among groups. When types of cheating were further examined, three of the five types of cheating behaviors were found to be significantly different between the age groups with only the scales for Turning in Another's Work and Plagiarism proving to be non-significant. The younger students between 18 to 21 years of age reported significantly lower perceptions of severity than the two older groups. The two older groups' assessments of severity were not found to be statistically different from one another. While this study did not explicitly examine generational differences among the evaluation of cheating behaviors, the results of this study compliment the work of Wotring (2007) who found that generational differences existed in relation to the perceived severity of cheating behaviors.

Gender

The results of this study did not reveal any significant differences between female and male students with respect to the self-reported cheating behaviors, nor did this vary between the two learning environments. Research conducted by McCabe and Bowers (1993) found a statistically significant increase in cheating among women while the level of cheating among male students did not significantly increase. The results of this study

aligns with some of the works included in Crown and Spiller's (1998) meta-analysis of research focused on academic integrity and found that a number of studies found no significant differences between genders. The results of the current study could suggest that community college women are just as likely as males to engage in academic dishonesty.

Although there was no difference found in the cheating behaviors between genders, significant differences of the perceived severity of the cheating behaviors between gender were revealed. Women, overall, reported higher levels of severity of all five cheating behaviors, with the most significant of those being Fabrication and Plagiarism.

Program of Study

Business students did not self-report higher levels of academic dishonesty than those in other majors. These results mirror those found by Iyer and Eastman (2006) who found that business majors reported less cheating than non-business majors.

Results of the study did find that Health Sciences and Science students self-reported the highest levels of cheating, however univariate statistics revealed that only the behaviors related to the Plagiarism scale were statistically significant. Although Lanier's (2006) study found that business students were more likely to engage in acts of academic dishonesty, hard science students were close behind them in self-reporting cheating. In his longitudinal study of academic dishonesty in nursing schools, McCabe (2008) reported that more than half of the nursing students included in the study self-reported engaging in one or more cheating behaviors. Further, the study found that the self-reported cheating behaviors were higher for nursing students than non-nursing

students. When major was examined with respect to the perceived severity of the cheating behaviors, no significant difference was found.

Policy Dissemination

When examining policy dissemination and learning environment, it was found that online students reported significantly higher levels of faculty discussion of academic integrity than students in the traditional, face-to-face learning environment. These results mirror those found by research conducted by Hart and Morgan (2010) who found that online students reported more awareness of the academic integrity policies than traditional, face-to-face students. The researchers attributed this finding to online students being required to read the printed syllabi and other supporting materials while traditional students may solely rely on the verbal communication of the policy. Additionally, given the fact that cheating in online courses has received so much attention, albeit at times inflated, online faculty may be more vigilant or cautious in their online courses and be likely to communicate and stress the policy more often in the online learning environment (Grijalva et al., 2006).

When the link between self-reported cheating behaviors and the frequency with which faculty discuss academic integrity (as represented by PDS) in their classrooms was examined, the results showed no significant differences between learning environments, and no link between cheating behaviors and policy dissemination. Regardless of the frequency with which faculty discussed academic integrity policies in their classroom, no impact on the student's self-reported cheating behaviors was seen. This finding could suggest that it is important for faculty to discuss and enforce class policies when infractions occur rather than simply discuss the academic integrity policies on a frequent

basis in order to promote academic integrity within the classroom. McCabe (2005a) found that the likelihood of students cheating occurring in a course is highest when the faculty member is known to ignore cheating.

When the perceived severity of cheating behaviors was examined using the Policy Dissemination scale, results found no interaction between learning environments but found a significant positive relationship between policy dissemination and self-reported levels of perceived severity for two of the cheating behavior scales. The perceived severity for Exam and Collaborative cheating and Plagiarism were both statistically significant meaning that as faculty discussed these policies more frequently, students rated those cheating behaviors as more severe. McCabe and Treviño (1996) found that students are less likely to engage in cheating behaviors when they are aware of the academic integrity policies. Students are more likely to rate cheating behaviors as more severe when they are aware of the policies and when they believe that their teacher expects students to follow the rules.

Academic Integrity Climate

This study also examined the academic integrity climate and learning environment and found that online students reported significantly higher levels of support for academic integrity than students in the traditional, face-to-face learning environment.

It was hypothesized that students who report that the learning environment supports academic integrity will be less likely to cheat and more likely to rate cheating behaviors as more severe. The findings of this study indicated that the support for academic integrity climate (AICS) had a negative association with self-reported cheating behaviors, and this did not vary between learning environments. In other words, as the

students rated higher support for academic integrity, the likelihood of them engaging in cheating behaviors declined. This was especially true for the Exam and Collaborative cheating scales.

This finding echoes research conducted by McCabe and Treviño (1997) which found that students self-reported cheating was lower when students perceived that their peers disapproved of cheating and it was higher when students perceived high-levels of cheating among classmates. Some studies have shown that faculty witness acts of academic dishonesty but for a variety of reasons do not act on it (Jenrek, 1989; Moeck, 2002) and this can result in changing the student's perception of the academic integrity climate on campus which in turn may lead to increased cheating among students (McCabe, 2005a).

This study also examined how the academic integrity climate impacted the perceived severity of the cheating behaviors. Although there was no significant interaction found between the learning environments, as the academic integrity climate was rated higher, so was the perceived severity of the cheating behaviors associated with Exam and Collaborative and Plagiarism cheating.

Limitations

The following paragraphs describe some of the limitations of this study.

Single Sample. Since this study only examined the differences of attitudes and behaviors of students at one community college, the findings are not be generalizable to any other community college or learning environment. Though the responses were varied and stretched across multiple curricula, the fact that a single community college was used with only one set of referenced demographics is a limiting factor.

Response Rates. The survey response rates were low, with only 25% of online students and 27% of students participating in the study. This low response rate does not ensure equal representation across the college, although the demographic profile of the participants closely aligned with that of the college.

Method of Survey. A web-based survey was used for data collection which may have made it difficult or impossible for some students, who may not be computer literate or have limited or no access to a computer, to participate in the study.

Social Desirability. Even though participants were assured that their responses would be anonymous and reported in aggregate, social desirability bias may lead individuals to respond more positively than they feel or have behaved in the past if they believe that their responses can be linked back to them. This is especially true with electronic surveys where students may think that technology can be used to trace their responses back to them (McCabe, 2005b).

Recommendations for Future Research

The findings of this study share common results with a number of studies and also provide a number of interesting findings that could be further examined.

In general, additional research within the community college setting is needed. Considering the diverse nature of the population that community colleges serve, further analysis of the cheating behaviors of this group is warranted. It would be interesting to examine whether gender and major varied at other schools as it did at the community college that was used for this study and whether or not this was a result of the peculiar nature of this community college population.

More research related to the online learning environment is needed; especially online learning at the community college level. Given the fact that community colleges are currently serving over half of all online learners in the U.S., the need for additional research to determine whether the learning environment impacts the level of academic dishonesty will be useful to policy-makers and faculty who teach in the online environment.

The Higher Education Opportunity Act of 2008 requires institutions to put safeguards in place to ensure that the online student completing the courses is the same student registered for the course. Results of this preliminary study indicate that such a discriminate policy is not warranted. But more research is needed before any conclusion can be drawn.

Research that investigates faculty perspectives of best practices for ensuring academic integrity in online courses is also needed. Qualitative research that focuses on how faculty design courses and whether those designs prevent cheating should be explored and also compared to the traditional, face-to-face methodologies employed by faculty. Qualitative research on teaching strategies should also be conducted with the student perspective in mind as well.

Understanding why a student would want to cheat and how a student might cheat are other issues that future research might productively explore. With new technologies come new methods that students can leverage to cheat, and an awareness of the prevalence for students to use these methods is an important step in attempting to curb cheating and communicate the importance of academic integrity.

Lastly, additional testing of the factor structure constructed in this study is warranted. Although the data collected for this study supported a five-factor model, additional factor analysis is needed to test the validity of the structure using different student populations. Additional testing for content validity may also be needed for the survey instrument to ensure that the community college population not only understands the questions but believe that they are relevant to the population as well.

Implications for Community College Leadership

Understanding academic dishonesty and how prevalent it is on college campuses should be of concern and importance to the leadership of any institution of higher learning. The results of this study show that there is no statistically significant difference in the self-reported cheating among the online and traditional learning environments.

An open exploration, frequent discussion, and transparency of academic dishonesty policies is necessary so that students are aware of what acts constitute cheating. As shown by data collected through this study and supported by additional research, McCabe and Treviño (1996), a deeper understanding and familiarity with an institution's academic integrity policy and institutional support of academic integrity results in lower self-reported instances of cheating. In order to reduce or eliminate cheating, academic institutions can provide professional development opportunities focused on academic integrity to faculty, administrators, and students.

As this study has shown, some of the most common methods of cheating are employed in both learning environments, with no significant findings that set them apart. Through a better understanding of what constitutes cheating, students will be less likely

to engage in acts of academic dishonesty to the benefit of not only themselves, but to their classmates, faculty, administrators and the institution's reputation as well.

Conclusion

This study did not support the perception that cheating is more prevalent in online courses than traditional, face-to-face courses as the results of this research did not find significant differences in the attitudes of or behaviors toward academic dishonesty between respondents in the two learning environments. As community colleges are serving a larger and more diverse group of contemporary college students and expanding into the online learning environment faster than any other type of academic institution additional research is warranted. Academic integrity is not only an idea that needs to continually be researched and explored but an important value that needs to be inculcated, fostered, and nurtured within all of the learning environments that faculty and administrators provide to students regardless of whether or not they are online or traditional, face-to-face courses.

References

- Adkins, J., Kenkel, C. & Lim, C. L. (2005, Fall). Deterrents to online academic dishonesty. *The Journal of Learning in Higher Education*, 1(1), 17 - 22. Retrieved March 10, 2009, from <http://jwpress.com/JLHE/Issues/v1i1/Deterrents%20to%20Online%20Academic%20Dishonesty.pdf>
- Allen, I.E., & Seaman, J. (2007, October). Online nation: Five years of growth in online learning. Retrieved January 20, 2009, from http://www.sloan-c.org/publications/survey/pdf/online_nation.pdf
- Allen, I.E., & Seaman, J. (2008, November). Staying the course: Online education in the United States, 2008. Retrieved January 20, 2009, from http://www.sloanconsortium.org/publications/survey/pdf/staying_the_course.pdf
- Allen, I.E., & Seaman, J. (2010, January). Learning on demand: Online education in the United States, 2010. Retrieved June 19, 2010, from <http://sloanconsortium.org/publications/survey/pdf/learningondemand.pdf>
- Alschuler, A., & Blimling, G. (1995, Fall). Curbing epidemic cheating through systemic change. *College Teaching*, 43(4), 123-128.
- Antion, D.L., & Michael, W.B. (1983). Short-term predictive validity of demographic, affective, personal, and cognitive variables in relation to two criterion measures of cheating behaviors. *Educational and Psychological Measurement*, 43(2) , 467-482.
- Aaron, R.M. (1992, Winter). Student academic dishonesty: Are collegiate institutions addressing the issue? *NASPA Journal*, 29(2), 107-113.

- Association of Community College Trustees (AACT). (2004). Community college environmental scanning initiative. Washington, DC: Association of Community College Trustees / SunGard Collegis.
- American Association of Community Colleges (AACC). (2009). Community college facts at a glance. Retrieved May 22, 2009, from <http://www.aacc.nche.edu/AboutCC/Documents/fastfacts2009.pdf>
- American Association of Community Colleges (AACC). (n.d.a). A look at the future. Retrieved May 15, 2009, from <http://www.aacc.nche.edu/AboutCC/history/Pages/lookatfuture.aspx>
- American Association of Community Colleges (AACC). (n.d.b). About community colleges. Retrieved September 13, 2009, from <http://www.aacc.nche.edu/AboutCC/Pages/default.aspx>
- American Association of Community Colleges (AACC). (n.d.c). Serving communities. Strengthening the nation. Retrieved May 15, 2009, from <http://www.aacc.nche.edu/AboutCC/history/Pages/lookatfuture.aspx>
- Baron, J., & Crooks, S.M. (2005, March/April). Academic integrity in web based distance education. *TechTrends*, 40(2), 40 - 45.
- Bartlett, T. (2009, March 20). Cheating goes global as essay mills multiply. *The Chronicle of Higher Education*, 55(28), A41. Retrieved April 25, 2009 from <http://chronicle.com/weekly/v55/i28/28a00102.htm>
- Baum, J.J. (2005, November/December). CyberEthics: The new frontier. *TechTrends*, 49(6), 54-55.

- Bennett, R. (2005, April). Factors associated with student plagiarism in a post-1992 university. *Assessment & Evaluation in Higher Education*, 30(2), 137-162.
- Bensen, A.D., Johnson, S.D., Duncan, J., Shinkareva, O.N., Taylor, G.D., & Treat, T. (2008). Community college participation in distance learning for career and technical education. *Community College Journal of Research and Practice*, 32(9), 665-687.
- Berg, S.L. (2003). Two sides of the same coin: Issues in academic integrity. *The Community College Enterprise*, 9(2), 7-23.
- Bernard, R.M., Abrami, P.C., Lou, Y., Borokhovski, E., Wade, A., Wozney, L., Wallett, P.A., Fiset, M., Huang, B. (2004, Fall). How does distance education compare with classroom instruction? A meta-analysis of the empirical literature. *Review of Educational Research*, 74(3), 379 -439.
- Bernardi, R.A., Metzger, R.L., Scofield-Bruno, R.G., Wade-Hoogkamp, M.A., Reyes, L.E., & Barnaby, G.H. (2004). Examining the decision process of students' cheating behavior: An empirical study. *Journal of Business Ethics*, 50(40), 397-414.
- Biernacki, C.H. (2004). An investigation of faculty teaching behaviors that may influence students' decisions to engage in acts of academic dishonesty in higher education. *Dissertation Abstract International*, 65(9), 3295. (UMI No. AAT 3144880)
Retrieved March 11, 2009, from ProQuest database.
- Black, E.W., Greaser, J., & Dawson, K. (2008, December). Academic dishonesty in tradition and online classrooms: Does the "media equation" hold true?

- Bleeker, K.C. (2008). *To be honest: Championing academic integrity in community colleges*. Washington, DC: Community College Press.
- Bloodgood, J.M., Turnley, W.H., & Mudrack, P. (2008, October). The influence of ethics instruction, religiosity, and intelligence on cheating behavior. *Journal of Business Ethics*, 82(3), 557 - 571.
- Boehm, P.J. (2006). Promoting academic integrity in institutions of higher education. *Dissertation Abstract International*, 67(11). (UMI No. AAT 3240552) Retrieved April 24, 2009, from Dissertations and Theses database.
- Boehm, P.J., Justice, M., & Weeks, S. (2009, Spring). Promoting academic integrity in higher education. *Community College Enterprise*, 15(1), 45-61.
- Bolin, A.U. (2004, March). Self-control, perceived opportunity, and attitudes as predictors of academic dishonesty. *The Journal of Psychology*, 138 (2), 101-114.
- Bower, B.L., & Hardy, K.P. (2004, Winter). From correspondence to cyberspace: Changes and challenges in distance education. *New Directions for Community Colleges*, 200(124), 5-12.
- Bowers, W.J. (1964). *Student Dishonesty and its Control in College* (Cooperative Research Project No. OE1672). New York: Bureau of Applied Social Research, Columbia University.
- Bowers, W.J. (1966). Student dishonesty and its control in college. *Dissertation Abstract International*, 28(2), 797. (UMI No. AAT 609326) Retrieved March 15, 2009, from Dissertations and Theses database.
- Bricault, D. (2007). Legal bases for dealing with academic dishonesty. *College and University*, 82(4), 15-21.

- Broeckelman-Post, M.A. (2008, May). Faculty and student influences on academic dishonesty. *IEEE Transactions on Education*, 51(2), 206 - 211.
- Brown, B.S., & Emmet, D. (2001, December). Explaining variations in the level of academic dishonesty in studies of college students: Some new evidence. *College Student Journal*, 35(4). Retrieved May 15, 2009, from EBSCO Host database.
- Brown, B.S., & McInerney, M. (2008, September). Changes in academic dishonesty among business students in the United States, 1999-2006. *International Journal of Management*, 25(3), 621 - 632.
- Buckley, M.R., Wiese, D.S., & Harvey, M.G. (1998). Identifying factors which may influence unethical behavior. *Teaching Business Ethics*, 2(1), 71-84.
- Buckley, M.R., Wiese, D.S., & Harvey, M.G. (1998b, May/June). An investigation into the dimensions of unethical behavior. *Journal of Education for Business*, 73(5), 284-290.
- Burke, J.L. (1997). Faculty perceptions of and attitudes toward academic dishonesty at a two-year college. *Dissertation Abstract International*, 58(6), 2097. (UMI No. AAT 9735474) Retrieved March 11, 2009, from ProQuest database.
- Burke, J.A., Polimeni, R.S., & Slavin, N.S. (2007, May). Academic dishonesty: A crisis on campus. *The CPA Journal*, 77(5), 58-65.
- Burnett, D.D., Rudolph, L., & Clifford, K.O. (Eds.) (1998). *Academic integrity matters*. Washington, DC: National Association of Student Personnel Administrators.
- Burnett, S. (2002, July 8). Dishonor & distrust. *Community College Week*, 14(24). Retrieved May 15, 2009, from EBSCO Host database.

- Burrus, R.T., McGoldrick, K., & Schuhmann, P.W. (2007, Winter). Self-reports of student cheating: Does a definition of cheating matter? *The Journal of Economic Education*, 38(1), 3-16.
- Callaway, R.L. (1998). The self-reported attitudes, behaviors, extent, and types of academic dishonesty at selected community colleges in a Midwestern state. *Dissertation Abstract International*, 59(12), 4374. (UMI No. AAT 9913573) Retrieved March 11, 2009, from ProQuest database.
- Canham, A.A. (2008). Evaluating academic integrity and outreach efforts: Changes in perceptions over a three-year period. Retrieved December 8, 2009, from <http://etd.lib.ttu.edu/theses/available/etd-02262008-113346/>.
- Carnevale, D. (1999, November 12). How to proctor from a distance. *The Chronicle of Higher Education*, 46(12), A47. Retrieved February 23, 2009, from <http://chronicle.com/weekly/v46/i12/12a04701.htm>
- Carnevale, D. (2002, December 6). High-tech cheating alleged in GRE. *The Chronicle of Higher Education*, 49(15), p. A43.
- Carter, B.A. (2008). Faculty believes, level of understanding, and reported actions regarding academic integrity. *Dissertation Abstract International*, 69(4), 1289A. (UMI No. AAT 3307321) Retrieved April 14, 2009, from Dissertations and Theses database.
- Carter, S.L., & Punyanunt-Carter, N.M. (2006). Acceptability of treatments for cheating in the college classroom. *Journal of Instructional Psychology*, 33(3), 212-216.

Center for Academic Integrity (CAI). (n.d.). Center for academic integrity: assessment guide. Retrieved February 12, 2009, from

http://www.academicintegrity.org/assessment_guide/

Center for Academic Integrity (CAI). (1999). *The fundamental values of academic integrity*. Retrieved February 12, 2009 from

http://www.academicintegrity.org/fundamental_values_project/pdf/FVProject.pdf

Chiesl, N. (2007, Fall). Pragmatic methods to reduce dishonesty in web-based courses.

Quarterly Review of Distance Education, 8(3), 203-211.

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

Christe, B. (2003). Designing online courses to discourage dishonesty. *Educase*

Quarterly, 26(4), 54-58.

Christensen Hughes, J.M., & McCabe, D.L. (2006). Understanding academic misconduct.

Canadian Journal of Higher Education, 36(1), 49-63.

Cohen, A.M., & Brawer, F.B. (2003). *The American Community College* (4th ed.). San

Francisco: Jossey-Bass.

Cole, S., & McCabe, D.L. (1996, Spring). Issues in academic integrity. *New Directions*

for Student Services, 73, 67-77.

Crown, D.F., & Spiller, M. S. (1998). Learning from the literature on collegiate cheating:

A review of empirical research. *Journal of Business Ethics*, 17, 638-700.

Davis, S.F. (1993, March). Cheating in college is for a career: Academic dishonesty in the 1990s. Paper presented at the Annual Meeting of the Southeastern

Psychological Association (39th, Atlanta, GA, March 24-27).

Deal, W.F., III. (2002, May/June). Distance learning: Teaching technology online. *The Technology Teacher*, 61(8), 21 - 26.

DeCoster, J. (1998). Overview of factor analysis. Retrieved February 20, 2010, from <http://www.stat-help.com/notes.html>

Dembicki, M. (2008, March 28). Talk about dishonesty: Discussing academic integrity, class expectations with students can go a long way. *Community College Times*. Retrieved May 10, 2009, from <http://www.communitycollegetimes.com/article.cfm?TopicId=6&ArticleId=889&PF=Y>

Ercegovak, Z., & Richardson, J.V. (2004, July). Academic dishonesty, plagiarism included, in the Digital Age: A literature review. *College and Research Libraries*, 65(4), 301-318.

Etter, S., Cramer, J.J., & Finn, S. (2006, Winter). Origins of academic Integrity: Ethical orientations and personality factors associated with attitudes about cheating with information technology. *Journal of Research on Technology in Education*, 39(2), 133 - 155.

Foster, A.L. (2008, July 25). New systems keep a close eye on online students at home. *The Chronicle of Higher Education*, 54(46), p1.

Gall, M.D., Gall, J.P., & Borg, W.R. (2003). *Educational research: An introduction*. (7th ed.). Boston, MA: A B Longman.

Gallant, T.B., & Drinan, P. (2006, September/October). Organizational theory and student cheating: Explanation, responses and strategies. *The Journal of Higher Education*, 77(5), 839-860.

- Gerdeman, R.D. (2000). Academic dishonesty and the community college. (ERIC Document Reproduction Services No. ED447840)
- Glasner, J. (2002, August 26). Where cheaters often prosper. *Wired News*. Retrieved June 12, 2007, from <http://www.wired.com/culture/education/news/2002/08/54571>
- Gomez, D.S. (2001, December). Putting the shame back in student cheating. *The Educational Digest*, 67(4), 15-21.
- Grijalva, T.C., Kerkvliet, J., & Nowell, C. (2006, March). Academic honesty and online courses. *College Student Journal*, 40(1), 180-185.
- Hagedorn, L.S., Perrakis, A.I., & Maxwell, W. (2006, April / May). The positive commandments: 10 ways community colleges help students succeed. *Community College Journal*, 76(5), 58-61.
- Hardy, D. (2002) Ethical considerations affecting teaching in community colleges: An abundance of feeling and limited fact. *Community College Journal of Research and Practice*, 26(5), 383 - 399.
- Hart, L., & Morgan, L. (2010). Academic integrity in an online registered nurse to baccalaureate in nursing program. *The Journal of Continuing Education in Nursing*, 41(11) 498-505.
- Harmon, O.R., & Lambrinos, J. (2008, Spring). Are online exams an invitation to cheat? *Journal of Economic Education*, 39(2), 116 - 125.
- Heberling, M. (2002, Spring). Maintaining academic integrity in online education. *Online Journal of Distance Learning Administration*, 5(1). Retrieved March 2, 2008, from <http://www.westga.edu/~distance/ojdla/spring51/heberling51.pdf>
- Higher Education Opportunity Act, 20 U.S.C. § 495 (2008).

- Hutton, P.A.(2006). Understanding student cheating and what educators can do about it. *College Teaching*, 54(1), 171-176.
- Iyer, R., & Eastman, J.K. (2006, November/December). Academic dishonesty: Are business students different from other college students? *Journal of Education for Business*, 82(2), 101-110.
- Jendrek, M.P. (1989). Faculty reactions to academic dishonesty. *Journal of College Student Development*, 30, 401 - 406.
- Johnson, L., Levine, A., & Smith, R. (2009). *The 2009 Horizon Report*. Austin, TX: The New Media Consortium.
- Kennedy, K., Nowak, S., Thomas, J., & Davis, S. (2000, June). Academic dishonesty and distance learning: Student and faculty views. *College Student Journal*, 34(2), 309-314.
- Kibler, W.L. (1993, Summer). Academic dishonesty: A student development dilemma. *NASPA Journal*, 30, 252-267.
- Kidwell, L.A., Wozniak, K., & Laurel, J.P. (2003). Student reports and faculty perceptions of academic dishonesty. *Teaching Business Ethics*, 7(3), 205-214.
- Kline, R.B. (2005). *Principles and practices of structural equation modeling*. (2nd ed.). New York: Guilford Press.
- Kohn, A. (2008, January). Who's cheating whom? *The Educational Digest*, 73(5), 4-11.
- Lanier, M.M. (2006, October). Academic integrity and distance learning. *Journal of Criminal Justice Education*, 17(2), 244 - 261.
- Lee, D. (2009, March). Cheating in the classroom: Beyond policing. *Clearing House*, 82(4), 171-176.

- Leech, N.L., Barrett, K.C., & Morgan, G.A. (2005). *SPSS for Intermediate Statistics: Use and Interpretation* (2nd ed.). Mahwah, NJ: Lawrence Erlbaum Associates.
- Levine, J.H. (2001, March/April). What we are learning about academic integrity. *About Campus*, 6(1), 9 - 16.
- Lipson, C. (2004). *Doing honest work in college: How to prepare citations, avoid plagiarism, and achieve real academic success*. Chicago: University of Chicago Press.
- Lumsden, D.B., & Arvidson, C. (2001, Winter). Academic integrity among community college students: Findings of a preliminary investigation. *The Catalyst*, 31(1), 15-19.
- Manley, G.G., Russell, C.J., & Buckley, M.R. (2001, September/October). Self-enhancing in perceptions of behaving unethically. *Journal of Education for Business*, 77(1), 21-27.
- Maramark, S., & Maline, B. (1993, August). *Academic dishonesty among college students. Issues in education*. Washington, DC: Office of Educational Research and Improvement (ED).
- McCabe, D.L. (1992, August). The influence of situational ethics on cheating among college students. *Social Inquiry*, 62(3), 365-374.
- McCabe, D.L. (2005a). Cheating among college and university students: A North American perspective. *International Journal for Educational Integrity*, 1(1). Retrieved May 25, 2009 from <http://www.ojs.unisa.edu.au/index.php/IJEI/article/viewFile/14/9>

- McCabe, D.L. (2005b). It takes a village: Academic dishonesty. *Liberal Education, Summer/Fall*, 26-31.
- McCabe, D.L. (2008). Academic dishonesty in nursing schools: An empirical investigation. *Journal of Nursing Education, 48*(11), 614-632.
- McCabe, D.L., & Bowers, W.J. (1994, January). Academic dishonesty among males in college: A thirty year perspective. *Journal of College Student Development, 35*(1), 5 - 10.
- McCabe, D.L., & Drinan, P.(1999) Toward a culture of academic integrity. *The Chronicle of Higher Education, 46*(8), B7.
- McCabe, D.L., & Pavela, G. (2004, May/June). Ten [updated] principles of academic integrity. *Change, 36*(3), 10-14.
- McCabe, D.L., & Pavela, G. (2005, March 11). New honor codes for a new generation. *Inside Higher Education*. Retrieved October 20, 2008, from <http://www.insidehighered.com/views/2005/03/11/pavela1>
- McCabe, D.L., & Treviño, L.K. (1993, September/October). Academic dishonesty: Honor codes and other contextual influences. *Journal of Higher Education, 64*(5), 522-538.
- McCabe, D.L., & Treviño, L.K. (1996, January / February). What we know about cheating in college: Longitudinal trends and recent developments. *Change, 28*(1), 29 -33.
- McCabe, D.L., & Treviño, L.K. (1997). Individual and contextual influence on academic integrity: A multicampus investigation. *Research in Higher Education, 38*(3), 379 - 396.

- McCabe, D.L., Butterfield, K.D., & Treviño, 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.L., Treviño, L.K., & Butterfield, K.D. (2001). Cheating in academic institutions: A decade of research. *Ethics & Behaviors*, 11(3), 219- 232.
- McCabe, D.L., Treviño, L.K., & Butterfield, K.D. (2002). Honor codes and other contextual influences on academic integrity: A replication and extension to modified honor code settings. *Research in Higher Education*, 43(3), 357-378.
- McMurtry, K. (2001, November). e-cheating: Combating a 21st century challenge. *T.H.E. Journal*, 29(4), 36-41.
- Miller, M.T., Pope, M.L., & Steinmann, T.D. (2006). Trait and behavioral differences among community college students based on gender: Results of a national study. *Community College Journal of Research and Practice*, 30, 715-728.
- Moeck, P.G. (2002). Academic dishonesty: Cheating among community college students. *Community College Journal of Research and Practice*, 26, 479-491.
- Morgan, G.A., Leech, N.L, Gloeckner, G.W., & Barrett, K.C. (2004). *SPSS for introductory statistics: Use and interpretation*. (2nd ed.) Mahwah, NJ: Lawrence Erlbaum.
- National Commission on Community Colleges (NCCC). (2008). *Winning the skills race and strengthening America's middle class: An action agenda for community colleges*. Retrieved April 17, 2009, from http://www.collegeboard.com/prod_downloads/prof/community/winning_the_skills_race.pdf

- Olt, M. R. (2002, Fall). Ethics and distance learning: Strategies for minimizing academic dishonesty in online assessment. *Online Journal of Distance Learning Administration*, 5(3). Retrieved March 3, 2009, from <http://www.westga.edu/~distance/ojdla/fall53/olt53.html>
- Orcher, L.T. (2005). *Conducting research: Social and behavioral science methods*. Glendale CA: Pyrczak Publishing.
- Pavela, G. (1997). Applying the power of association on campus: A model code of academic integrity. *Journal of College and University Law*, 24(1), 97-118.
- Payne, S.L., & Nantz, K.S. (1994). Social accounts and metaphors about cheating. *College Teaching*, 42(3), 90-96.
- Peet, M.A., Lackey, N.R., & Sullivan, J.J. (2003). *Making sense of factor analysis*. Thousand Oaks, CA: Sage Publications, Inc.
- Pincus, H.S., & Schmelkin, L.P. (2003, March/April). Faculty perceptions of academic dishonesty: A multidimensional scaling analysis. *The Journal of Higher Education*, 74(2), 196-209.
- Pino, N.W., & Smith, W. L. (2003, December). College students and academic dishonesty. *College Student Journal*, 37(4), 490-500.
- Plowman, T.S. (2000, February). Academic integrity and information technology. *TechTrends*, 44(1), 24-30.
- Premeaux, S.R. (2005). Undergraduate student perceptions regarding cheating: Tier 1 versus Tier 2 AACSB accredited business schools. *Journal of Business Ethics*, 62(4), 407-418.

- Provasnik, S. & Planty, M. (2008). *Community Colleges: Special Supplement to the Condition of Education 2008* (NCES 2008-0033).
- National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC. Retrieved March 15, 2009, from <http://nces.ed.gov/pubs2008/2008033.pdf>
- Puka, B. (2005). Student Cheating. *Liberal Education*, 91(3), 32-35.
- Rakovski, C.C., & Levy, E.S. (2007, June). Academic dishonesty: Perceptions of business students. *College Student Journal*, 41(2), 466-481.
- Randall, M.E. (1998). Can the academic integrity of cost-effective distance learning course offerings be protected? In D.D. Burnett, L. Rudolph, & K.O. Clifford (Eds.), *Academic integrity matters* (pp. 125-133). Washington, DC: National Association of Student Personnel Administrators.
- Read, B. (2004, July 16). Wired for cheating: some professors go beyond honor codes to stop misuse of electronic devices. *The Chronicle of Higher Education*, A27.
- Reisetter, M., Lapointe, L., & Korcuska, J. (2007). The impact of altered realities: Implications of online delivery for learners' interactions, expectations, and learning skills. *International Journal on E-Learning*, 6(1), 55-80.
- Rettinger, D.A., Jordan, A.E., & Peschiera, F. (2004, December). Evaluating the motivation of other students to cheat: A vignette experiment. *Research in Higher Education*, 45(8), 878-890.
- Ridley, D.R., & Husbands, J.E. (1998). Online education: A study of academic rigor and integrity. *Journal of Instructional Psychology*, 25(3), 184- 188.

- Roig, M., & Ballew, C. (1994, Winter). Attitudes toward cheating of self and others by college students and professors. *Psychology Record*, 44(1), 3-12.
- Roig, M., & Caso, M. (2005). Lying and cheating: Fraudulent excuse making, cheating and plagiarism. *The Journal of Psychology*, 139(6), 485-494.
- Robinson, E., Amburgey, R., Swank, E., & Faulkner, C. (2004). Test cheating in a rural college: Studying the importance of individual and situational factors. *College Student Journal*, 38(3), 380-395.
- Rowe, N.C. (2004, Summer). Cheating in online student assessment: Beyond plagiarism. *Online Journal of Distance Learning Administration*, 7(2). Retrieved March 3, 2009, from <http://www.westga.edu/~distance/ojdla/summer72/rowe72.html>
- Selingo, J. (2004, September). The cheating culture. *ASEE Prism*, 14(1), 24-30.
- Shyles, L. (2002). *Authenticating, identifying, and monitoring learners in the virtual classroom: Academic integrity in distance learning*. Paper presented at the Annual Meeting of the National Communication Association, New Orleans, Louisiana. (ERIC Document Reproduction Service No. ED4472807).
- Sileo, J.M., & Sileo, T.W. (2008). Academic dishonesty and online classes: A rural education perspective. *Rural Special Education Quarterly*, 27(1/2), 55-60.
- Simon, C.A., Carr, J.R., McCullough, S.M., Morgan, S.J., 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, G.G., Ferguson, D., & Caris, M. (2001, April). Teaching college courses online vs. face-to-face. *THE Journal*, 28(9), 18-26.

- Smyth, M.L. & Davis, J.R. (2003). An examination of student cheating in the two-year college. *Community College Review*, 31(1), 17 – 32.
- Strom, P., & Strom, R. (2007, April). Curbing cheating, raising integrity. *Education Digest*, 72(8), 42-50.
- Stuber-McEwen, D., Wiseley, P., & Hoggatt, S. (2009, Fall). Point, click, and cheat: Frequency and type of academic dishonesty in the virtual classroom. *Online Journal of Distance Learning Administration*, 7(2). Retrieved September 19, 2009, from <http://www.westga.edu/~distance/ojdla/fall123/stuber123.html>
- Tabachnick, B.G., & Fidell, L.S. (2007). *Using multivariate statistics* (5th ed.). Boston: Pearson Education, Inc. / Allyn and Bacon.
- Talab, R. (2004). A student online plagiarism guide: Detection and prevention resources(and copyright implications!). *TechTrends*, 48(6), 15-18.
- Tanner, C.A. (2004, July). Moral decline or pragmatic decision making?: Cheating and plagiarism in perspective. *Journal of Nursing Education*, 43(7), 291-292.
- Tidewater Community College (TCC). (2008, November 18). Mission statement. Retrieved September 13, 2009, from Tidewater Community College's Website: <http://www.tcc.edu/welcome/collegeadmin/OIE/mission.htm>
- Underwood, J. & Szabo, A. (2003). Academic offences and e-learning: individual propensities in cheating. *British Journal of Educational Technology*, 34(4), 467-477.
- Vandehey, M.A., Diekhoff, G.M., & LaBeff, E.E. (2007, Jul/Aug). College cheating: A twenty-year follow-up and the addition of an honor code. *Journal of College Student Development*, 48(4), 468-480.

- Varvel, V.E. Jr. (2005). Honesty in online education. Pointers and Clickers: ION's Technology Tip of the Month, 6(1). Retrieved May 15, 2009, from http://www.ion.uillinois.edu/resources/pointersclickers/2005_01/VarvelCheatPoint2005.pdf
- Vaughan, G.B. (2000). *The community college story* (2nd ed.). Washington, DC: Community College Press.
- Volpe, R., Davidson, L., & Bell, M. (2008, March 1). Faculty attitudes and behaviors concerning student cheating. *College Student Journal*, 42(1), 164-175. (ERIC Document Reproduction Service No. EJ816876). Retrieved February 3, 2009, from ERIC database.
- Wang, Y-W. (2008). University student online plagiarism. *International Journal on Elearning*, 7(4), 743 - 757.
- Watson, G., & Sottile, J. (2010, Spring). Cheating in the digital age: do students cheat more in online courses? *Journal of Distance Learning Administration*, 13(1). Retrieved March 24, 2010, from <http://www.westga.edu/~distance/ojdla/spring131/watson131.html>
- Whitley, B.E., Jr. (1998). Factors associated with cheating among college students: A review. *Research in Higher Education*, 39(3), 235 - 274.
- Whiley, B.E., Jr. & Keith-Spiegel, P. (2002). *Academic dishonesty: An educator's guide*. Mahwah, NJ: Erlbaum.
- Wotring, K.W. (2007). Generational differences among community college students in their evaluation of academic cheating. *Dissertation Abstract International*, 68(11). (UMI No. AAT 3288631) Retrieved November 10, 2009, from Dissertations and Theses database.

- Zwagerman, S. (2008, June). The Scarlet P: Plagiarism, panopticism, and the rhetoric of academic integrity. *College Composition and Communication*, 59(4), 676 - 710.
- Zimmerman, J. (1999). Academic dishonesty attitudes and behaviors in a university population. Dissertation Abstract International, 59(11-A). (UMI No. AAT 9912682)

APPENDICES

Appendix A
Academic Integrity Survey

Academic Integrity
Community College
Student Survey

Academic Environment

Please tell us about the academic environment at _____.

1 How would you rate _____	Very Low	Low	Medium	High	Very High
The severity of penalties for cheating at _____?					
The average student's understanding of campus _____					
The faculty's understanding of these _____					
Student support of these policies?					
Faculty support of these policies?					
The effectiveness of these policies?					

2 Have you been informed about the academic integrity or cheating policies at _____?	Yes	No

If yes, where and how much have you learned about these policies? (Check all that apply)	Learned Little or Nothing	Learned Some	Learned A Lot
First year orientation program			
Campus website			
Student Handbook			
Counselor or Advisor			
Other students			
Faculty (e.g. discussed in class, course syllabi, or course outlines)			
Dean or other administrator			
Other (please specify) _____			

3 In the past year, how often, on average, did your instructors discuss policies concerning	Never	Very Seldom	Seldom/Sometimes	Often	Very Often
Plagiarism					
Guidelines on group work or collaboration					
Proper citation/referencing of written sources					
Proper citation/referencing of Internet sources					
Falsifying/fabricating course lab data					
Falsifying/fabricating research data					

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

5 How often, if ever, have you seen ?	
Never	
Once	
A few times	
Several times	
Many times	

6 Have you ever reported another student for cheating?	Yes	No
--	-----	----

Submitting a paper you purchased or obtained from a Web site (such as www.schoolsucks.com) and claimed it as your own work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Using unpermitted handwritten crib notes (or cheat sheets) during a test or exam.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Using electronic crib notes (stored in PDA, phone, or calculator) to cheat on a test or exam.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Using an electronic/digital device as an unauthorized aid during an exam.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Copying material, almost word for word, from any written source and turning it in as your own work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Using a false or forged excuse to obtain an extension on a due date or delay taking an exam.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Turning in work done by someone else.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cheating on a test in any other way.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Never	Once	More Than Once	Not Relevant	Not Cheating	Trivial Cheating	Moderate Cheating	Serious Cheating

2. If you indicated above that you have paraphrased or copied material from a written or electronic source without citing it, please tell us how you accessed this material:

Internet or other electronic means only	<input type="radio"/>
Have only used hard (paper) copies of sources	<input type="radio"/>
Have primarily used Internet or other electronic means	<input type="radio"/>
Have primarily used hard (paper) copies of sources	<input type="radio"/>
Have used both methods pretty equally	<input type="radio"/>

3. Have you ever taken an online test or exam at _____?	Yes	No
	<input type="radio"/>	<input type="radio"/>

3a. If you have taken an online test or exam at _____, have you ever: (Check all that apply.)

Collaborated with others during an online test or exam when not permitted?	<input type="checkbox"/>
Used notes or books on a closed book online test or exam?	<input type="checkbox"/>
Received unauthorized help from someone on an online test or exam?	<input type="checkbox"/>
Looked up information on the Internet when not permitted?	<input type="checkbox"/>

4. How likely is it that.

Very
Unlikely

Unlikely

Likely

Very Likely

You would report an incident of cheating that you observed?

The typical student at _____ would report such violations?

A student would report a close friend?

5. 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 my school

The investigation of suspected incidents of cheating is fair and impartial at my school

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

Faculty members change exams and assignments on a regular basis

The amount of course work I'm expected to complete is reasonable for my year level and program

The degree of difficulty in my exams and assignments is appropriate for my year level and program

The types of assessment used in my courses are effective at evaluating my level of understanding of course concepts

The types of assessment used in my courses are effective at helping me learn course concepts

6. If you had cheated in a course and the following individuals knew about it, how strongly would they disapprove?

Very
strongly

Fairly
strongly

Not very
strongly

Not at all

A close friend

One of the students you go around with

Your parents

Demographics

1. Please indicate how many traditional and how many online classes you have taken at _____ Use these

Traditional = in-class lecture/discussion

Online = Online instruction primarily, with or without a few scheduled traditional class meetings

	None	1 - 2	3 - 4	5 - 6	7 or more
a. Including the current semester, how many traditional classes have you taken at _____ ?					
b. Including the current semester, how many online classes have you taken at _____ ?					

2. How many credit hours have you _____ ?

- None
- 1 - 14
- 15 - 29
- 30 - 44
- 45 or more

3. How many semesters (including this semester) have you been enrolled at _____ ?

- This is my first semester
- 2 semesters
- 3 - 4 semesters
- 5 or more semesters

4. What is your age?

- 18 - 19
- 20 - 21
- 22 - 26
- 27 - 35
- 36 - 47
- 48 - 55
- 56 or older

5 Sex

Female

Male

6 In what type of program are you enrolled?

Business Program
 Career Program - Health Sciences
 Career Program - Public Service
 Career Program - Technology
 Transfer Program - Education
 Transfer Program - Liberal Arts
 Transfer Program - Science
 Other
 Undecided

6 If you actively participate in any of the following, please tell us about how much time you spend on each activity in an average week

	Do Not Participate	1-9 Hours	10-19 Hours	More Than 19 Hours
Paid employment				
Caring for a dependent				
Student clubs & organizations				
Intercollegiate athletics				

7 How would you rate your overall level of computer knowledge and related technical skills?

Not very competent
 Low level of competency
 Moderately competent
 High level of competency
 Expert

Free Response

1. What specific changes would you like to see make in support of academic integrity? What

2. Please use this space for any comments you care to make, or if there is anything else you would like to tell us about the topic of cheating.

Thank you for participating in this survey!

Submit Form

Survey Title

Appendix B

Permission to Use Data Collected



October 1, 2019

Dear Kristine Christensen:

This letter grants you permission to use the Academic Integrity data collected during the fall 2018 semester for your dissertation. The research was reviewed and approved by the college's Human Subjects Research Review Board and was conducted within the guidelines set forth by the board.

Take care.



Director, Institutional Research and Planning

Appendix C

Permission to Use Survey and Data Collected



Professor Donald L. McCabe
Department of Management and Global Business
Rutgers Business School–Newark and New Brunswick
Rutgers The State University of New Jersey
1 Washington Park
Newark, New Jersey 07102-3027

www.business.rutgers.edu

Office 973-353-1409
Fax 973-353-1664

To: Kristine Christensen - [REDACTED]

From: Donald L. McCabe – Rutgers University

Dear Kris:

This message will confirm that you have my permission to use my academic integrity surveys in the manner you described for your doctoral dissertation work.

I wish you the best of luck in this endeavor.

Very truly yours,

A handwritten signature in black ink that reads "Donald L. McCabe".

Donald L. McCabe
Professor of Management & Global Business
Rutgers University
Affiliated with Center for Academic Integrity

Appendix D

Pre-notice Email to Faculty



Dear Colleagues,

I am writing to request your assistance. This fall, the college will be participating in a nationwide survey on academic integrity. The study is designed to capture both student and faculty opinions about the current state of academic integrity at our nation's colleges. The survey was designed by Dr. Donald McCabe, Professor of Management at Rutgers Business School in Newark, New Jersey. He has conducted research in academic integrity over the last 18 years at more than 170 colleges which involved more than 175,000 students and 19,000 faculty members.

In the near future, you may receive an email informing you that your class has been randomly selected to participate in a survey focused on Academic Integrity. If your class is selected, we ask that you complete the faculty survey and encourage your students to complete the student survey. The online survey will take about 15 minutes to complete and asks how you view this important issue and how you feel others on campus do. The survey is completely anonymous and there is no way for responses to be tied back to the respondent, you can be sure you will not be identified and that your responses will be kept anonymous.

Dr. McCabe will be summarizing the initial results of the two surveys at the October 21st faculty development day. Additionally, the compiled results of this data will be shared with departments and subdivisions so that it can support initiatives that need to be developed or might be in place to help improve academic integrity. The data will also be reviewed by the Academic Integrity Task Group and used in future research.

We need your help! Everyone's participation in this survey is important and we hope that you will complete the survey and ask that your students complete the survey. If you have any questions about any aspect of this study, please contact me via phone (708-974-5512) or email (Christensen.Kristine@mc.edu), or you may contact Dr. McCabe at (908) 996-1111 or dmccab@mc.edu.

Thank you,

Kristine Christensen

Associate Professor
Department of Management



Appendix E

Informational Letter to Traditional Faculty

Academic Integrity

Your Class Has Been Selected!



Congratulations!

Dear [faculty member name],

Your class has been selected to participate in a nationwide survey focused on academic integrity. As mentioned in a previous email, the college is participating in this study this fall and we need your help!

Since your class was selected, we ask that you complete the faculty survey and encourage your students to complete the student survey. The online survey will take about 15 minutes to complete and asks how you view this important issue and how you feel others on campus do. The survey is completely anonymous and there is no way for responses to be tied back to the respondent; you can be sure you will not be identified and that your responses will be kept anonymous. In addition to this e-mail, you will also be receiving information about this survey in your mailbox.

Student Survey Information

Since your class was selected, we ask that you complete the faculty survey and encourage your students to complete the student survey. The online survey will take about 15 minutes to complete and asks how you view this important issue and how you feel others on campus do. The survey is completely anonymous and there is no way for responses to be tied back to the respondent; you can be sure you will not be identified and that your responses will be kept anonymous.

If you could please take some time to announce this survey to your students during class time and encourage them to complete the survey, it would be very much appreciated. Please let your students know the purpose of the study and stress that all responses will be kept completely anonymous and their participation is voluntary. Students will receive information about the study along with a link to the survey through their e-mail account.

Since this is an online survey and not all students access their e-mail account or do all courses meet within a computer lab, you will receive handouts via Interdepartmental mail which contain a brief description and the link to the survey so that students can complete it at home or at one of the computers in the open labs. The link to the student survey is as follows:

<http://acad-integrity.rutgers.edu/>
(please note that www should not be included in this address)

If you have access to a computer lab that you can bring your students to so that they can complete the survey, that would be great and will help to improve our response rate. For those using Blackboard to supplement your course you can post some general information about the survey along with the link for your students.

If you teach more than one class, additional classes that you teach may also have been selected. If that is the case, you as the faculty member, will only need to complete the survey once. Additionally, if that class is an online class, you will be provided with a different link to the identical student survey for your online students to complete.

Faculty Survey Information

You should have received an e-mail discussing this survey using your _____ e-mail account. If you did not receive an e-mail, the faculty survey can be completed using the following web address:

<http://acad-integrity.rutgers.edu/> _____
(please note: that www should **not** be included in this address).

About the Study

The study is designed to capture both student and faculty opinions about the current state of academic integrity at our nation's colleges. The survey was designed by Dr. Donald McCabe, Professor of Management at Rutgers Business School in Newark, New Jersey. He has conducted research in academic integrity over the last 18 years at more than 170 colleges which involved more than 175,000 students and 19,000 faculty members.

Dr. McCabe will be summarizing the initial results of the two surveys at the October 21st faculty development day. Additionally, the compiled results of this data will be shared with departments and subdivisions so that it can support initiatives that need to be developed or might be in place to help improve academic integrity. The data will also be reviewed by the Academic Integrity Task Group and used in future research.

We Need Your Help!

We need your help! Everyone's participation in this survey is important and we hope that you will complete the survey and ask that your students complete the survey. If you have any questions about any aspect of this study, please contact me via phone (708.974.5512) or email (kristine.christensen@rutgers.edu), or you may contact Dr. McCabe at dmcabec@arc.rutgers.edu.

Thank You!

Thank you so much for your support of this initiative, it is very much appreciated!

Kristine Christensen



Academic Integrity

Your Class Has Been Selected!



Congratulations!

Your class has been selected to participate in a nationwide survey focused on academic integrity. As I mentioned in a previous email, the college is participating in this study this fall and we need your help!

Since your class was selected, we ask that you complete the faculty survey and encourage your students to complete the student survey. The online survey will take about 15 minutes to complete and asks how you view this important issue and how you feel others on campus do. The survey is completely anonymous and there is no way for responses to be tied back to the respondent; you can be sure you will not be identified and that your responses will be kept anonymous.

If you could please take some time to announce this survey to your students during class time and encourage them to complete the survey, it would be very much appreciated. Please let your students know the purpose of the study and stress that all responses will be kept completely anonymous and their participation is voluntary. Students will receive information about the study along with a link to the survey.

Since this is an online survey and not all students access their [redacted] email account nor do all courses meet within a computer lab, I have attached handouts that contain a brief description and the link to the survey:

[http://acad-integrity.rutgers.edu/\[redacted\]](http://acad-integrity.rutgers.edu/[redacted])

(please note: that www should not be included in this address)

so that students can complete it at home or at one of the computers in the open labs. Students should only complete this survey once.

If you have access to a computer lab that you can bring your students to so that they can complete the survey, that would be great and will help to improve our response rate. For those using Blackboard to supplement your course, you can post some general information about the survey along with the link for your students.

If you teach more than one class, additional classes that you teach may also have been selected. If that is the case, you as the faculty member, will only need to complete the survey once. Additionally, if that class is an online class, you will be provided with a different link to the identical survey.

About the Study

The study is designed to capture both student and faculty opinions about the current state of academic integrity at our nation's colleges. The survey was designed by Dr. Donald McCabe, Professor of Management at Rutgers Business School in Newark, New Jersey. He has conducted research in academic integrity over the last 18 years at more than 170 colleges which involved more than 175,000 students and 19,000 faculty members.

Dr. McCabe will be summarizing the initial results of the two surveys at the October 21st faculty development day.

Additionally, the compiled results of this data will be shared with departments and subdivisions so that it can support initiatives that need to be developed or might be in place to help improve academic integrity. The data will also be reviewed by the Academic Integrity Task Group and used in future research.

We Need Your Help!

Everyone's participation in this survey is important and we hope that you will complete the survey and encourage your students to complete the survey as well.

If you have any questions about any aspect of this study, please contact me via phone (708.974.5512) or email (chrnstensen@[redacted]) or you may contact Dr. McCabe at dmccabe@andromeda.rutgers.edu.

Thank you in advance for your support of this important research! It is very much appreciated!

Appendix F

Information Handout to Students Enrolled in Traditional Courses

Academic Integrity Survey

We Need Your Help!

Congratulations! Your class has been selected to participate in a nationwide survey focused on academic integrity and [REDACTED] wants to hear from our students!

The survey will only take about 15 minutes to complete and starts by asking you to tell us what you think about academic integrity and then sharing how you think other people feel about this important topic.

Don't worry, the survey is completely anonymous and there is no way for responses to be tied back to the respondent; you can be sure you will not be identified and that your responses will be kept completely anonymous.

You will receive an e-mail requesting your participation through your [REDACTED] e-mail account or you can use the following link to complete the survey.
(please note: www should not be included in this address)

[http://acad-integrity.rutgers.edu/\[REDACTED\]](http://acad-integrity.rutgers.edu/[REDACTED])

The reason for the study is to capture both student and faculty opinions about the current state of academic integrity at our nation's colleges. The survey was designed by Dr. Donald McCabe, Professor of Management at Rutgers Business School in Newark, New Jersey, who has been researching academic integrity over the last 18 years at more than 170 colleges. His research has involved more than 175,000 students and 19,000 faculty members and **this is your chance to be a part of history!**

We need your help! Everyone's participation in this survey is important and we hope that you will take a few minutes and complete the survey. If you have any questions about any aspect of this study, please contact Kristine Christensen via e-mail [REDACTED]


Don't miss this chance to give your honest opinion!

Appendix G

Informational Email to Online Faculty

Academic Integrity

Your Online Class Has Been Selected!



Congratulations!

Dear [Faculty Member Name],

Your [online course] has been selected to participate in a nationwide survey focused on academic integrity. As I mentioned in a previous email, the college is participating in this study this fall and we need your help!

Since your class was selected, we ask that you complete the faculty survey and encourage your students to complete the student survey. The online survey will take about 15 minutes to complete and asks how you view this important issue and how you feel others on campus do. **The survey is completely anonymous and there is no way for responses to be tied back to the respondent; you can be sure you will not be identified and that your responses will be kept anonymous.** In addition to this e-mail, you will also be receiving information about this survey in your mailbox.

Student Survey Information

If you could please post an announcement in your Blackboard course about this survey for your online students and encourage them to complete the survey, it would be very much appreciated. Please let your students know the purpose of the study and stress that all responses will be kept completely anonymous and their participation is voluntary. Students should only complete this survey once. The survey will be made available starting Monday, September 22nd.

Students will receive information about the study along with a link to the survey through their e-mail accounts. **Since not all students access their e-mail account even though we would like them to, please provide the following link to the survey in your announcement:**

<http://acad-integrity.rutgers.edu/>
(please note: the www should not be included in this address).

I have also created a Blackboard announcement and will e-mail it to you following this message, please feel free to use all or part of it.

If you teach more than one class, additional classes that you teach may also have been selected. If that is the case, you as the faculty member, will only need to complete the survey once. Additionally, if that class is a traditional face-to-face course, you will be provided with a different link to the identical survey for those students. **Please do not use this link for your face-to-face students; there is a different link for them.**

Faculty Survey Information

You should have received an e-mail discussing this survey using your _____ e-mail account. If you did not receive an e-mail, the faculty survey can be completed using the following web address:

<http://acad-integrity.rutgers.edu/>

(please note: the www should not be included in this address).

About the Study

The study is designed to capture both student and faculty opinions about the current state of academic integrity at our nation's colleges. The survey was designed by Dr. Donald McCabe, Professor of Management at Rutgers Business School in Newark, New Jersey. He has conducted research in academic integrity over the last 18 years at more than 170 colleges which involved more than 175,000 students and 19,000 faculty members.

Dr. McCabe will be summarizing the initial results of the two surveys at the October 21st faculty development day. Additionally, the compiled results of this data will be shared with departments and subdivisions so that it can support initiatives that need to be developed or might be in place to help improve academic integrity. The data will also be reviewed by the Academic Integrity Task Group and used in future research.

We Need Your Help!

We need your help! Everyone's participation in this survey is important and we hope that you will complete the survey and ask that your students complete the survey. If you have any questions about any aspect of this study, please contact me via phone (708.974.5512) or email (Christensen@rutgers.edu), or you may contact Dr. McCabe at dmccabe@andromeda.rutgers.edu.

Thank You!

Thank you so much, [faculty member name], for your support of this initiative, it is very much appreciated!

Kristine Christensen

 Kristine Christensen

Academic Integrity

Your Online Class Has Been Selected!



Congratulations!

Your online class has been selected to participate in a nationwide survey focused on academic integrity. As I mentioned in a previous email, the college is participating in this study this fall and we need your help!

Since your class was selected, we ask that you complete the faculty survey and encourage your students to complete the student survey. The online survey will take about 15 minutes to complete and asks how you view this important issue and how you feel others on campus do. **The survey is completely anonymous and there is no way for responses to be tied back to the respondent; you can be sure you will not be identified and that your responses will be kept anonymous.**

If you could please post an announcement in your Blackboard course about this survey to your online students and encourage them to complete the survey, it would be very much appreciated. Please let your students know the purpose of the study and stress that all responses will be kept completely anonymous and their participation is voluntary. Students should only complete this survey once.

Students will receive information about the study along with a link to the survey through their [redacted] e-mail accounts. Since not all students access their [redacted] e-mail account even though we would like them to, please provide the following link to the survey in your announcement:

[http://acad-integrity.rutgers.edu/\[redacted\]](http://acad-integrity.rutgers.edu/[redacted])
(please note: that www should not be included in this address).

I have also created a Blackboard announcement and have e-mailed it to you, please feel free to use all or part of it.

If you teach more than one class, additional classes that you teach may also have been selected. If that is the case, you as the faculty member, will only need to complete the survey once. Additionally, if that class is a traditional face-to-face class, you will be provided with a different link to the identical survey.

Faculty Survey

You should have received an e-mail discussing this survey using your Moraine Valley e-mail account. If you did not receive an e-mail, the faculty survey can be completed using the following web address:

[http://acad-integrity.rutgers.edu/\[redacted\]](http://acad-integrity.rutgers.edu/[redacted])

About the Study

The study is designed to capture both student and faculty opinions about the current state of academic integrity at our nation's colleges. The survey was designed by Dr. Donald McCabe, Professor of Management at Rutgers Business School in Newark, New Jersey. He has conducted research in academic integrity over the last 18 years at more than 170 colleges which involved more than 175,000 students and 19,000 faculty members.

Dr. McCabe will be summarizing the initial results of the two surveys at the October 21st faculty development day. Additionally, the compiled results of this data will be shared with departments and subdivisions so that it can support initiatives that need to be developed or might be in place to help improve academic integrity. The data will also be reviewed by the Academic Integrity Task Group and used in future research.

We Need Your Help!

Everyone's participation in this survey is important and we hope that you will complete the survey and encourage your students to complete the survey as well.

If you have any questions about any aspect of this study, please contact me via phone (708.974.5512) or e-mail (christensen@[redacted]) or you may contact Dr. McCabe at dmccabe@andromeda.rutgers.edu.

Thank You!


Thank you so much for your support of this initiative, it is very much appreciated!

Appendix H

Online Announcement in Blackboard for Students Enrolled in Online Courses

Academic Integrity Survey

Our Class Has Been Selected!



Congratulations!

Our class has been selected to participate in a nationwide survey focused on academic integrity and _____ wants to hear from our students!

The survey will only take about 15 minutes to complete and starts by asking you to tell us what you think about academic integrity and then sharing how you think other people feel about this important topic. **Don't worry, the survey is completely anonymous and there is no way for responses to be tied back to the respondent; you can be sure you will not be identified and that your responses will be kept completely anonymous.**

You will receive an e-mail requesting your participation through your _____ e-mail account or you can use the following link to complete the survey:

<http://acad-integrity.rutgers.edu/>
 (please note: www should not be included in this address).

The reason for the study is to capture both student and faculty opinions about the current state of academic integrity at our nation's colleges. The survey was designed by Dr. Donald McCabe, Professor of Management at Rutgers Business School in Newark, New Jersey, who has been researching academic integrity over the last 18 years at more than 170 colleges. His research has involved more than 175,000 students and 19,000 faculty members and **this is your chance to be a part of history!**

We need your help! Everyone's participation in this survey is important and we hope that you will take a few minutes and complete the survey. If you have any questions about any aspect of this study, please contact Kristine Christensen via e-mail (C_____@_____.edu).

Appendix I

Initial Email to Online Students

To [student name]:

This fall [REDACTED] is participating in a nationwide survey of college students on the subject of academic integrity. This study is designed to get student opinions about the current state of academic integrity at our nation's colleges. The survey was designed by Donald L. McCabe, Professor of Management at Rutgers Business School, Newark, New Jersey. He has conducted similar studies over the last 18 years at more than 170 colleges, involving more than 175,000 students.

The survey takes about 15 minutes to complete. It asks how you view the issue of academic integrity and how you feel your classmates do. Please go to the link below to complete this survey. The survey is completely anonymous; you can be sure you will not be identified and that your responses will be treated confidentially.

Your participation is entirely voluntary. However, every student's participation is important and I hope you will consider taking the time to complete the survey.

Please click here to take the survey:

[http://acad-integrity.rutgers.edu/\[REDACTED\]](http://acad-integrity.rutgers.edu/[REDACTED])

Thank you.

Kristine Christensen
Director, Faculty Development
Assistant Professor, IMS

[REDACTED]
Director, Institutional Research and Planning

If you have any questions about any aspect of this study, you may contact Professor Christensen at [christensen@\[REDACTED\]](mailto:christensen@[REDACTED]). If you wish, you may contact Professor McCabe at dmccabe@andromeda.rutgers.edu.

Appendix J

Initial Email to Traditional Students

To [student] :

This fall [REDACTED] is participating in a nationwide survey of college students on the subject of academic integrity. This study is designed to get student opinions about the current state of academic integrity at our nation's colleges. The survey was designed by Donald L. McCabe, Professor of Management at Rutgers Business School, Newark, New Jersey. He has conducted similar studies over the last 18 years at more than 170 colleges, involving more than 175,000 students.

The survey takes about 15 minutes to complete. It asks how you view the issue of academic integrity and how you feel your classmates do. Please go to the link below to complete this survey. The survey is completely anonymous; you can be sure you will not be identified and that your responses will be treated confidentially.

Your participation is entirely voluntary. However, every student's participation is important and I hope you will consider taking the time to complete the survey.

Please click here to take the survey:

[http://acad-integrity.rutgers.edu/\[REDACTED\]](http://acad-integrity.rutgers.edu/[REDACTED])

Thank you.

Kristine Christensen
Director, Faculty Development
Assistant Professor, IMS

[REDACTED]
Director, Institutional Research and Planning

If you have any questions about any aspect of this study, you may contact Professor Christensen at [christensen@\[REDACTED\]](mailto:christensen@[REDACTED]). If you wish, you may contact Professor McCabe at dmccabe@andromeda.rutgers.edu.

Appendix K

Reminder Email to Online Students

Academic Integrity Survey Reminder

About three weeks ago, you were asked to participate in a campus-wide academic integrity survey. *If you have already completed the survey, thank you for your participation.* If you have not yet participated, I'd like to encourage you to do so. The information you and other students provide will help [REDACTED] evaluate its academic integrity policies and assess the current climate of academic integrity here at [REDACTED].

The survey is available online at: <http://acad-integrity.rutgers.edu> [REDACTED]

Kristine Christensen
Director, Faculty Development
Assistant Professor, IMS

[REDACTED]
Director, Institutional Research and Planning

If you have any questions about any aspect of this study, you may contact Professor Christensen at [christensen@\[REDACTED\]](mailto:christensen@[REDACTED]). If you wish, you may contact Professor McCabe at dmccabe@andromeda.rutgers.edu.

Appendix L

Reminder Email to Traditional Students

Academic Integrity Survey Reminder

About three weeks ago, you were asked to participate in a campus-wide academic integrity survey. *If you have already completed the survey, thank you for your participation.* If you have not yet participated, I'd like to encourage you to do so. The information you and other students provide will help [REDACTED] evaluate its academic integrity policies and assess the current climate of academic integrity here at [REDACTED]

The survey is available online at: <http://acad-integrity.rutgers.edu> [REDACTED]

Kristine Christensen
Director, Faculty Development
Assistant Professor, IMS

[REDACTED]
Director, Institutional Research and Planning

If you have any questions about any aspect of this study, you may contact Professor Christensen at [christensen@\[REDACTED\]](mailto:christensen@[REDACTED]). If you wish, you may contact Professor McCabe at dmccabe@andromeda.rutgers.edu.

Appendix M

Itemization of Elements for the Academic Environment and Cheating Behavior Scales

Academic Integrity Climate (6)

- The severity of penalties for cheating at Moraine Valley?
- The average student's understanding of campus policies concerning student cheating?
- The faculty's understanding of these policies?
- Student support of these policies?
- Faculty support of these policies?
- The effectiveness of these policies?

Policy Discussion (6)

- Plagiarism
- Guidelines on group work or collaboration
- Proper citation/referencing of written sources
- Proper citation/referencing of Internet sources
- Falsifying/fabricating course lab data
- Falsifying/fabricating research data

Exam and Collaborative Cheating (11)

- Working on an assignment with others (in person) when the instructor asked for individual work. (collab)
- Working on an assignment with others (via email or Instant Messaging) when the instructor asked for individual work. (ecollab)
- Getting questions or answers from someone who has already taken a test. (pretest)
- Helping someone else cheat on a test. (helpoth)
- Copying from another student during a test with his or her knowledge. (copywith)
- Copying from another student during a test or examination without his or her knowledge. (copywo)
- Receiving unpermitted help on an assignment. (unphelp)
- Copying (by hand or in person) another student's homework. (copyhw)
- Using unpermitted handwritten crib notes (or cheat sheets) during a test or exam. (crib)
- Using a false or forged excuse to obtain an extension on a due date or delay taking an exam. (forge)
- Cheating on a test in any other way. (othtest)

Fabrication (2)

- Fabricating or falsifying lab data. (labdata)
- Fabricating or falsifying research data. (resdata)

Turning in Another's Work(6)

- In a course requiring computer work, copying another student's program rather than writing your own.(computer)
- Turning in a paper from a "paper mill" (a paper written and previously submitted by another student) and claiming it as your own work. (mill)
- Submitting a paper you purchased or obtained from a Web site (such as www.schoolsucks.com) and claimed it as your own work. (millprof)
- 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. (copypap)
- Turning in work done by someone else. (workoth)
- Copying material, almost word for word, from any written source and turning it in as your own work. (plag)

Plagiarism (3)

- Fabricating or falsifying a bibliography. (biblio)
- Paraphrasing or copying a few sentences from a book, magazine, or journal (not electronic or Web-based) without footnoting them in a paper you submitted.(nofoot)
- Paraphrasing or copying a few sentences of material from an electronic source - e.g., the Internet - without footnoting them in a paper you submitted.(netplag)

Technology-Assisted Cheating (4)

- Using digital technology (such as text messaging) to get unpermitted help from someone during a test or examination. (copye)
- Copying (using digital means such as Instant Messaging or email) another student's homework. (copyhwe)
- Using electronic crib notes (stored in PDA, phone, or calculator) to cheat on a test or exam.(cribe)
- Using an electronic/digital device as an unauthorized aid during an exam. (device)

Appendix N

Scale Item Descriptive Statistics

Self-Reported Cheating Behaviors Scales

Scale / Item	N	Mean*	SD	Percentage by Response Category		
				Never	Once	More Than Once
<i>Exam and Collaborative Cheating</i>						
Working on an assignment with others (in person) when the instructor asked for individual work.	1462	1.29	.634	80.6	9.6	9.8
Working on an assignment with others (via email or Instant Messaging) when the instructor asked for individual work.	1495	1.31	.625	77.9	13.3	8.8
Getting questions or answers from someone who has already taken a test.	1325	1.09	.361	93.1	4.5	2.3
Helping someone else cheat on a test.	1518	1.17	.480	87.7	7.7	4.5
Copying from another student during a test with his or her knowledge.	1531	1.18	.490	87.2	8.0	4.8
Copying from another student during a test or examination without his or her knowledge.	1533	1.16	.477	88.5	6.8	4.6
Receiving unpermitted help on an assignment.	1510	1.29	.605	79.2	12.8	8.0
Copying (by hand or in person) another student's homework.	1538	1.42	.720	71.7	14.6	13.7
Using a false or forged excuse to obtain an extension on a due date or delay taking an exam.	1536	1.22	.529	84.0	10.5	5.5

<i>Scale / Item</i>	N	Mean*	SD	Percentage by Response Category		
				Never	Once	More Than Once
Cheating on a test in any other way.	1521	1.15	.449	88.2	8.3	3.6
Using unpermitted handwritten crib notes (or cheat sheets) during a test or exam.	1496	1.14	.442	89.4	6.9	3.7
<i>Fabrication</i>						
Fabricating or falsifying lab data.	1354	1.17	.474	87.6	8.1	4.3
Fabricating or falsifying research data.	1353	1.12	.399	90.9	6.4	2.7
<i>Turning in Another's Work</i>						
In a course requiring computer work, copying another student's program rather than writing your own.	1480	1.58	.798	61.8	18.6	19.6
Turning in a paper from a "paper mill" (a paper written and previously submitted by another student) and claiming it as your own work.	1490	1.06	.298	95.4	3.1	1.5
Submitting a paper you purchased or obtained from a Web site (such as www.schoolsucks.com) and claimed it as your own work.	1497	1.04	.247	96.5	2.5	0.9
Turning in work done by someone else.	1522	1.09	.349	93.2	4.8	2.0
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.	1515	1.10	.357	92.5	5.5	2.0

<i>Scale / Item</i>	N	Mean*	SD	Percentage by Response Category		
				Never	Once	More Than Once
Copying material, almost word for word, from any written source and turning it in as your own work.	1518	1.10	.361	92.6	5.3	2.2
<i>Plagiarism</i>						
Fabricating or falsifying a bibliography.	1378	1.11	.383	91.1	6.6	2.3
Paraphrasing or copying a few sentences from a book, magazine, or journal (not electronic or Web-based) without footnoting them in a paper you submitted.	1487	1.48	.744	67.0	17.8	15.2
Paraphrasing or copying a few sentences of material from an electronic source - e.g., the Internet - without footnoting them in a paper you submitted.	1493	1.45	.718	68.5	18.2	13.4
<i>Technology-Assisted Cheating</i>						
Using digital technology (such as text messaging) to get unpermitted help from someone during a test or examination.	1513	1.06	.306	95.4	2.9	1.7
Copying (using digital means such as Instant Messaging or email) another student's homework.	1507	1.11	.411	92.2	4.4	3.5
Using electronic crib notes (stored in PDA, phone, or calculator) to cheat on a test or exam.	1507	1.10	.365	92.7	5.0	2.3
Using an electronic / digital device as an unauthorized aid during an exam.	1505	1.06	.291	95.8	2.7	1.5

* Based on a three-point scale.

Perceived Severity of Cheating Behaviors Scales

	N	Mean*	SD	Percentage by Response Category			
				Not Cheating	Trivial Cheating	Moderate Cheating	Serious Cheating
<i>Exam and Collaborative Cheating</i>							
Working on an assignment with others (in person) when the instructor asked for individual work.	1278	2.16	.979	29.7	36.5	22.1	11.6
Working on an assignment with others (via email or Instant Messaging) when the instructor asked for individual work.	1279	2.22	1.007	28.5	35.1	22.7	13.7
Getting questions or answers from someone who has already taken a test.	1244	3.06	1.075	13.5	14.3	24.7	47.5
Helping someone else cheat on a test.	1257	3.35	.980	9.4	8.4	19.8	62.4
Copying from another student during a test with his or her knowledge.	1274	3.35	.984	9.4	8.7	19.3	62.6
Copying from another student during a test or examination without his or her knowledge.	1264	3.42	.997	10.0	7.4	13.2	69.4
Receiving unpermitted help on an assignment.	1246	2.61	1.079	20.0	25.4	28.3	26.2
Copying (by hand or in person) another student's homework.	1267	2.86	1.037	12.7	23.8	28.6	35.0

	N	Mean*	SD	Percentage by Response Category			
				Not Cheating	Trivial Cheating	Moderate Cheating	Serious Cheating
Using a false or forged excuse to obtain an extension on a due date or delay taking an exam.	1250	2.68	1.126	20.5	23.0	24.5	32.0
Cheating on a test in any other way.	1253	3.27	1.018	10.6	10.0	20.9	58.5
Using unpermitted handwritten crib notes (or cheat sheets) during a test or exam.	1246	3.31	1.009	10.5	8.7	20.3	60.5
<i>Fabrication</i>							
Fabricating or falsifying lab data.	1234	2.89	1.060	14.0	20.1	28.7	37.2
Fabricating or falsifying research data.	1193	2.99	1.043	12.6	17.3	28.9	41.2
<i>Turning in Another's Work</i>							
In a course requiring computer work, copying another student's program rather than writing your own.	1235	3.18	1.052	12.6	10.0	24.0	53.4
Turning in a paper from a "paper mill" (a paper written and previously submitted by another student) and claiming it as your own work.	1253	3.42	1.017	11.3	5.7	13.2	69.8
Submitting a paper you purchased or obtained from a Web site (such as www.schoolsucks.com) and claimed it as your own work.	1248	3.45	1.003	10.7	5.7	11.1	72.5

	N	Mean*	SD	Percentage by Response Category			
				Not Cheating	Trivial Cheating	Moderate Cheating	Serious Cheating
Turning in work done by someone else.	1251	3.27	1.056	12.3	8.9	18.2	60.6
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.	1256	3.26	.999	10.6	8.5	25.3	55.6
Copying material, almost word for word, from any written source and turning it in as your own work.	1266	3.40	1.003	10.9	5.6	16.1	67.4
<i>Plagiarism</i>							
Fabricating or falsifying a bibliography.	1267	2.73	1.068	16.2	25.7	27.2	30.9
Paraphrasing or copying a few sentences from a book, magazine, or journal (not electronic or Web-based) without footnoting them in a paper you submitted.	1269	2.66	1.043	16.9	26.7	30.2	26.2
Paraphrasing or copying a few sentences of material from an electronic source - e.g., the Internet - without footnoting them in a paper you submitted.	1266	2.76	1.053	15.2	24.4	29.2	31.2

	N	Mean*	SD	Percentage by Response Category			
				Not Cheating	Trivial Cheating	Moderate Cheating	Serious Cheating
<i>Technology-Assisted Cheating</i>							
Using digital technology (such as text messaging) to get unpermitted help from someone during a test or examination.	1271	3.33	1.036	11.4	8.3	15.9	64.4
Copying (using digital means such as Instant Messaging or email) another student's homework.	1251	2.85	1.067	14.5	21.6	27.8	36.1
Using electronic crib notes (stored in PDA, phone, or calculator) to cheat on a test or exam.	1254	3.29	1.028	11.2	8.8	19.5	60.4
Using an electronic / digital device as an unauthorized aid during an exam.	1224	3.30	1.025	11.4	8.0	20.3	60.3

* Based on a four-point scale.

Policy Dissemination Scale (PDS)

Question: In the past year, how often, on average, did your instructors discuss policies concerning:

	N	Mean*	SD	Percentage by Response Category				
				Never	Very Seldom	Seldom / Sometimes	Often	Very Often
Plagiarism	1730	3.83	1.099	4.5	7.9	19.5	36.1	31.9
Guidelines on group or collaboration	1708	3.65	1.074	5.1	8.7	24.5	39.4	22.3
Proper citation / referencing of written sources	1718	3.83	1.104	4.5	8.3	18.9	36.4	31.9
Proper citation / referencing of Internet sources	1712	3.83	1.126	5.0	8.3	18.6	35.3	32.8
Falsifying / fabricating course lab data	1710	3.48	1.260	10.6	10.6	22.9	31.5	24.4
Falsifying / fabricating research data	1714	3.54	1.246	9.7	9.9	22.6	31.7	26.0

*Based on a five-point scale.

*Academic Integrity Climate Scale**Question: How would you rate:*

	N	Mean*	SD	Percentage by Response Category				
				Very Low	Low	Medium	High	Very High
The severity of penalties for cheating?	1742	3.96	.931	2.1	3.5	22.3	40.4	31.7
The average student's understanding of campus policies concerning student cheating?	1739	3.79	1.005	2.6	7.1	25.8	37.3	27.1
The faculty's understanding of these policies?	1736	4.32	.812	1.0	1.3	12.2	35.5	50.0
Student support of these policies?	1731	3.59	.988	3.2	8.0	34.1	35.6	19.0
Faculty support of these policies?	1728	4.22	.847	1.3	2.1	13.5	40.0	43.1
The effectiveness of these policies?	1728	3.88	.937	1.9	4.3	26.4	38.6	28.8

*Based on a five-point scale.

Appendix O

Scale Item Descriptive Statistics Split by Learning Environment

Cheating Behavior Scales

<i>Scale/Item</i>	Traditional Learning Environment					Online Learning Environment				
	Mean	SD	Percentage by Response			Mean	SD	Percentage by Response		
			Never	Once	More Than Once			Never	Once	More Than Once
<i>Exam and Collaborative Cheating</i>										
Working on an assignment with others (in person) when the instructor asked for individual work.	1.64	.815	57.9	20.5	21.6	1.40	.716	73.4	13.0	13.6
Working on an assignment with others (via email or Instant Messaging) when the instructor asked for individual work.	1.34	.671	77.8	10.9	11.3	1.16	.494	88.9	5.8	5.3
Getting questions or answers from someone who has already taken a test.	1.35	.655	75.6	14.3	10.1	1.21	.518	84.5	10.4	5.2
Helping someone else cheat on a test.	1.19	.511	86.2	8.4	5.3	1.10	.371	92.1	5.6	2.3

Scale/Item	Traditional Learning Environment					Online Learning Environment				
	Mean	SD	Percentage by Response			Mean	SD	Percentage by Response		
			Never	Once	More Than Once			Never	Once	More Than Once
Copying from another student during a test with his or her knowledge.	1.21	.527	84.8	9.5	5.6	1.08	.350	93.9	3.8	2.3
Copying from another student during a test or examination without his or her knowledge.	1.19	.517	86.2	8.3	5.5	1.07	.323	95.2	2.8	2.0
Receiving unpermitted help on an assignment.	1.31	.625	77.7	13.5	8.8	1.22	.539	83.4	10.8	5.8
Copying (by hand or in person) another student's homework.	1.46	.745	69.0	15.7	15.3	1.30	.629	79.3	11.5	9.3
Using a false or forged excuse to obtain an extension on a due date or delay taking an exam.	1.24	.559	82.5	11.0	6.5	1.15	.425	88.1	9.1	2.8
Cheating on a test in any other way.	1.18	.484	86.4	9.2	4.3	1.08	.317	93.1	5.6	1.3

<i>Scale/Item</i>	Traditional Learning Environment					Online Learning Environment				
	Mean	SD	Percentage by Response			Mean	SD	Percentage by Response		
			Never	Once	More Than Once			Never	Once	More Than Once
Using unpermitted handwritten crib notes (or cheat sheets) during a test or exam.	1.17	.470	87.6	8.3	4.1	1.08	.343	94.8	2.9	2.4
<i>Fabrication</i>										
Fabricating or falsifying lab data.	1.19	.509	86.0	8.8	5.2	1.09	.347	92.2	6.0	1.7
Fabricating or falsifying research data.	1.14	.434	89.4	7.3	3.4	1.05	.263	95.4	3.7	0.9
<i>Turning in Another's Work</i>										
In a course requiring computer work, copying another student's program rather than writing your own.	1.11	.387	92.1	5.2	2.7	1.05	.267	96.2	2.7	1.2
Turning in a paper from a "paper mill" (a paper written and previously submitted by another student) and claiming it as your own work.	1.07	.321	94.7	3.5	1.8	1.03	.220	97.4	1.8	0.8

<i>Scale/Item</i>	Traditional Learning Environment					Online Learning Environment				
	Mean	SD	Percentage by Response			Mean	SD	Percentage by Response		
			Never	Once	More Than Once			Never	Once	More Than Once
Submitting a paper you purchased or obtained from a Web site (such as www.schoolsucks.com) and claimed it as your own work.	1.05	.269	96.0	2.8	1.2	1.02	.167	97.9	1.8	0.3
Turning in work done by someone else.	1.11	.387	91.9	5.5	2.7	1.03	.193	96.9	2.8	0.3
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.	1.11	.385	91.7	5.7	2.6	1.06	.257	94.6	4.9	0.5
Copying material, almost word for word, from any written source and turning it in as your own work.	1.11	.385	91.5	6.0	2.5	1.06	.280	95.7	3.1	1.3

<i>Scale/Item</i>	Traditional Learning Environment					Online Learning Environment				
	Mean	SD	Percentage by Response			Mean	SD	Percentage by Response		
			Never	Once	More Than Once			Never	Once	More Than Once
<i>Plagiarism</i>										
Fabricating or falsifying a bibliography.	1.12	.394	90.1	7.6	2.4	1.08	.348	93.9	3.9	2.2
Paraphrasing or copying a few sentences from a book, magazine, or journal (not electronic or Web-based) without footnoting them in a paper you submitted.	1.50	.751	65.9	18.4	15.7	1.43	.723	70.4	15.8	13.8
Paraphrasing or copying a few sentences of material from an electronic source - e.g., the Internet - without footnoting them in a paper you submitted.	1.46	.724	67.5	18.7	13.8	1.41	.701	71.1	16.5	12.4

Scale/Item	Traditional Learning Environment					Online Learning Environment				
	Mean	SD	Percentage by Response			Mean	SD	Percentage by Response		
			Never	Once	More Than Once			Never	Once	More Than Once
<i>Technology-Assisted Cheating</i>										
Using digital technology (such as text messaging) to get unpermitted help from someone during a test or examination.	1.07	.329	94.6	3.5	2.0	1.03	.229	97.7	1.3	1.0
Copying (using digital means such as Instant Messaging or email) another student's homework.	1.14	.453	90.6	5.1	4.3	1.04	.248	96.7	2.3	1.0
Using electronic crib notes (stored in PDA, phone, or calculator) to cheat on a test or exam.	1.11	.390	91.6	5.7	2.7	1.05	.277	95.9	2.8	1.3
Using an electronic / digital device as an unauthorized aid during an exam.	1.07	.315	95.3	2.9	1.9	1.03	.201	97.4	2.1	.5

* Means based on a three-point scale.

Severity of Cheating Behaviors Scales: Traditional Learning Environment

Scale/Item	Traditional Learning Environment					
	Mean	SD	Percentage by Response			
			Not Cheating	Trivial Cheating	Moderate Cheating	Serious Cheating
<i>Exam and Collaborative Cheating</i>						
Working on an assignment with others (in person) when the instructor asked for individual work.	2.11	.957	30.7	37.7	21.5	10.1
Working on an assignment with others (via email or Instant Messaging) when the instructor asked for individual work.	2.18	.999	29.9	35.0	22.5	12.6
Getting questions or answers from someone who has already taken a test.	3.00	1.096	14.8	15.4	24.6	45.2
Helping someone else cheat on a test.	3.30	1.014	10.6	9.1	20.1	60.1
Copying from another student during a test with his or her knowledge.	3.28	1.015	10.6	9.6	20.6	59.2
Copying from another student during a test or examination without his or her knowledge.	3.35	1.039	11.5	8.2	14.7	65.7
Receiving unpermitted help on an assignment.	2.56	1.091	21.9	25.7	27.2	25.2
Copying (by hand or in person) another student's homework.	2.78	1.054	14.5	25.4	27.7	32.3

Scale/Item	Traditional Learning Environment					
	Mean	SD	Percentage by Response			
			Not Cheating	Trivial Cheating	Moderate Cheating	Serious Cheating
Using a false or forged excuse to obtain an extension on a due date or delay taking an exam.	2.66	1.138	21.5	23.1	23.5	31.8
Cheating on a test in any other way.	3.20	1.050	12.0	11.2	21.9	54.9
Using unpermitted handwritten crib notes (or cheat sheets) during a test or exam.	3.24	1.041	11.9	9.5	21.7	57.0
<i>Fabrication</i>						
Fabricating or falsifying lab data.	2.83	1.090	16.2	20.3	27.2	36.2
Fabricating or falsifying research data.	2.95	1.076	14.3	17.4	27.2	41.1
<i>Turning in Another's Work</i>						
In a course requiring computer work, copying another student's program rather than writing your own.	3.10	1.090	14.6	11.0	24.1	50.4
Turning in a paper from a "paper mill" (a paper written and previously submitted by another student) and claiming it as your own work.	3.35	1.056	12.7	6.1	14.2	67.0
Submitting a paper you purchased or obtained from a Website (such as www.schoolsucks.com) and claimed it as your own work.	3.39	1.048	12.3	6.2	11.5	70.0

<i>Scale/Item</i>	Traditional Learning Environment					
	Mean	SD	Percentage by Response			
			Not Cheating	Trivial Cheating	Moderate Cheating	Serious Cheating
Turning in work done by someone else.	3.21	1.092	14.0	9.4	18.5	58.2
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.	3.19	1.032	12.1	9.2	26.4	52.3
Copying material, almost word for word, from any written source and turning it in as your own work.	3.33	1.042	12.4	6.1	17.8	63.7
<i>Plagiarism</i>						
Fabricating or falsifying a bibliography.	2.67	1.093	18.6	25.7	25.6	30.1
Paraphrasing or copying a few sentences from a book, magazine, or journal (not electronic or Web-based) without footnoting them in a paper you submitted.	2.62	1.058	18.4	26.9	29.0	25.7
Paraphrasing or copying a few sentences of material from an electronic source - e.g., the Internet - without footnoting them in a paper you submitted.	2.73	1.066	16.5	24.5	28.6	30.4

Scale/Item	Traditional Learning Environment					
	Mean	SD	Percentage by Response			
			Not Cheating	Trivial Cheating	Moderate Cheating	Serious Cheating
<i>Technology-Assisted Cheating</i>						
Using digital technology (such as text messaging) to get unpermitted help from someone during a test or examination.	3.26	1.075	12.9	9.6	16.4	61.2
Copying (using digital means such as Instant Messaging or email) another student's homework.	2.77	1.090	16.8	22.9	26.5	33.8
Using electronic crib notes (stored in PDA, phone, or calculator) to cheat on a test or exam.	3.22	1.066	12.7	10.2	19.9	57.2
Using an electronic / digital device as an unauthorized aid during an exam.	3.23	1.059	12.9	8.6	21.3	57.2

* Means based on a four-point scale.

Severity of Cheating Behaviors Scales: Online Learning Environment

	Online Learning Environment					
			Percentage by Response			
Scale/Item	Mean	SD	Not Cheating	Trivial Cheating	Moderate Cheating	Serious Cheating
<i>Exam and Collaborative Cheating</i>						
Working on an assignment with others (in person) when the instructor asked for individual work.	2.30	1.037	26.7	32.7	24.3	16.3
Working on an assignment with others (via email or Instant Messaging) when the instructor asked for individual work.	2.34	1.025	24.0	35.5	23.3	17.2
Getting questions or answers from someone who has already taken a test.	3.26	.982	9.2	10.9	24.8	55.1
Helping someone else cheat on a test.	3.53	.837	5.4	6.1	18.7	69.7
Copying from another student during a test with his or her knowledge.	3.56	.839	5.7	5.7	15.1	73.5
Copying from another student during a test or examination without his or her knowledge.	3.66	.803	5.4	4.7	8.4	81.5
Receiving unpermitted help on an assignment.	2.77	1.024	13.9	24.7	31.9	29.5
Copying (by hand or in person) another student's homework.	3.12	.937	6.8	18.2	31.4	43.6

Scale/Item	Online Learning Environment					
	Mean	SD	Percentage by Response			
			Not Cheating	Trivial Cheating	Moderate Cheating	Serious Cheating
Using a false or forged excuse to obtain an extension on a due date or delay taking an exam.	2.76	1.086	17.0	22.8	27.6	32.7
Cheating on a test in any other way.	3.52	.859	6.2	5.8	17.8	70.2
Using unpermitted handwritten crib notes (or cheat sheets) during a test or exam.	3.54	.860	6.1	6.1	15.9	71.9
<i>Fabrication</i>						
Fabricating or falsifying lab data.	3.07	.933	6.9	19.3	33.4	40.3
Fabricating or falsifying research data.	3.11	.920	6.8	16.8	34.6	41.8
<i>Turning in Another's Work</i>						
In a course requiring computer work, copying another student's program rather than writing your own.	3.44	.870	6.3	6.6	23.6	63.5
Turning in a paper from a "paper mill" (a paper written and previously submitted by another student) and claiming it as your own work.	3.61	.847	6.5	4.4	10.2	78.8
Submitting a paper you purchased or obtained from a Website (such as www.schoolsucks.com) and claimed it as your own work.	3.65	.811	5.8	4.1	9.5	80.6

Scale/Item	Online Learning Environment					
	Mean	SD	Percentage by Response			
			Not Cheating	Trivial Cheating	Moderate Cheating	Serious Cheating
Turning in work done by someone else.	3.48	.898	6.8	7.2	17.5	68.5
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.	3.48	.850	5.7	6.4	21.8	66.1
Copying material, almost word for word, from any written source and turning it in as your own work.	3.63	.825	6.1	4.1	10.5	79.4
<i>Plagiarism</i>						
Fabricating or falsifying a bibliography.	2.92	.960	8.2	25.7	32.2	33.9
Paraphrasing or copying a few sentences from a book, magazine, or journal (not electronic or Web-based) without footnoting them in a paper you submitted.	2.78	.984	11.8	26.3	34.0	27.9
Paraphrasing or copying a few sentences of material from an electronic source - e.g., the Internet - without footnoting them in a paper you submitted.	2.88	1.000	10.7	24.2	31.2	33.9

<i>Scale/Item</i>	Online Learning Environment					
	Mean	SD	Percentage by Response			
			Not Cheating	Trivial Cheating	Moderate Cheating	Serious Cheating
<i>Technology-Assisted Cheating</i>						
Using digital technology (such as text messaging) to get unpermitted help from someone during a test or examination.	3.58	.853	6.7	4.0	14.4	74.9
Copying (using digital means such as Instant Messaging or email) another student's homework.	3.12	.940	7.2	17.4	32.1	43.3
Using electronic crib notes (stored in PDA, phone, or calculator) to cheat on a test or exam.	3.54	.850	6.5	4.1	18.4	71.0
Using an electronic / digital device as an unauthorized aid during an exam.	3.51	.876	6.5	6.2	17.2	70.1

* Means based on a four-point scale.

Policy Dissemination Scale (PDS): Traditional Learning Environment

	Mean*	SD	Percentage by Response Category				
			Never	Very Seldom	Seldom / Sometimes	Often	Very Often
Plagiarism	3.79	1.107	4.8	8.4	19.5	37.1	30.2
Guidelines on group or collaboration	3.62	1.066	5.0	9.1	25.5	39.6	20.8
Proper citation / referencing of written sources	3.45	1.260	11.0	10.9	23.3	31.7	23.1
Proper citation / referencing of Internet sources	3.80	1.126	5.2	8.5	19.0	36.0	31.4
Falsifying / fabricating course lab data	3.78	1.121	5.1	8.6	19.5	36.4	30.3
Falsifying / fabricating research data	3.51	1.241	10.0	10.2	23.1	32.5	24.3

*Based on a five-point scale.

Policy Dissemination Scale (PDS): Online Learning Environment

	Mean*	SD	Percentage by Response Category				
			Never	Very Seldom	Seldom / Sometimes	Often	Very Often
Plagiarism	3.94	1.088	3.6	7.9	17.1	34.1	37.3
Guidelines on group or collaboration	3.75	1.094	5.3	7.3	21.5	38.7	27.1
Proper citation / referencing of written sources	3.58	1.259	9.7	9.7	21.7	30.7	28.3
Proper citation / referencing of Internet sources	3.91	1.123	4.6	7.7	17.1	33.3	37.2
Falsifying / fabricating course lab data	3.98	1.015	2.6	5.7	19.5	35.2	36.9
Falsifying / fabricating research data	3.65	1.256	9.0	9.0	21.2	29.4	31.4

*Based on a five-point scale.

Academic Integrity Climate (AIC) Scale: Traditional Learning Environment

	Mean*	SD	Percentage by Response Category				
			Very Low	Low	Medium	High	Very High
The severity of penalties for cheating?	3.93	.959	2.4	4.2	22.7	39.6	31.1
The average student's understanding of campus policies concerning student cheating?	3.77	1.000	2.7	7.2	26.4	38.1	25.5
The faculty's understanding of these policies?	4.30	.832	1.1	1.4	12.9	35.2	49.3
Student support of these policies?	3.55	.996	3.7	8.5	34.2	36.0	17.5
Faculty support of these policies?	4.20	.860	1.5	2.2	13.5	40.1	42.7
The effectiveness of these policies?	3.86	.944	2.1	4.3	27.1	38.8	27.7

Academic Integrity Climate (AIC) Scale: Online Learning Environment

	Mean*	SD	Percentage by Response Category				
			Very Low	Low	Medium	High	Very High
The severity of penalties for cheating?	4.07	.825	.9	1.2	21.3	42.7	33.9
The average student's understanding of campus policies concerning student cheating?	3.87	1.017	2.4	6.9	23.9	34.8	32.2
The faculty's understanding of these policies?	4.39	.746	.5	.9	10.2	36.3	52.1
Student support of these policies?	3.73	.949	1.7	6.2	33.8	34.5	23.8
Faculty support of these policies?	4.25	.805	.7	1.7	13.6	39.8	44.3
The effectiveness of these policies?	3.96	.912	1.0	4.5	24.5	38.0	32.1

VITA

Kristine M. Christensen
kristine@sparklevision.com
 Old Dominion University
 Darden College of Education
 Norfolk, VA 23529

EDUCATION

- August, 2011** **Doctorate of Philosophy, Community College Leadership**
 Old Dominion University · Norfolk, Virginia
- Dissertation:* Attitudes Of And Behaviors Towards Academic Integrity Between Community College Students Who Enroll In Online Courses Versus Traditional Courses
- Dissertation Committee Members:* Dr. Dana Burnett (ODU), Dr. Donald McCabe (Rutgers University), and Dr. Linda Bol (ODU)
- Administrative Internship:* Worked closely with the Vice President of Student Development at Moraine Valley Community College and served on the Student Development Leadership Team. Developed professional development opportunities to help faculty better understand MVCC's student population, served on the Retention Task Force Team and created resources and an interactive webpage to collect and share retention efforts used by MVCC faculty and staff, served on the Cultural Awareness Team, and attended various meetings.
- August, 2011** **Master of Science in Teaching and Learning**
 University of St. Francis · Joliet, Illinois
- Capstone Paper:* Strategies, Techniques and Tips for Creating and Sustaining a Climate of Academic Integrity at the Community College
- May, 2003** **Associate in Applied Science in Management Information Systems**
 Moraine Valley Community College · Palos Hills, Illinois
Major: Web Development
- August, 2000** **Master of Science in Management Information Systems**
 Governors State University · University Park, Illinois
Major: Electronic Commerce
Graduate Research Project: MIS Home Page Development
- August, 1998** **Master of Business Administration**
 Eastern Illinois University · Charleston, Illinois
Elective Concentration: Consulting
- May, 1997** **Bachelor of Science in Business Administration**
 Valparaiso University · Valparaiso, Indiana
Major: Management (concentration in Human Resource Management)
Major: Industrial Psychology

WORK EXPERIENCE

**August, 2000
to present**

Moraine Valley Community College · Palos Hills, Illinois
Associate Professor, Information Management Systems · Fall, 2009
Assistant Professor, Information Management Systems · Fall, 2004
Director, Faculty Development · Fall, 2003 to present
Instructor, Information Management Systems · Fall, 2000

Teaching Experience (Primary Responsibility)

- Responsible for designing, developing, and delivering courses focused on web design and development in a traditional face-to-face, hybrid, and online format.
- Currently teaching courses in XHTML/HTML5 & CSS, JavaScript and jQuery, WYSIWYG Editors (Adobe Dreamweaver / Microsoft Expression), Adobe Flash and ActionScript 3.0, ColdFusion, Adobe Premiere Pro, and Adobe After Effects.
- Served as curriculum coordinator for web design courses.
- Implemented a student web server to be utilized for Internet technology courses (Microsoft Windows Server 2003 / IIS). Currently maintaining and issuing student accounts.
- Contributed in the acquisition of an E-Commerce ILCCO Course Development Grant, allowing Moraine Valley to offer an e-Commerce certificate solely online.
- Serving as a contributing member to the Information Management Systems department by designing marketing materials, presenting at various school events, keeping curricula current, and other tasks when needed.
- Developed various websites for the college (CTL, CAD/NSF)

Curriculum Development

During my tenure at Moraine Valley Community College, I developed and/or revised the following courses, degrees and certificates:

- Developed OSA 125: Introduction to Website Design - focuses on the website design principles and the website design development cycle in addition to an introduction to a WYSIWYG editor (Microsoft Expression Web).
- Developed OSA 135: Website Applications - focuses on developing websites and vector-based animations using Adobe Dreamweaver and Adobe Flash.
- Developed OSA 138: Introduction to Digital Video Editing - focuses on the principles of digital editing and production; including storyboarding, importing video and audio, and ethical issues related to video production using Adobe Premiere Pro.
- Developed OSA 238: Advanced Digital Video Editing - focuses on advanced editing and production using Adobe After Effects.

- Developed MIS 108: *Internet Basics* - this course was developed to prepare students with little to no Internet experience and to prepare them to take MIS 111 once they were introduced to basic concepts.
- Revised MIS 111: *Introduction to Internet Technologies* - updated course materials in order to provide students with more relevant content and mapped course to a vendor-neutral certification.
- Revised MIS 141: *Web Page Authoring and Publishing* - updated the course to reflect current W3 standards.
- Revised MIS 241: *Advanced Web Page Authoring and Publishing* - updated course content to focus on JavaScript and include jQuery programming principles.
- Developed MIS 251: *ColdFusion Programming* - focuses on ColdFusion markup language to create data-driven web sites.
- Developed MIS 259: *Flash ActionScript* - focuses on using ActionScript to design and develop interactive, data-driven interfaces and applications.
- Developed MIS 298: *E-Commerce Policy and Strategy* - a capstone course for the e-commerce certificate which focuses on the technical and managerial concepts of initiating or managing an online business.

Administration (Director of Faculty Development)

- Serving as Chair of the Faculty Development Committee - a 15 member committee comprised of faculty and administrators from various subdivisions of the college.
- Monitor funding related to faculty development and global education (faculty-focused) professional development opportunities.
- Provide faculty leadership for the development, implementation, and evaluation of the college's faculty development program.
- Provide faculty leadership and am responsible for planning faculty development in-service days. Past programs have focused on academic integrity, teaching diversity, embracing diversity, assessment of academic achievement, creating inclusive and positive learning environments, and quality and shared responsibility.
- Worked with the University of St. Francis and Performance Learning Systems to provide faculty and staff members with the opportunity to take graduate courses and a degree program focused on teaching and learning. More than 50 faculty and staff members have taken at least 1 graduate course since the program has started with 8 faculty members completing the advanced degree.
- Designed and delivered workshops for faculty and staff. Topics ranged from creating web pages, XHTML, creating web graphics, mail merges, spicing up blackboard, creating eye-catching documents, conflict resolution and others.

Committee Work

- Presidential appointment to the Strategic Technology Team (2010 to present)
- Presidential appointment to serve as the alternative member on the Illinois Board of Higher Education Faculty Advisory Council representing Moraine Valley Community College.
- Initial member of the Virtual College Team to investigate online learning (2001 to present). Currently known as the Online Learning Task Force.
- Moraine Valley Learning Academy Steering Team Member (2003 to present)
- 2011 AQIP Co-Chair Institutional Effectiveness Systems Portfolio
- Training Manager Administrator Group Member (2007 - present)
- Professional Development Steering Team (2004 to present)
- Member of the Curriculum Review Team (2004 to present)
- Faculty-Focused Advisory Team Member (2004 to present)
- Datatel - Blackboard Integration Team (2009 - present).
- Student Email Implementation Team Member (2008 - 2009)
- Cultural Awareness Team (2006-2007)
- New Faculty Mentor (2006-2007)
- 2006 AQIP Team Member: Instructional Effectiveness Action Project & Valuing People Systems Portfolio Team
- Presidential Advisory Council (2005 - 2007)
- Member of the Core Diversity Team (2004 - 2007)
- Moraine Valley Faculty Association Scholarship Committee Member (2003 - 2010)
- Online Course Procedures Committee (2004)
- Inspirational Quotes Committee (2003-2004)

**August, 2001
to present**

SparkleVision Design and Business Consulting, President

- Served as the Webmaster for the City of Palos Hills Web Site
- Serving as the Webmaster for the Palos Hills Police Department Web Site
- Designed and developed the Southwest Conference of Mayors' Website
- Designed the Sertoma Centre website (volunteer)
- Updated the Chicago Danish Consulate's Website.

**January, 2000
to August, 2000**

Governors State University · University Park, Illinois
Graduate Assistant

- Instructor for 2 sections of MIS 301: Basics of Information Technology: taught students basic computer hardware components and Office 2000 applications.
- Instructor for 2 sections of MIS 370: Management Information Systems: taught students how to integrate information systems into the business environment.

**February, 1998
to August 1998**

Eastern Illinois University · Charleston, Illinois
Graduate Assistant

- Analyzed survey data using SPSS.
- Assisted in the correction of a student database using Access and Visual Basic.
- Assisted in administrative tasks.

**January, 1997
to May, 1997**

The Executive Group · Chesterton, Indiana
Intern

- Contacted organizations for participation in a field study.
- Administered and evaluated the Thurstone Test of Mental Alertness (TMA), DiSC Assessment, and the 16PF Questionnaire.
- Worked closely with the human resource consultant to design a field study of the predicted validity of the firm's test battery.

**August, 1996
to May, 1997**

Valparaiso University · Valparaiso, Indiana
Research Assistant

- Conducted psychological research and experimentation pertaining to managerial decision making and employee performance.
- Created questionnaires and materials for data collection.
- Analyzed and evaluated data using SPSS.

**August, 1994
to May, 1996**

W.V.U.R. Radio Station · Valparaiso, Indiana
Marketing and Promotions Manager

- Developed and implemented a new marketing and brand strategy.
- Arranged promotional events to increase community awareness.
- Wrote and developed commercials for local companies and public service announcements.

Traffic Manager

- Hired and terminated student disc jockeys
- Trained new student disc jockeys.
- Created and scheduled public service announcements.
- Enforced FCC rules and regulations.

TECHNICAL SKILLS

Web Design & Development: Adobe Creative Suite 5.5 Master Collection (Photoshop, Illustrator, Flash, Dreamweaver, Fireworks, Premiere, After Effects, Audition, Encore), Microsoft Expression Studio (Web, Blend, Design, Encoder), SharePoint Designer, Audacity, XHTML/HTML/HTML5, CSS, JavaScript, jQuery, ActionScript 2.0/3.0, ColdFusion, WordPress, various Web 2.0 tools, Search Engine Optimization

Productivity: Microsoft Office Suite (both Mac and PC through 2010), Blackboard Course Management Tool, Moodle, Camtasia, Adobe Captivate, Adobe Acrobat, Windows OS (through 7), Mac OS, Windows Server 2003, IIS, Visual Basic, C++, Java, Lotus Notes, SPSS, SAS, networking concepts and router configuration (wired/wireless)

Certifications: COMMON Business Computing Associate, WOW Certified Associate Webmaster, Compia iNet+, MOUS Word

PRESENTATIONS

2010

- Creating and Sustaining a Successful Professional Development Program. Co-presented with Dr. Misha Turner. American Association of Community Colleges Plus 50 Initiative Conference.

2008

- Creating an Environment of Quality and Shared Responsibility: Cultivating a Culture of Academic Integrity. Co-presented with Dr. Sylvia Jenkins, Dr. Misha Turner, and Norma Grassini-Komara. League for Innovation in the Community College Learning College Summit 2008.
- How to Do the Möbius Strip with Blackboard. Co-presented with Alex Johansson. League for Innovation in the Community College Innovations 2008 Conference.

2007

- Improving Service Delivery on Our Campus: One Approach. Co-presented with Dr. Nancy Bentley, Yolanda Isaacs, and Holly Pilarczyk. 2007 Illinois Council of Community College Administrators Conference.
- Finding the Perfect Match: Learning Styles, Personality Types, and the Learning Environment. Co-presented with Norma Grassini-Komara. League for Innovation in the Community College Innovations 2007 Conference.
- Sustaining the Learning-Centered College through Faculty and Administrative Partnerships. Co-presented with Dr. Misha Turner and Norma Grassini-Komara. 2007 NISOD Conference.

2006

- Using Technology To Improve Your Bottom Line: Basic Internet Access Methods. Chicago Southland Chamber of Commerce Meeting.
- Sustaining the learning-centered college through administrator-faculty collaboration. Co-presented with Leslie Warren and Joe Chaloka. League for Innovation in the Community College Innovations 2006 Conference.
- Presented Digital Multimedia Technology curriculum to Techprep Faculty Members at Evergreen Park Consolidated High School.

2005

- Dressing up PowerPoint. 2005 Illinois College Automotive Instructor Association Conference.
- Resolving Conflict: Creating a 'Win-Win' Situation. Co-presented with Dr. Misha Turner. 2005 Moraine Valley Community College In-Service.
- Served as an information technology panelist for German visitors from Berufliche Schulen des Odenwaldkreises (BSO).

2004

- Online Orientation for Online Courses. Co-presented with Alex Johansson. League for Innovation in the Community College Innovations 2004 Conference.
- Teaching Academic ESL Reading Through a Guest Lecture Series. Co-presented with Michael Renehan and Ira Siegel. League for Innovation in the Community College Innovations 2004 Conference.
- Served as a Illinois Community College Board /Microsoft IT Faculty Development Institute (Working Connections) instructor for a week-long Web/Multimedia course with an emphasis on web development and video editing. 2004
- The Importance of Lifelong Learning: 2004 Keynote Speaker for the 2004 Phi Theta Kappa Induction Ceremony. Moraine Valley Community College.

2003

- Served as a Illinois Community College Board /Microsoft IT Faculty Development Institute (Working Connections) instructor for a week-long Web/Multimedia course with an emphasis on web development and graphic design.

2002

- Weaving the Web of Online Instruction. Co-presented with Alex Johansson. League for Innovation in the Community College Innovations 2002 Conference.
- Online Curriculum Development and Review. Co-presented with Alex Johansson. League for Innovation in the Community College Innovations 2002 Conference.

2001

- Enhance Student Success and Satisfaction!: Assessment tools and techniques for placement, performance and feedback. Co-presented with Jane Corradetti and Carol Straka. 2001 Assessment Fair Oakton Community College.

AWARDS & HONORS

Awards & Honors

- 2011 Teamwork Award Nominee · Moraine Valley Community College
- 2011 Professor of the Year Nominee · Moraine Valley Community College
- 2010 Teamwork Award Nominee · Moraine Valley Community College
- 2010 Professor of the Year Nominee · Moraine Valley Community College
- May 2010 Old Dominion Doctoral Fellowship Award
- 2009 NISOD Excellence Award · National Institute for Staff and Organizational Development
- 2009 Innovation of the Year Nominee · Moraine Valley Community College
- 2008 Master Teacher · Moraine Valley Community College
- 2007 Innovation of the Year · Moraine Valley Community College
- 2007 Master Presenter · National Institute for Staff and Organizational Development
- May 2005 Old Dominion Doctoral Fellowship Award
- 2004 Professor of the Year · Moraine Valley Community College
- Spring 2001 & 2002 Virtual College Challenge Grant Recipient
- 2001 COMMON Educational Foundation Scholarship Recipient

Honor Societies

- Phi Theta Kappa Honor Society, Moraine Valley Community College
- Golden Key International Honor Society, Old Dominion University
- Kappa Delta Pi Honor Society, University of St. Francis

ACTIVITIES

- Served as a Board Member on the Chicago Area Faculty Development Network
- Women in Technology Mentor
- MIS Student Club · Governors State University
- MBA Association · Eastern Illinois University
- Society of Human Resource Management, President of Valparaiso University Chapter · Valparaiso University
- Psychology Club · Valparaiso University
- Think Tank (College Computer Club), Mentor
- Japanese Anime Club, Mentor