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Academic Honesty in the Digital Age

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ACADEMIC HONESTY IN THE DIGITAL AGE

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This quantitative study investigates cyber-plagiarism among undergraduate college students, particularly the prevalence and motives for copying and pasting unattributed sources on written assignments within the theoretically rich and broader context of self-efficacy theory.

Four-hundred-thirty-seven students from three universities completed an online survey designed to examine the relationship between cyber-plagiarism and measures of self-efficacy. A Pearson Correlation revealed no empirical evidence to support the hypothesis that students cyber-plagiarize because they lack an ability to synthesize. The results also indicated that students do not perceive cyber-plagiarism as a socially acceptable practice at their universities, and that they strongly believe in an author's ownership in the digital age. Respondents reported that they almost never participate in cyber-plagiarism, yet perceive cyber-plagiarism as a prevalent practice among their peers.

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CHAPTER ONE

INTRODUCTION

Academic cheating has become easier in the digital age. Students can now copy information electronically from the Internet and insert it into their assignments as if it were their own writing. They can even access fully prepared papers from any of 251 (at last count) Internet 'paper mills'. Papers on any topic, at any level of sophistication can be downloaded in seconds (Selwyn, 2008a). The Center for Academic Integrity corroborated an increase in plagiarism among students in the digital age with the claim that "although all cheating is not plagiarism, the use of the Internet is increasing the plagiarism rate because of the ease of cutting and pasting unattributed material into writing assignments" (http://www.academicintegrity.org). Academic leaders have also concurred that plagiarism is on the raise in recent years. In a Pew survey of 1,055 private and public university presidents, over half said plagiarism in students' papers at their schools has increased in the past 10 years (Birch, 2011). It appears that a significant problem faced by colleges and universities today is the fear that many undergraduate college students lack honesty, authenticity, and originality in their work, especially in the context of an information society where content is abundant and easily accessible.

Pyle (2010) reported that more than 60% of undergraduate students nationwide admitted to cheating on assignments and exams and, according to one study, 40% of all U.S. college students said they had woven unattributed Internet material into their work. Pyle's study served as a key indication of students' academic dishonesty at a point in time. However, the fact that student codes of conduct intended to inform students of the consequences of plagiarism have existed for several generations at most colleges and universities suggests that plagiarism is not new in higher education (Harris, 2011).

Looking at plagiarism as a form of academic dishonesty in a historical context outside the United States, Eckstein (2003) pointed out that, as early as the 17th century, candidates for the oldest known national public examinations for entry into the Imperial Chinese civil service, smuggled notes into the examination hall. Plagiarism therefore, can be viewed as an old practice that is not limited to American society despite the fact that academic dishonesty has only been recognized as a serious problem in the professional literature since 1941 (Thorne-Figueroa, 2010).

Even as universities placed special emphasis on attracting, engaging, and energizing a new generation of students in the digital age, Batane (2010) reported that academic integrity, one of the fundamental values of higher education, was very often undermined by cheating on tests and other forms of academic dishonesty. Desruisseaux (1999) has claimed that plagiarism is nearing epidemic proportions.

Given the dominant role technology has come to play in making education accessible beyond geographical and temporal boundaries, an understanding of academic dishonesty becomes ever more important. This study examined one aspect of that topic: the practice of cyber-plagiarism with respect to students' academic self-efficacy.

Statement of the Problem

Academic dishonesty is a complex issue, as evidenced by the diversity of reasons why students cheat (Wideman, 2009). Over the past two decades, researchers have attributed plagiarism to fear of failure (Schab, 1991), lack of skill and knowledge (Batane, 2010), a range of issues from laziness or negligence to properly cite sources to simply exploiting technological means to get ahead academically (Paterson, Taylor, & Usick, 2003), a collapse in honest principles (Paterson, 2007), a socially acceptable behavior (Vojak, 2006), but the literature

establishing the relationship between cheating and academic self-efficacy remains limited. Frone (2004), for instance, focused on the relationship between cheating and measures of student self-efficacy and identification with their school, but since data collected came from a self-selected population, these results may not apply to other populations.

The above overview suggests that plagiarism is a very real form of academic misconduct among college students in the digital age, and that plagiarism is on the rise (Harris, 2011), but some facets of the issue remain unexplored. As has been pointed out, there are gaps in the literature on the relationship between plagiarism in the digital age and measures of academic self-efficacy, but other questions remain as well. How do undergraduate college students perceive intellectual content in the public domain of the Internet in the first place? How might the practice of cyber-plagiarism vary between genders and academic level? This study also addressed those questions.

Plagiarism as an academic offense extends well beyond academia. Since an occurrence can be validated only if detected by an authority figure, reported by witnesses, or self-disclosed, the time between occurrence and detection can vary greatly (Julliard, 1994). In February 2011, three years after he was awarded a doctorate in law, Germany's 39-year-old defense minister, Karl-Theodor zu Guttenberg, faced allegations that he had plagiarized portions of his doctoral dissertation. He later agreed to relinquish his Ph.D., stop calling himself "Doctor," and resign his ministerial position (Chronicle.com, 2011).

High profile cases of plagiarism continue to emerge as people demand greater accountability from their leaders. In June 2012, Romanian Prime Minister Victor Ponta was accused of plagiarizing large tracts of his 2003 law thesis. The anonymous accusations, published in the journal *Nature* and the German newspaper *Frankfurter Allgemeine Zeitung*,

followed the May 2012 resignation of Romania's education minister, Ioan Mang, over separate plagiarism claims (John, 2012). In April 2012, a 36-year old South Korean International Olympic Committee member, Moon Dae-sung, a Taekwondo Olympic gold medalist and an elected politician, reportedly left the ruling conservative party after his university claimed much of his doctorate thesis plagiarized another person's work ("Politician quits over plagiarism," 2012). In the United States, Time magazine and CNN suspended writer and television host, Fareed Zakaria, the Indian-born American, also a Harvard Ph.D., and foreign-policy specialist, after he apologized for plagiarizing a New Yorker article in his column on gun control in the August 20, 2012 issue of *Time Magazine* (Haughney, 2012).

Cases of plagiarism as academic offenses have become a barometer of authenticity in academe and beyond. In this context, instant or delayed emergence of plagiarism cases has caused the fall of scholars and famous historical figures when it is found, that they were not the originators of previously attributed witty or memorable remarks (Christenbury, 2009).

Purpose of the Study

The dominant role of technology in education creates an impetus for this research designed to understand how undergraduate students use and abuse of these powerful tools impacts their ability to succeed in the digital age. The purpose of this study was to examine the topic of Internet plagiarism also known as cyber-plagiarism among undergraduate college students. More precisely, this study analyzed the topic of copying and pasting unattributed sources on written assignments in the theoretically rich and broader context of (Bandura, 1997) self-efficacy theory.

Cyber-plagiarism has been associated with a variety of factors including, human cognitive development, socio-cultural interaction and the integration into a knowledge

community. This study explored in depth the extent to which undergraduate college students engage in copying and pasting information without attributing the source of the original information. The study also endeavored to understand how students view content and author's ownership in the digital age. Throughout this study, the terms academic dishonesty, plagiarism, academic cheating and cyber-plagiarism were used synonymously to express the act of engaging in

> behaviors that are contrary to the values and moral character of scholarship, which is meant to be trusted by the public, because the scholar is assumed to be committed to the fullest and clearest understanding of what he or she is studying, and to the most honest and undistorted representation of that knowledge as circumstances allow. (Sergiovanni & Starrat, 2007, p. 75)

Theoretical Framework

The study was based on the theoretical framework of Bandura (1997) who espoused that one's sense of self-efficacy can play a major role in how one approaches goals, tasks, and challenges. Bandura defined self-efficacy as one's belief in one's ability to succeed in specific situations. Self-efficacy affects behavior "by its impact on goals and aspirations, outcome expectations, affective proclivities and perception of impediments and opportunities in the social environment" (Bandura, 2006, p. 309). Clearly, self-efficacy could be related to students' academic self-confidence and the behavior students choose in order to reach their goals in a social environment.

Since higher education is a social environment, it makes sense to look at the significance of self-efficacy in academic success in the digital age. According to Bandura, the main sources of self-efficacy are: learners' past performances, observation of how well others do, verbal

persuasion from others, and somatic and emotional states (Bandura, 1989). The implied correlation between self-confidence and on task behavior emerged as a new lens through which this study explored why students engage in cyber-plagiarism.

Predicated on implications of Bandura's self-efficacy theory, this study attempted to discover whether how students feel about their academic abilities has any impact on how they approach written assignments. Do undergraduate students cyber-plagiarize because they are not confident in their abilities to synthesize? The study drew from early literature related to plagiarism from Uhlig & Howes (Uhlig & Howes, 1967) to the most recent literature available, such as Schroth (Schroth, 2012).

Definition of Terms

Self-efficacy: "one's belief in one's ability to succeed in specific situations" (Bandura, 2006, p. 309).

Plagiarism: the use of published or unpublished work or specific ideas of another individual, without attributing appropriate credit to that person or source (Smith, 1997).

Academic Integrity: "the adherence to agreed-upon moral and ethical principles when engaging in academic or scholarly pursuits. Academic integrity is 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" ("What is academic integrity and why is it important?," 2011).

Cyber-plagiarism: the downloading of papers from the Internet, in whole or in part, and submitting the paper as original work (Oliphant, 2002).

Digital Native: a person who was born during or after the introduction of digital technology for whom the concepts of digital technology are very familiar.

Digital Age: the computer age in which there is a higher level of information transfer and instant access to knowledge.

Information Society: a society in which the creation, the use, and the manipulation of information are a norm or a simple cultural activity.

Perception: "your understanding of or simply how you become aware of through your senses" (The New American Webster Handy College Dictionary, 1994).

Limitations of the Study

A study involving the measurement of academic integrity through a survey instrument that asks students to self-report their academic self-efficacy and level of participation in academic dishonesty bears significant limitations. In addition to self-reporting issues, such studies must consider peer perception and self-inferred ethical foundation pressures. Allan (1998) pointed out that self-report may not always reflect the true nature of dishonesty, and Houston (1986) suggested that students might falsely not admit to cheating because of peer pressure. In this study, although participants perceived cyber-plagiarism as a prevalent practice among their peers (see Table 29), they indicated that they themselves almost never engaged in cyber plagiarism (see Table 36). Another limitation this study considered involved the potential for fear that self-reporting might negatively impact a respondent's academic career in the case that the researcher was once affiliated with the State System of Higher Education in which the research was conducted.

Although the results of this study serve as another indicator of the prevalence of cyber-plagiarism in recent years, it is important to stress that academic dishonesty comprises a continuum from negligence to properly cite sources to severe transgressions of exploiting

technological means to get ahead academically (Paterson et al., 2003). Allen, Fuller, and Luckett (1998) pointed out that plagiarism is a great temptation to students in this digital age, and later described the spectrum of plagiarism as ranging from the purchase of term papers on the Internet to improper citing of sources in reports to the inappropriate use of clickers in the classroom.

Research Questions

In the attempt to understand plagiarism in the digital age, factors such as students' common method of plagiarism and their perception of societal rules cannot be ignored. The current study was intended to examine the relationship between cyber-plagiarism and measures of student self-efficacy by answering the following research questions:

1. What is the significance of the relationship between self-efficacy and cyber-plagiarism among undergraduate students?
2. What is undergraduate college students' perception of author's ownership in the digital age?
3. What is undergraduate students' perception of the social acceptability of academic dishonesty in the digital age?
4. What is undergraduate college students' perception of the prevalence of cyber-plagiarism among their peers?
5. To what degree is cyber-plagiarism a prevalent practice among undergraduate college students?

This study also sought to evaluate how institutional practices and the perceptions of students could be affecting the culture of academic integrity as a whole. For Young (2001), the use of plagiarism-detection software by professors "appears to be growing," therefore, as colleges and universities continue to invest in plagiarism detection technologies it becomes

important to gauge the effectiveness of policies and procedures that help promote a culture of academic integrity. Blum (2009), for example, noted a lack of education in the nuance of what is intellectual property and proper citation standards, and called for better instruction in these areas.

The current study was conducted, with relevant permissions, as a self-administered online survey at three universities in the Pennsylvania System of Higher Education (PASSHE) in the northeastern United States. PASSHE universities are equipped with Learning Management System (LMS) that allows them to deliver courses face-to-face, synchronously and asynchronously. Since the researcher was once affiliated with one of the universities where the research was conducted, measures were adopted to maintain anonymity of respondents. No respondent could be identified based on the responses provided or through other means. The researcher received permission to modify two survey instruments from previously published studies, and consequently used 17 questions from Scanlon & Neumann (Scanlon & Neumann, 2002) and three questions from the academic self-efficacy scale (Hoover-Dempsey & Sandler, 2005) to collect data from undergraduate college students.

The selection of a population of undergraduate college students was appropriate in a study to examine cyber-plagiarism across genders and academic levels. The selected instrument was appropriate and relevant for this study since it was developed from instruments tested and administered in other initial studies that provided significant results. The Scanlon study found that when 689 undergraduates (85.9% between the ages of 17 and 23; 87.5 % in the first through fourth year) from nine colleges and universities completed a survey on Internet plagiarism, a substantial minority reported they use the Internet to copy and paste text into their papers without citation. The Hoover-Dempsey study concluded that parent reports of mechanisms engaged during involvement (encouragement, modeling, reinforcement and instruction) were positively

related to selected student proximal academic outcomes, most notably academic self-efficacy and student self-regulatory strategy use.

Significance of the Study

Wideman (2008) has suggested that

> cheating calls into question the quality of an institution's academic program, the value of its degree and the capability of its graduates. As such, academic dishonesty has been the subject of more than 100 studies over the last 30 years. (p. 1)

The intent of this study was not to simply add to the existing literature on academic dishonesty among college students, but to analyze a possible psychological cause for cyber-plagiarism, examine how students from different genders and different academic levels use intellectual property, their understanding of plagiarism as a fundamental academic offence, and the impact of practices implemented and communicated at universities to prepare students for responsible authorship in the digital age.

The results of this study will help faculty and administrators to educate future subject-matter experts and prepare responsible digital citizens for the digital age. There is a need to teach our children how to live and work in a new digital society (Ribble, 2009).

Chapter Summary

How might colleges and universities promote a culture of academic integrity in the digital age where digital natives, i.e. students, are concerned with the result rather than the learning process (Piascik & Brazeau, 2010)? In an undergraduate learning environment where letter grades tend to be firmly associated with students' impression of the main outcome of many courses, it is no exaggeration to wonder whether the value of learning and the experience of constructing sound knowledge have been abandoned in favor of a passing grade. Student

achievement is often measured by the quality and the amount of information produced on a test, and plagiarism may well be a result of an "overpowering importance attached to locating and transferring facts and opinions and the lack of significance given to thinking and independent expression" (Eble, 1977, p. 125). Unfortunately, other than routine testing, very little is done to measure the knowledge retained by students and more importantly, how confident they are in applying their knowledge to concrete situations. As Deci (1995) put it, people that employ tests to motivate defeat the desire to learn in those people they attempt to help.

One might even argue that since the undergraduate curriculum is not necessarily intended to connect the acquisition of knowledge with the purpose of that knowledge, students may resort to cyber-plagiarism as an effective way to produce content that fully satisfies the requirements of a course or program. Wolk (2003) wrote: "I took years of high school Algebra, geometry and trigonometry, and forgot most of it before the ink on my diploma was dry" (p. 4) to highlight his perception of a need to better help students apply what they have learned.

This chapter described questions and research related to the topic of copying and pasting unattributed sources into their written assignments in the context of Bandura's 1997 self-efficacy theory. Chapter Two presents a literature review summarizing the theories related to academic self-efficacy. Chapter Three presents the methods for data collection, as well as the research questions and hypothesis for the current research. Chapter Four provides detailed analysis of the collected data for this research. Chapter Five provides a discussion of the key findings to be considered for future research, and the limitations inherent in such research.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

McCabe (1993), founder of the Center for Academic Integrity (CAI) at Duke University, claimed that, depending on how academic dishonesty is defined, studies have reported that anywhere from 13 to 95% of college students engage in some sort of academic dishonesty. In a different study, McCabe and Trevino (1996) surveyed more than 6,000 college students at 31 campuses and found that two out of three admitted to engaging in at least one listed dishonest behavior. The study concluded that plagiarism is on the rise among college students. While the results of McCabe's studies are eye opening, they do not provide an indication of student confidence in academic abilities or how knowledge and understanding of author's ownership could be affecting their decisions.

Bandura (1997) suggested that one's sense of self-efficacy, or belief in one's ability to succeed in specific situations, plays a major role in how one approaches goals, tasks, and challenges. In the information society of the digital age, computer technology has engendered new behaviors that make it easier for students to locate information, but not necessarily to synthesize it. These new behaviors could impact a college student's ability to succeed in a culture of academic integrity.

Self-efficacy in the Learners' Performance and Behavior on Task

The success experienced by a learner generates positive self-perceptions of ability (Bandura, 1989). Doing well on an assignment helps the learner establish a sense of assurance that he or she can succeed on current and future tasks. In a study on the perceptions of students in developmental classes, Koch (2012) inferred that developmental students lack confidence in their

academic abilities due to identified deficits, which can then affect performance and academic outcome.

Self-efficacy affects ability (Bandura, 1986), but it also helps to establish an affiliation between ability and academic performance that leads to achievement as an outcome. In a study to test the linkage between self-efficacy and performance in social cognitive theory, Harrison, et al. (1997) found that increased performance in computer-related tasks was significantly related to higher levels of self-efficacy, and decreased performance in computer-related tasks was significantly related to lower levels of self-efficacy. These results are consistent with Bandura's (1997) self-efficacy theory, further confirming that one's sense of self-efficacy plays a major role in how one approaches goals, tasks, and challenges.

Administrators and faculty have suggested that undergraduate students achieve a stellar academic college outcome due, in part, to an excellent academic preparation attained before their college years. Bandura's self-efficacy hypothesis suggests that these high school students should possess a positive perception of their ability to succeed in college upon entering higher education. In actuality, however, few undergraduates are well-prepared academically for the college curriculum. A 2012 study from ACT suggests that more than 60% of high school graduates enter college underprepared for academic and career success ("Survey: 60 percent of high school graduates underprepared for college," 2012). Consequently, scholars and researchers alike have investigated this phenomenon, resulting in numerous studies related to students' academic abilities and college preparedness. Greene & Foster (2003), for example, found that less than one third of high school graduates are college-ready in the areas of reading, writing, and mathematics.

With this astonishing rate of underprepared students, it is almost certain that the majority of undergraduates become aware at some point that they might not have the ability to perform at the postsecondary level based on feedback from the faculty. It remains unclear how students with reduced self-efficacy manage to improve their outcome.

Gender Differences in Academic Self-efficacy

Socio-cognitive theories (Bandura, 1986; Dweck & Leggett, 1988) espouse that entity beliefs, motivational goals, and gender stereotypes interact to affect self-perceptions of competence and intellectual performance. According to Sander (2012), scholars and some college officials do acknowledge a gender gap that favors men, in that men continue to earn more than women, and tend to dominate positions of power and prestige in government and the private sector.

Examining why students choose a college major in the STEM fields, Powell et al. (2012) found that female STEM students reported a lower intrinsic motivation ($p = .08206$, Cronbach's alpha = .305) and a lower tendency toward a deep approach to learning ($p = .0744$, Cronbach's alpha = .869) than male STEM students. In an earlier study on trends in educational equity of girls and women, Bae (2000) reported that while women consistently earned higher grades than men in reading and writing, male students achieved better outcomes in mathematics and science. The study also found that "females were much more likely than males to take Advanced Placement (AP) exams in English and foreign languages and to score 3 or higher, which usually allows them to receive college credit" (p. 4).

In a meta-analysis of 187 studies containing 247 independent studies (N = 68,429) on gender differences in academic self-efficacy, Huang (2013) identified an overall effect size of .08, with a small difference favoring males. Through moderator analysis, the study demonstrated

that content domain was a significant moderator in explaining effect size variation. Females displayed higher language arts self-efficacy than males. Males exhibited higher mathematics, computer, and social sciences self-efficacy than females. Gender differences in academic self-efficacy also varied with age. The largest effect size occurred for respondents aged over 23 years old. For mathematics self-efficacy, significant gender differences emerged in late adolescence.

These findings (Bae et al., 2000; Huang, 2013; Sander, 2012), consistently reveal an academic gender gap that favors male students at the postsecondary level and perhaps beyond. Such studies help to quantify the abstract nature of socio-cognitive theories, and also create an opportunity to examine how gender stereotypes interact to affect self-perceptions of competence, and behaviors adopted to deliver intellectual performance. Bandura (1997) identified the classroom as well the home as origins of gender bias. Teachers and parents often convey in subtle ways that they expect less of girls academically.

Self-efficacy, Motivation and Action

Bandura (1997) stated that "by being cognitively represented in the present, conceived future states are converted into current motivators and regulators of behavior" (p. 122). It would be reasonable to postulate that successfully completing a course, a test, or an academic program is an undergraduate student's conceived future state. In an attempt to clarify some factors that affect outcome, Murdock (2007) wrote: "given that cheating is, in fact, one way to improve one's achievement outcomes, it is not surprising that variations in achievement motivation have been linked to dishonesty" (p. 18). Murdock's assertion reinforces the potential relationship between self-efficacy and the behavior one might elect to accomplish a task.

Bandura (1997) summarized the causality between self-efficacy, motivation, and action as a matter of cognitive motivation, stating that,

> in cognitive motivation, people motivate themselves and guide their actions anticipatorily through the exercise of forethought… they form beliefs about what they can do, they anticipate likely positive and negative outcomes of different pursuits, and they set goals for themselves and plan courses of action designed to realize valued futures and avoid aversive ones. (p. 122)

The potential causal relationship between self-efficacy motivation and action leads to two distinct hypotheses worth noting: (a) students with positive self-efficacy are confident in their ability to produce good quality work and are therefore less likely to plagiarize, and (b) student with negative self-efficacy are not confident in their own ability to produce good quality work and are more like to plagiarize (Frone & Finn, 2004).

Generalization of Bandura's theory of self-efficacy leads to scientific curiosity about behaviors students might elect in order to mitigate negative academic self-efficacy in the digital age where the ubiquitous presence of information technology makes it easier to access and exchange materials used for educational purposes.

Background of the Impact of Information Technology in Education

Technological innovations of the 21st century undoubtedly lead technology consumers to wonder what the world would be like without fundamental breakthroughs by previous generations inherently incorporated into today's society. Throughout history, new methods have emerged to cope with environmental and biological changes. In recent decades, the focus of human invention has expanded into technology. The field of communication technology is a good example of how innovations have impacted society. Figure 1 illustrates an evolution in the field of Information and Communication Technologies.

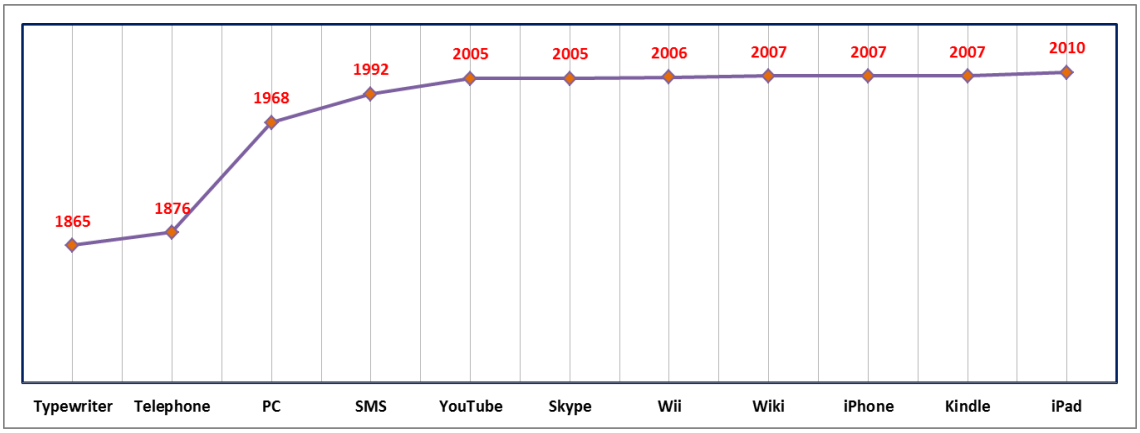

Figure 1. Brief overview of evolution of information ttechnology

Before announcing his plan for securing America's digital future, President Barack Obama (2009) acknowledged that "revolutions in Communications and Information Technology have given birth to a virtual world" in order to substantiate the need to secure this new environment. Corroborating the fact that information and communication technologies now vastly dominate socio-cultural interaction, Oblinger (2010) wrote, "rethinking the future of higher education must take the innovations of the digital age into consideration" (p. 4). It is apparent that national and professional leaders recognize the relevance of Information and Communication Technology in socio-cultural interactions.

The literature on the impact of technology on education includes Prieto, Villagrá-Sobrino, Jorrín-Abellán, Martínez-Monés, and Dimitriadis (2011) who believed that, when properly orchestrated, technology can produce an improvement of learning experience for students. More than a decade earlier, Bandura (1997)described the impact of information technology on education as, "extending beyond matters of occupational preparation" (p. 213). Information Technology in education has moved from being a catalyst to becoming an active element in the learning process.

Information Technology as a key factor in the livelihood of educational institutions has led technology advocates to suggest that, "if a university opens up and embraces collaborative learning and collaborative knowledge production, it has a chance of surviving and even thriving in the networked global economy" (Tapscott & Williams, 2010, p.16). Many colleges and universities have responded to this new imperative by establishing a new relevance for collaboration, adopting advanced usages of technology in education. The field of Instructional or Educational Technology has emerged in schools, colleges and universities to help faculty apply collaborative learning technologies in classroom activities. In the digital environment, the teaching role has changed from simple to complex, requiring teachers who engage students in all aspects of pedagogical practices to address changes in a wider society (Okojie, 2011).

Perceived educational enhancements delivered through the use of instructional technology have gained such importance that the availability of technology has become a determining factor for students choosing a new school, college or university. Countries other than the United States are also incorporating information communication technologies into their curriculum in order to gain legitimacy and be perceived as economically and politically competitive in the global education environment (Seung-Hwan & Yun-Kyung, 2009).

For some institutions, the degree of advanced technology usage in their instruction is not a simple matter of installing technology into a classroom, but a challenge of how best to design, conduct and deliver instruction in a fully virtual environment. One result of information and collaboration technologies in education is the emergence of online teaching and testing, and other e-learning initiatives now proliferating across the country, changing traditional notions of how education is delivered (Bushweller, 2002).

Twenty-first century businesses and corporations require more collaboration among individuals, across departments and divisions that are sometimes spread across the globe, making technology-mediated education a potentially good model for the future workforce. Browne (2003) confirmed that in the online environment, advantages are identified in the opportunity to consult on issues of practice across the globe.

However accessible and attractive education in cyberspace might appear in the 21st century, the concept has yet to be fully accepted by the community of traditional face-to-face educators. Some experts argue that cyber education lacks the social interaction of face-to-face institutions and may, therefore, fail to deliver a holistic education. Comparing the advantages and disadvantages of education in cyberspace, Platcow (2011) reported that virtual education lacks sufficient structure, in that online courses allow students to set their own schedules, which causes problems for those who have trouble staying motivated. Aoun (2011) concluded that research learning, peer exposure, and campus diversity are a vital aspect of the American college experience, in arguing against the prediction by entrepreneur Bill Gates that online education will replace place-based higher education.

Participants in a study on the perception of online higher education did not recognize online education as equivalent to master's degree preparation programs for student affairs professionals in traditional face-to-face classrooms. The study found that professionals place a high value on experience and personal contact with faculty, peers, and administrators throughout the educational experience and did not perceive this as available through online education (Connolly & Diepenbrock, 2011).

In reconciling opposing views on the role of technology in education, Tantillo (2009) offered a rather vivid, but yet balanced perspective when he wrote,

> the same technology that has transformed the power of publications now threatens the integrity of publications. Yield to cyberspace-cheating, and student journalists or journalism publications can wreck themselves and destroy the reputation of outstanding programs and service to the school community. (p. 28)

Socio-cultural Norms in the Digital age

In analyzing norms and the trends, it is import to note that the typical college aged (17 to 21-year old) student of the 21st century was born in the digital age, making this population "digital natives." Faculty and administrators exposed to analog methods of information transfer in their formative years are likely at very different stages of transition into the digital society. These people should, therefore, be placed in the category of "digital immigrants," and are more likely to exhibit a higher level of difficulty adjusting to, or embracing, a digital leaning environment. In a comparison between human developmental groups, Papalia surmised that, "children and adolescents are better able to assimilate a wide variety of new knowledge" (Papalia, Stern, Feldman & Cameron, 2002, p. 226). This suggests that digital natives consisting of traditional college-aged students are likely to have a higher cognitive development in Information Technology competency than previous generations. One can reasonably assert a non-scientific conclusion that a technology-dominated education environment provides a natural milieu for digital native students, but not necessarily for faculty.

In a presentation on "Cybercitizen's Need for Copyright" at the 2001 Libraries in the Digital Age conference held in Dubrovnik, Croatia, Predrag Pale, from the University of Zagreb, argued that copyright is becoming less important in the digital world. According to Levine (2001):

> Pale noted that government agencies, which have the responsibility of copyright protection, find it almost impossible to control violations, and concluded that copyright would decrease in importance (except for specific publishers, authors, and works) because digital document protection would be based on digital signatures, public-trusted archives, and new methods and systems to provide authorship verification, integrity verification, and acceptable-use policy determination. (p. 56)

The notion that plagiarism is on the rise in the digital age could be exacerbated by the fact that copyright violation constitutes a legal offence punishable by law, while plagiarism by students or instructors is considered academic dishonesty subject to reprimand up to and including expulsion (Gardiner, 2009). Although plagiarism offenses are of minor legal importance, they merit close academic scrutiny (Selwyn, 2008b).

Combining the cognitive abilities of the digital generation with the strong presence of technology in education, student behavior of interest to this study is likely to be found in computer technology-generated practices such as online social networks, online collaboration tools, and simulation software applications such as *Second Life*. Reid Cushman, Research Assistant Professor of Ethics and of Administration and Finance at the Miller School of Medicine at the University of Miami, in "The Net Generation Goes to College," reported that today's generation of "tech-savvy 'Millennials' have lots of gadgets, like to multitask, and expect to control what, when, and how they learn" (Cushman, 2005). And they are bringing their consumer attitudes to education (Levine & Sun, 2002). With the emergence of new socio-ethical norms, it remains unclear how schools and colleges are preparing students of the digital age to adhere to a culture of academic integrity, especially when Straw (2002) found that younger students plagiarize more often than mature students.

In a depiction of the dynamic nature of learning in the digital age, Longford (2005) wrote:

> As new literacies flourish, teachers face a group of learners who have already engaged in the remaking, remixing, and renaming of their world in virtual reality and in their everyday one. However, even though students may enjoy partial or full membership in a participatory culture facilitated by new media environments (i.e. YouTube, MySpace, Friendster, Facebook, ad infinitum) and digital media devices (cell phones that capture still and video images, play MP3s, read and send e-mails, make online purchases, etc.), many learners lack the abilities of critical analyses and evaluation of the social and institutional rules, regulations, and norms embedded in those environments and cultural practices. (p. 70)

The notion that students lack the abilities of critical analysis and evaluation of social and institutional rules presents another aspect of plagiarism in the digital age. Solving this problem may require a college preparatory curriculum that rigorously teaches about intellectual property and academic honesty from an early age and relates the lesson to information technology such that students understand plagiarism within the larger context of our cultural values (Blum, 2009). In a macro analysis of socio-ethical norms of the digital age, Lipsett (2009) pointed out that, although today's students are happy to participate online, they are casual about legal and copyright issues, and evaluating and attributing information. Corroborating the emergence of new socio-ethical norms in the digital age, Vojak (2006) asserted that not only is cheating increasing, but it is becoming more socially acceptable.

The literature related to social behaviors in the digital age consistently maintains that digital natives are very liberal about sharing information. In a 2010 Pew report, Georgetown

University professor Michael Nelson confirmed this by writing that, “the willingness of digital natives to share information is ingrained into their makeup similar to those who lived through the depression in the U.S. have an ingrained thriftiness” (Baumann, 2010).

The Practice of Cyber-plagiarism Among College Students

Established in 1636, Harvard University has managed to strike the right balance between academic rigor and student success over several centuries to position itself as one of the most prestigious universities in the world based on the high achievements of its graduates. In August 2012, however, the reputation of a Harvard education suffered a setback when news outlets reported that Harvard University was investigating allegations that nearly half of students in a spring 2012 undergraduate class may have plagiarized or "inappropriately collaborated" on their final exams (Talanova & Kessler, 2012). Although these allegations have not led to academic convictions, they put into question the culture of academic integrity at all colleges and universities.

Lathrop and Foss (2000) wrote:

> We know students are cheating more often today; their cheating techniques are increasingly sophisticated, and many express guilt or remorse only if they are caught. Why do they cheat? The bottom line seems to be (1) it's easy, especially with new technologies, (2) fewer than ten percent are caught, and (3) most of those who are caught get off without serious penalty. The byword appears to have changed from Don't cheat to Don't get caught. (p. 1)

The notion that students focus not on plagiarism avoidance, but cover-up, leads to concern that cyber-plagiarism among students has moved beyond mere academic offense. Cyber-plagiarism appears to be taking on characteristics of a fraudulent activity, based on the Cressey (Cressey,

1950) theory that fraud requires three criteria: perceived pressure, perceived opportunity, and rationalization.

Arguments to explain cyber-plagiarism highlight the proficiencies and the deficiencies of Information Technology in education at length, and as Brown and Emmett (2001) pointed out, it is difficult to compare student cheating behaviors that are meaningful from different studies conducted over time. Still, two fundamental questions remain: (a) do students plagiarize because they are not able to synthesize? and, (b) what is students' perception of the content available in the Internet public domain?

To further explore the claim that plagiarism is on the rise (Allen et al., 1998; McCabe & Trevino, 1996), figure 2 illustrates a report from plagiarism detection firm, Turnitin.

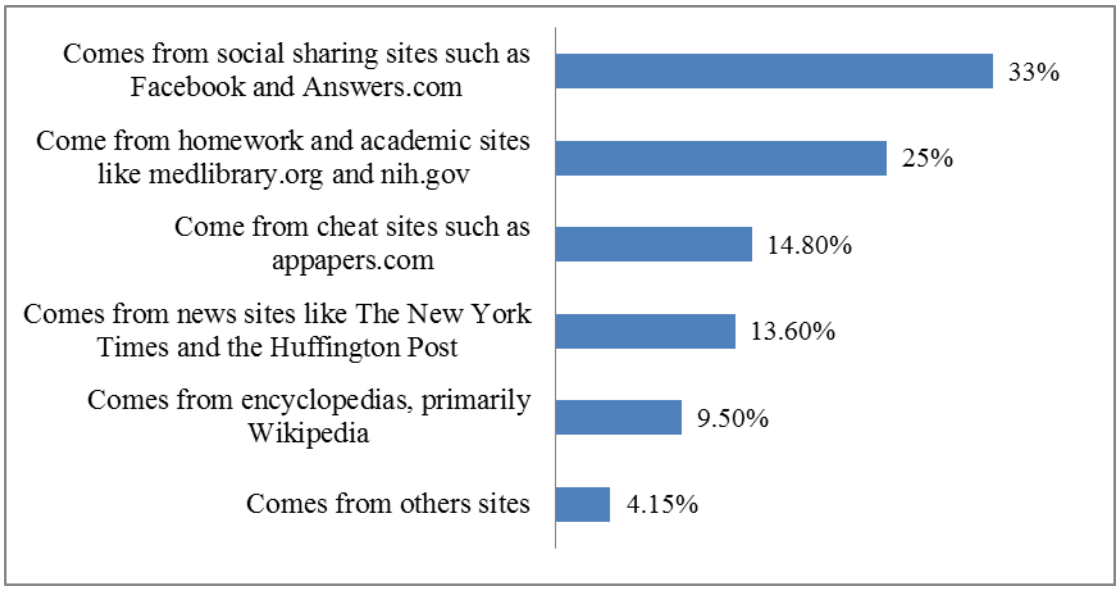

Figure 2. A report on the various sources of cyber-plagiarism

The report found that one-third of "matched content" from papers checked by its service came from social sites. This does not include Wikipedia, which remains the largest single source for plagiarism and represents another ten percent of matched content. In contrast, only 15% of

matched content came from paper mill and cheat sites. The report concluded that students who turn in unoriginal work are more likely to grab content from social sites than paper mills ("The New Face of Cheating How students are using social sites to get ahead," 2011, p. 14). Turnitin suggests that students may know it's wrong to buy a paper online yet not understand what it means to be original. In the context of the digital age, students may not know they're cheating when they're cheating.

In a research study of technology addiction among teenagers, Andrew Kakabadse and Nada Kakabadse (Kakabadse & Kakabadse, 2009) found that technology addiction is having a disruptive effect on student learning. A high proportion of teenagers (59.2%) admitted to inserting information straight from the internet into schoolwork without actually reading or changing it, and a full 28.5% of students in the study deemed this practice as acceptable despite recognizing that such behavior is considered plagiarism.

The complexity of academic dishonesty is evident in the diversity of reasons why students cheat (Wideman, 2009), and the multi-dimensional nature of sources for plagiarized content in the digital age demonstrates that academic dishonesty requires educators to take a leadership role. Donald McCabe of Rutgers University, Linda Klebe Treviño of The Pennsylvania State University and Kenneth D. Butterfield of Washington State University conducted several researches that became the basis for their publication *Cheating in Academic Institutions: A Decade of Research*. In a study of almost 1,800 students at nine medium-to-large-size universities in the 1990-1991, 1993–1994 and 1995-1996 academic years (McCabe, Trevino, & Butterfield, 2001), peer-related factors emerged as the most significant correlate of cheating behavior.

In 2003, the CAI published a second survey (McCabe et al., 2001) which found that almost 80% of undergraduate student respondents admitted to one or more incidents of plagiarism. The CAI survey further reported that, on most campuses, more than 75% of students admitted to some form of academic dishonesty. Other findings included: (a) honor codes were a deterrent to cheating, (b) Internet plagiarism was becoming a greater problem on campuses, (c) faculty have been reluctant to punish alleged cheaters, (d) serious forms of cheating on tests/examinations and unpermitted student collaboration have increased significantly according to longitudinal studies; and (e) academic dishonesty among high school students is a significant problem ("What is academic integrity and why is it important?," 2000).

The above overview suggests that plagiarism is, indeed, on the rise in the digital age (Allen et al., 1998) and the startling findings of the Center of Academic Integrity (CAI) report raise questions about how educators and their students perceive authorship, plagiarism and academic integrity in general.

In a study of faculty and student perception of plagiarism, Pritchett (2010) surveyed undergraduates and faculty from Alliant International University, California International Business University, College of the Sequoias, and Shawnee Community College. Although the results indicated no significant difference between faculty and students' perception of plagiarism overall, the study did find a significant difference between male and female undergraduates under 20 years old, and between faculty and students, in the perceived seriousness of plagiarism.

The dominant presence of technology in education in the twenty-first century has engendered an online education environment that encourages many students to feel comfortable exchanging ideas. The distance that technology establishes between teacher and learner sometimes leads detractors of Information Technology to assert that education in the digital age

is therefore conducive to cheating. Szabo and Underwood (2004) found that third year students were less likely to cheat than first or second year students, and that more male students (68%) than female students (39%) cheated.

Patnaude (2008) administered a survey designed to measure faculty perceptions regarding the extent to which the online course environment affects academic honesty. A convenience sample of participants from a population of faculty members who teach online courses at the four campuses of the University of Houston (UH) System was selected, yielding 172 responses. Data analyzed through descriptive statistics, found that a majority of respondents believed the online environment encouraged cheating. However, a majority also believed that students only "sometimes" committed various acts of academic dishonesty.

College students' unethical behavior in the 21st century, take place within a continuum that includes buying and selling of academic papers through the Internet, and using the Internet to have another person write an academic essay or paper, without this authorship being acknowledged (Page, 2004).

In another study, Shaw (2004) found that students reported significantly higher overall rates of academic dishonesty in traditional courses than in online courses. Rather than focusing on how teachers and learners perceive the practice of plagiarism, this study juxtaposed traditional and online methods of delivering instruction, and then measured resulting levels of dishonest behavior. Shaw's findings offer an intriguing contrast to Patnaude (2008), who concluded that online education is prone to plagiarism and academic dishonesty. Further, Shaw's study found no significant difference in the rates of dishonesty in traditional courses based on age, gender, academic classification, or intended field of study. Rates of cheating and plagiarism were, however, higher for respondents with lower grade point averages. Students in the study reported:

they more frequently engaged (a) in cheating on tests than on written assignments, (b) cheating on out-of-class assignments, (c) using technology to cheat. Shaw used regression analysis to derive a weak relationship between intended field of study and rates of academic dishonesty. The study suggested that a personal code of integrity was perceived to be the most effective deterrent, that cheating was considered only a moderate problem in higher education, and recommended further research on academic dishonesty as education in the cyber environment evolves.

With computer and Information Technology's significant impact on education, it becomes imperative to explore whether certain norms that have existed in the face-to-face learning environment can be transferred into the learning environment of the digital age. In a study exploring how a culture of academic integrity can be cultivated online, where distance defines the very relationship between faculty and students, Myers (2010) interviewed full-time faculty in the department of Computer Information Science and students registered in computer classes at a community college during the 2010 spring semester. Three themes emerged from data analysis: (a) the lack of relationships with peers can increase academic integrity among students in the online environment, (b) inability to form relationships with faculty and interact with professors on demand in the online environment can have a negative impact on academic integrity, and (c) appropriate accommodations made for teaching online may actually eliminate the students' ability to cheat and, as a result, increase academic integrity.

Examining plagiarism outside the United States, Talpos (2007) surveyed 69 higher education faculty in eight countries concerning their definition of plagiarism, attitudes toward plagiarism, and the effect of the Internet on plagiarism. Of the respondents, 62% believed plagiarism was defined differently in different cultures, using language such as "more flexible"

and “group learning” in place of the term, "plagiarism". The vast majority of respondents (88%) believed easy access to information on the web has led to increased student plagiarism. While Talpos’ study showed a positive correlation, r = .267, between being under 40 years of age and having a more lenient attitude toward plagiarism, it found a negative correlation, r = -.241, between being in the sciences and a more lenient attitude towards plagiarism.

Cyber-plagiarism Detection and Prevention Methods

Communication and collaboration technologies now vastly dominate socio-cultural interactions. When properly utilized, collaboration technologies result in an expeditious delivery of information, especially in education. Some literature suggests that increasing information technology in education is due to complex emerging relationships between industry, government, and universities (Lent, Tracey, & Brown, 2006). In some cases, a strong presence of Information Technology in higher education is related to factors such as (a) information literacy, (b) measures of accountability, (c) partial or total funding of educational programs by external agencies, and (d) complete collaboration partnership between education and other agencies in order to create and promote greater access to education for a larger population.

The expeditious delivery of information through open and interconnected technological means has provoked an abundance of content for which provenance is not always well determined, well established or well attributed (Bouman, 2009). Supporters and defenders of academic integrity have suggested that some aspects of the digital age diminish college students’ ability to respect intellectual property and appreciate authorship in its fullness. The Web is a fabulous resource that no student or scholar can ignore. Learning, however, requires more than high-speed connections and a good search engine (Carnie, 2001). Students can learn a lot from

computer terminals, but they require human teachers to help develop their sense of efficacy and find meaning to their pursuits (Bandura, 1997).

Proponents of instructional technology advocate the benefits of technology for students in the act of learning, and suggest development of a structure that defines faculty's role for a purposeful use of technology in education. For (Lehman, 2010) the educators' task is guiding students in using the technology to impart the knowledge given by the best sources.

In a study of academic practices, Rolfe (2011) concluded that new college students face a challenge in making a smooth transition between school and university, and there are often gaps between student expectations and university requirements with regard to academic practices. Rolfe's study recommended using the plagiarism detection service Turnitin to provide students with instant feedback on essays and help improve academic literacy.

The study had a cohort of 76 students submit draft essays to Turnitin with instruction on how to interpret the 'originality report' for feedback. The impact of this self-service approach was analyzed by comparing writing quality and incidence of plagiarism in draft and final essays, and comparing the results to a previous cohort of 80 students who had not used Turnitin formatively. Rolfe concluded that using plagiarism detection tools encouraged students to develop their writing.

It is evident that educators in the act of teaching face practical challenges involving academic dishonesty and need adequate resources to confront plagiarism. For Brown and Emmett (2001), students' easy access to electronic repositories of texts has raised the index of suspicion regarding plagiarism, and many writing teachers and administrators believe that college students are cribbing texts more than ever, despite empirical data that suggests otherwise.

In a question and answer guide on academic integrity, Gardiner (2009) wrote:

> when teachers suspect plagiarism today, there are tools to help them track down possible sources of the article. One simple and quick way is to type a suspect phrase into Google, Yahoo or any other search engine. The results come back quickly and can often determine whether the paper is indeed plagiarized. (p. 26)

The detection of plagiarism in the digital age almost requires educators to perform a "reverse lookup" on the content of an assignment to determine its provenance. Fortunately, technology has improved plagiarism detection by infusing efficiency and real-time feedback in the overall process. Lathrop and Foss (2000) suggested that possibly the best defense against high tech cheating among student is for teachers and parents to explore the hardware and software in computer stores and read instructional technology journals. Students may be less likely to cheat when they know their teachers and parents are informed.

Compared with countries in Europe, Asia or Africa, the education system in the United States is relatively decentralized. The federal government is not known to engage in direct regulation of academic standards for higher education. However, that may change. A recent U.S. Senate amendment to a House bill directs accrediting agencies to require institutions of higher education with distance education programs to have in place a process to verify that a student registered for distance education is the same student that participates in, completes, and receives credit for the course (Higher Education Opportunity Act, 2008). This legislation places cyber education under a microscope, and requires it to devise a system or methods that, at the very least, will validate the identity of a student as one level of honesty during an exam or other evaluation activities. The Higher Education Act alone may not eradicate academic dishonesty, but it could provide a visible deterrent for some forms of cheating.

In a study to develop an instructional design model to guide course designers (and instructors) in the creation of online courses and written assessments that deter plagiarism, Olt (2007) asked participants to reflect on the course structure, development, and design of online courses that they have taught and to identify remedies for plagiarism implemented in these courses. Qualitative data collected from 28 faculty at various regionally accredited U.S. institutions of higher education representing varying course levels and academic disciplines produced a tentative instructional design model to deter plagiarism. Participants were then asked to complete an online survey critiquing the new model. A final version of the instructional design model was developed from these data, a deterrence strategy that could prove practical, but not comprehensive.

While computer and technology tools in recent years are capable of detecting simple forms of plagiarism, such as copy-paste, a number of recent research studies revealed that these tools are limited in their ability to detect complex forms of plagiarism such as extensive paraphrasing and the use of technical tricks, such as replacing original characters with similar-looking characters from foreign alphabets (Mozgovoy, Kakkonen, & Cosma, 2010). Paterson (2007) concluded that plagiarism detection software teaches students that writing assignments are a cat-and-mouse game in which they are the teacher's adversary.

Many colleges and universities equip faculty and staff with tools to detect and combat plagiarism. The presence of such tools, however, does not mean academic integrity policies are always enforced. A main reason for the gap between universities' expectations and their actions is that: "the detection of plagiarism and the resulting administration of punitive measures against students accused of plagiarism is an incredibly time-consuming exercise for academics" (Volkov, Volkov, & Tedford, 2011, p. 23) . It becomes a matter of priority for the college or

university to determine how much time, personnel, and attention should be devoted to plagiarism prevention and detection initiatives.

Information Literacy and the Digital Citizenship

Information technology has fundamentally changed the nature of communication, and digital natives, who are entering higher education today, look at content differently. They understand it differently, manipulate it differently, and make different assumption about where it came from. Poore (2011) wrote: "We must turn to how we use these digital technologies, in class, to occupy students so that they themselves acquire both technical and critical digital literacy for worthy encounter in the emerging knowledge space" (p. 25).

Since undergraduate college students may not understand the concept of authorship in the same way that their educators do, Tripp (2011) described two important roles for libraries: (a) provide young people with dynamic contexts for learning with digital media, and (b) provide young people with opportunities to learn and practice new media literacy skills.

With so many students using online and digital tools, such as Facebook, YouTube, iTunes and smartphones, Poore (2011) investigated the implications for educators in raising students' levels of digital literacy. Poore's study used Pierre Lévy's (1999) work on collective intelligence as a theoretical framework to explore and to present the types of digital literacy that teachers and students will need to develop in order to make the most of new technologies as humanity emerges into a new knowledge space. In this light, the process of teaching students about academic dishonesty becomes a process of "enculturation" (Ashworth, Freewood, & Macdonald, 2003, p. 261). Uhlig and Howes (1967) found that students were less likely to take advantage of opportunities to cheat if they had negative attitudes toward academic dishonesty.

There is evidence that organizations such as Cybersmart (2011) have raised awareness for online safety-related matters and are working to "increase student engagement and prepare students to achieve in today's digital society" (p. 1). Other similar organizations are also working to provide "resources to help individuals make informed decisions about their and their family's use of the Internet" (Getnetwise, 2011). The limited effectiveness of such programs is revealed in the fact that they cover only a portion of topics raised with regard to appropriate technology use (Boyle, 2010).

An important reason for colleges to promote undergraduate research, besides teaching students the research process, is to show them how to negotiate the topography of emerging resources within a particular field. Negotiating information and resources is a useful and transferable skill that can enable students to earn a living after college. Undergraduate research is also an opportunity for students to learn and understand proper attribution of intellectual property and respect for intellectual property rights. A strong research agenda in college can help students understand the full culture of intellectual property and authorship and become more responsible for it themselves. Students also learn that authorship is not simply an outcome of racing off to the library to do an assignment, but a process of doing original research or an original creative project from the ground up.

A review of the literature reveals that a need for information literacy and information ethics exists in other parts of the world as well. Dadzie (2011) found that information ethics is not taught as a specific or whole subject at any level in the tertiary institutions in Ghana (West Africa) and questioned the depth of education given to students in light of some serious information ethics violations, such as plagiarism, copyright violation, cyber-crime, and social network abuses. The study recommended a university-required information ethics course for all

freshmen, a stand-alone course in information ethics at the Department of Information Studies, adequate sensitization programs on academic integrity and plagiarism policies, and the enforcement of Ghana laws and policies to safeguard individual rights to ownership, privacy, confidentiality and security. Dadzie's study created a relevance for Sterngold (2004), who found that digital plagiarism is on the increase, and predicted it would become even more widespread as the supply and accessibility of digital data continues to expand.

In a quasi-experimental study to add to the limited research pertaining to Digital Citizenship, (Boyle, 2010) adapted and implemented a Digital Citizenship curriculum at an urban school located in the Northeast of the United States based upon a guide created by Ribble and Bailey (2004). The researcher administered the Ribble (2004) licensed instrument as both pre- and post-test surveys. Although the study concluded that more research is needed, data analysis indicated a significant difference in students' normative behavior of technology use when exposed to the Digital Citizenship curriculum. The areas of gain were digital etiquette, digital communication, digital literacy, digital commerce, digital law, rights, and responsibilities, and digital health and wellness.

Studies involving the disclosure of behaviors that are deemed unethical and dishonest often retain the anonymity of research participants, making it difficult to collect an emic perspective. Wideman (2009) concluded that research pertaining to academic dishonesty is extensive, yet often contradictory, mostly because of the way most of these data were collected through quantitative methods.

In a rare phenomenological research, Bouman (2009) addressed plagiarism both as a concept and as an act with significant ideological, ethical, institutional, and pragmatic aspects. The study considered social, ethical, and textual implications of contemporary Western

conventions and expectations regarding source use and citation, and the nature and function of source-based writing in college. Based on an analysis of conversation from the study's interview and focus group sessions, the study presented a model of the research participants' construction and representation of plagiarism. The study revealed some students' understandings and experiences of plagiarism authorship align with the researcher's primary beliefs. Other students' understanding however, disconnect from the researcher's beliefs as well as well as teaching policy implications. Bouman concluded that college students' perspectives on plagiarism can and should inform disciplinary and institutional constructions and policies.

Maintaining a Culture of Academic Integrity

To create a culture of academic integrity, one must acknowledge those who have provided the theoretical platform on which researchers stand. Whereas scholarship was once a relatively limited profession, the advent of technology and the Internet has increased access to research and knowledge (Wideman, 2009). Ideally, the question of academic honesty in the digital age should be addressed at an early age in terms that the student can understand it, but not necessarily in a manner that the teacher is comfortable with. Paterson et al. (2003) drew attention to the need for formal teaching of academic integrity and how it relates to a broader ethical and professional issues as important university priorities.

Antell and Lacy (2011) emphasized that, "sharing these examples of ethical use of information with students will help them understand that plagiarism has real consequences (outside of school) and can impact their professional futures—making the ethical use of information a more relevant topic" (p. 207). Failure on educators' part to infuse academic integrity into the curriculum much sooner than college years, may simply delay unnecessarily some steps in the practical preparation for individual creativity and academic honesty. And,

"when opportunities for deviance present themselves, people who lack self-control are unable to resist the temptation" (Bolin, 2004, p. 102). Other related literature takes a more macro view of plagiarism and cheating in general, with Pope (2003) inferring that, "people don't go to school to learn. They go to get good grades, which brings them to college, which brings them the high-paying job, which brings them to happiness, so they think. But basically, grades are where it's at" (p. 4). Pope's statement suggests an opportunity for educators and policymakers to redefine the mission of higher education in a way that deemphasizes grades as the ultimate outcome, and promotes a competency-based education.

In juxtaposing faculty and student perspectives on plagiarism in online and face-to-face environments, studies continuously emphasize the need for students to develop honesty and integrity as part of their preparation to enter certain professions. Gaberson (1997) suggested that nursing students who plagiarize should be suspected of lacking accountability in the care they administer to patients. Costa (2011) argued that it is vital for students to promote ethical behavior in order to maintain academic integrity and the development of proper scientific conduct in Biochemistry and Molecular Biology courses. Costa further suggested that academic programs create ways to recognize excellence in academic conduct and penalize behaviors like plagiarism and cheating.

Walter (2008) used a sample of secondary teachers in a mixed method action research study to build a foundation for the exploration of instructional design practices in secondary schools, even before students enroll in college. The researcher used questionnaires and teacher interviews to measure and explore teachers' computer efficacy. Knowledge of cyber-plagiarism was measured using a cyber-plagiarism survey, and views about student cyber-plagiarism were measured using a modified version of Scanlon and Neumann's (2002) survey and interviews.

The results revealed a high level of computer self-efficacy in the sample population. However, no significant differences were noted in the pretest/posttest data of participants' general knowledge of cyber-plagiarism, their understanding of the degree to which their students engaged in cyber-plagiarism, or in how participants characterized their students' attitudes about cyber-plagiarism. Interview data indicated that participants were cognizant of student Internet plagiarism and recognized that instructional strategies designed to limit student Internet plagiarism were critical to the instructional process. They expressed an understanding of the crucial role that teachers play in incorporating instructional design.

Exposing a rather different faculty perspective of academic dishonesty, Paterson (2003) and Paterson (2007) found that faculty members blame a breakdown in moral reasoning or low ethical standards as reasons for student cheating. Rebecca Moore Howard, associate professor of writing and rhetoric at Syracuse University, concluded that detection applications are more about policing than teaching, because they tell students when they have failed to write well, but don't teach them how to write well (Paterson, 2007). In a culture of academic integrity, an alternative to plagiarism detection software would be a model for creating a culture of trust in the classroom, utilizing basic tenets of leadership to promote academic integrity with students (Hulsart & McCarthy, 2011).

Differing viewpoints on academic integrity in the digital age sometimes fuel debate about how the Internet makes it easier for students to engage in unethical academic behaviors. Perceptions of cyber-plagiarism cause both traditional and cyber education to continue to invest time, money, and resources in plagiarism detection tools while not necessarily creating a culture of academic integrity. This leads some members of the education community to doubt not only the quality, but the rigor of academic programs in the cyberspace.

Plagiarism can be placed on a spectrum from ignorance to exploiting technology to get ahead (Paterson et al., 2003), but it sometimes takes on a deceptive aspect that is worth noting. Malgwi and Rakovski (2009) adapted an established fraud triangle theory as a platform for identifying the determinants of academic fraud risk factors. The study evaluated the magnitude and the extent to which students were willing to confront realities of academic fraud and move towards a culture of academic integrity. Agreement among students and groups of students suggested two types of deterrent strategies: (a) student action, and (b) faculty/administration action. Results from 740 students surveyed found that the most widely supported strategies were: (a) stronger penalties, (b) parental notification, (c) an anonymous tip line, and (d) administering a uniform policy. The least supported strategies were academic honor code, no strategy at all, a required ethics course, and allowing individual instructors to determine penalties. The study concluded that full time, domestic, US undergraduate, and male students favor student action strategies, which are more reactionary and less punitive.

Most of the literature above focused on plagiarism among students in the digital age. However, there is some evidence that academic dishonesty is not limited to student populations. In 2004, the U.S. Department of Health and Human Services reported that allegations of misconduct by scientific researchers had reached unprecedented levels (Langlais, 2006).

Espousing a rather proactive approach to promoting a culture of academic integrity, Associate Professor of Business Debi Moon, and Associate Professor of English Rob Jenkins at Georgia Perimeter College suggested that an institution should use an honor code that matches its culture in making cheating socially unacceptable. An institution should require students to take tutorials and examinations to achieve academic integrity before they proceed for class registration ("Academic integrity advice and resources," 2011).

Efforts to maintain a culture of academic integrity frequently propose harsh consequences. “The sanction for plagiarism must be at least an F on the paper, accompanied by a letter in the student’s file to be consulted if it happens again, with the understanding that a second offense would mean expulsion” (Schroth, 2012).

Human Development and Self-Efficacy

According to Bandura (1997), “each period of human development brings with it new competency requirements and challenges for coping efficacy” (p. 177). The ability to adapt to socio-cultural changes like the proliferation of Information Technology for authentic authorship in education requires a certain cognitive development. This particular developmental requirement can be associated with the biological age or with the functional age of the individual. Jean Piaget (1977), the pioneer of the constructivist theory of knowing, believed the development of a person’s thinking and understanding are based on the combination of innate capacities and environmental influences that are exerted on the individual. Piaget described human cognitive as a mechanism to process information by assimilating new information into the established view of the world. Kincheloe (2005) explained, "how humans create their view of the world as nothing represents a neutral perspective. Indeed, no truly objective way of seeing exists. Nothing exists before consciousness shapes it into something we perceive” (p. 8). According to Piaget’s theory of cognitive development, when assimilation becomes impossible due to the lack of an established view of a certain concept, understanding occurs by adjusting one’s thinking to accommodate the new information. Piaget presented cognitive development as a structure of four stages that begin at birth and end around the adolescence years.

Whereas Fozard and Nuttall (1971) concluded that individuals with higher status occupations performed better on cognitive abilities than those with lower status occupations,

Avolio and Waldman (1990), reported that, in general, occupational types moderated the relationship between age and cognitive test performance across different racial groups.

In integrating these various views on the development of knowledge and understanding, cognitive learning theories are best understood as gradual and sequential processes during which individuals traverse chronological stages that are dependent upon nature and nurture. Lifespan researches have recognized the existence and the magnitude of age-related intellectual change and the description of patterns of cohort differences (Schaie, 1996).

Piaget's cognitive development theory, for instance, is divided into four stages:

Sensorimotor (Birth to About Age 2)

During this stage, the child learns about himself and his environment through motor and reflex actions. Thought derives from sensation and movement, and the child learns that he is separate from his environment and that aspects of his environment such as his parents or his favorite toy continue to exist even though they may be outside the reach of his senses.

Preoperational (begins about the time the child starts to talk to about age 7)

In this stage, the child applies his new knowledge of language, and begins to use symbols to represent objects. Early in this stage he also personifies objects. He is now better able to think about things and events that are not immediately present. The child, however, has difficulty conceptualizing time as his thinking is influenced by fantasy and idealism.

Concrete (About First Grade to Early Adolescence)

During this stage, accommodation increases allowing the child to develop an ability to think abstractly and to make rational judgments about concrete or observable phenomena, which in the past he needed to manipulate physically to understand.

Formal Operations (Adolescence)

According to Piaget, this stage brings cognition to its final form. A person in this stage no longer requires concrete objects to make rational judgments. Instead, the person is capable of hypothetical and deductive reasoning.

Other psychologists such as K. Warner Schaie (1996) believe cognitive development continues to occur after the adolescent years, creating the notion of a lifespan learning. Schaie presented human cognitive development as a five stage structure:

Acquisitive

In this stage children and adolescents acquire information or a skill mainly for its own sake or as preparatory for participation in society. In the context of authentic authorship, the acquisitive stage is simply when individuals begin to be exposed to the digital environment of modern day content and technologies. The acquisitive stage of computer competency could therefore be interpreted as being independent of biological or functional age.

Achieving

In this stage, young adults no longer acquire knowledge merely for its own sake; they use what they know to become competent and independent. In the context of computer competency to consume and produce content, it is true that certain individuals, depending on their level of exposure to technology, can reach a state of independence during the achieving stage. This stage ranges from the late teens to early thirties. For most college students, this stage may equate to a functional infancy because of the "recency" of their exposure to academic authorship. However, computer technology competency of college student could very well be at a much higher stage than that of their faculty.

Responsible

The third stage of Schaie's model includes middle aged people (late 30's to early 60's) who are concerned with long-range goals and practical problems associated with their responsibilities to others. While faculty are likely to be at this stage in terms of traditional teaching and authorship, their computer technology competency might be in the first or second stage of Schaie's structure.

Executive

This stage occurs in the thirties or forties through middle age. People in the executive stage, which may overlap with the achieving and responsible stages, deal with complex relationships on many levels as these people are responsible for societal systems such as governmental or business organization. Traditional college undergraduate students would not normally experience this stage. However, this is the stage that encompasses most educators.

In a social environment such as higher education, it is difficult to imagine educators firmly enmeshed in the executive stage easily finding the time and the motivation to go back and improve in areas where they may be considered an infant by objective means.

Reintegrative

The final stage of Schaie's model occurs in late adulthood. This stage, would not apply to traditional undergraduate students. Older adults who may have let go of some social involvement and whose cognitive functioning may be limited by biological changes belong in this stage. Such adults are often more selective about choosing tasks on which to expend effort. They focus on the purpose of what they do and concentrate on tasks that have meaning for them.

Traditional undergraduate college students would be placed in the fourth stage of Piaget's cognitive theory and the second stage of Schaie's cognitive structure. (Bandura, 1997) wrote:

"the way in which adolescents develop and exercise their personal efficacy during this period can play a key role in setting the course their life paths take" (p. 177).

This cohort is also similar to what Erik Erikson (1963) described in his psychosocial development theory as adolescence (period between 12 and 18 years of age). According to Erikson, adolescence is the stage during which individual develop identity vs. role confusion. In the context of the digital age, where plagiarism is asserted to be on the rise, educators should wonder whether college students who engage in academic dishonesty have completed formulating their identity. Students may simply be confused about their role as consumers of information vs. producers of information in the digital age.

Adolescence, in this case, can be considered as a transition to adulthood. Behaviors and actions during the transition can be permanent or temporary. For example, most adolescents who experiment with hazardous behaviors quit them after a while, but some become deeply and chronically involved (Bandura, 1997, p. 182).

Cyber-Plagiarism as a Source of Conflict

Although plagiarism and cyber-plagiarism differ in the manner in which they occur, both practices are considered equally unethical and dishonest by most academics. Dee and Jacob (2012) wrote, "Plagiarism harms human-capital acquisition by attenuating a student's capacity for critical reasoning and original expression, skills that are often characterized as the signature achievements of selective postsecondary schooling" (p. 398). Dee and Jacob's characterization of plagiarism as harmful to humans creates a motivation for this study to observe cyber-plagiarism from a conflict resolution perspective.

Mayer (2000) described the framework for understanding conflict as an organizing lens that brings a conflict into better focus, and suggested that there are many lenses through which

we can examine conflict, and each of us will find some lenses more amenable than others. Mayer concluded that, "we need a framework that expands our thinking, challenges our assumptions, and that are practical and readily usable" (p. 4). Consequently, it becomes important to analyze cyber-plagiarism through a new set of lenses. Is cyber-plagiarism simply a conflict between different groups' views of internet information use?

Much of the review of the literature related to academic integrity focused on cyber-plagiarism as academic offenses ranging from laziness to exploiting technological means to get ahead (Paterson et al., 2003). By employing frameworks that expand our thinking, as suggested by (Mayer, 2000), other considerations emerge to challenge these assumptions. It is appropriate to group potential causes of cyber-plagiarism into two categories: values and interests. These categories comprise a segment of the categories described in Furlong's (2005) circle of conflict, a model that diagnoses and categorizes underlying causes of drivers for a given conflict. Other categories of the circle of conflict: data, structure, relationship, and mood are also worth noting.

Cyber-plagiarism: A Severe Conflict of Values

On January 5, 2012, the debate over content sharing, intellectual property, copyright, and plagiarism took a new philosophical turn when the Church of Kopimism was formally recognized by the Swedish government. Through Kopimism, the notion of file sharing became the world's newest religion. A "Kopimist" or "Kopimist intellectual" is a person who espouses the philosophical belief that all information should be freely distributed and unrestricted. This philosophy opposes copyrights in all forms and encourages piracy of media, including music, movies, TV shows, and software. The term kopimist originates from the root word, kopimi, meaning 'copy me'.

According to Isak Gerson, Kopimism's spiritual leader:

> Copying information is holy. Information is the building block of everything around me and everything I believe in. Copying it is a way of multiplying the value of information. I think that the copyright laws are very problematic, and at least need to be rewritten. I would suggest getting rid of most of them. (George, 2012)

The establishment of a religion with unrestricted information sharing as a basic tenet has significant implications for producers and consumers of content and information in both print and digital formats. Unrestricted content sharing that disregards copyright law brings a new meaning to concepts of originality and creativity. In higher education, this could mean that students who engage in plagiarism are not committing an academic offense, but are rightfully practicing their religion.

Plagiarism as a way of practicing one's freedom of religion might appear theoretical at the moment, but sanctions applied to future offenses are likely to be challenged. Kopimism is also likely to have an impact on student code of conduct, especially in most western countries where freedom of religion is often a constitutional right. The debate over plagiarism could become a deep conflict of values similar to the conflict of values between prolife and prochoice segments of a population.

The following examples demonstrate how plagiarism has polarized communities of teachers and learners based on their values. Table 1 lists major generational differences that contribute to an individual's values over how content should be treated.

Table 1

Contrast of Core Concepts Between Modern Orientations and Postmodern Orientations

Traditional/Modern	Post Modern/Emergent
1. Objective merit	Merit as subjective and relational
2. Universal application of grading standards	Situational application of grading standards
3. Adherence to exegetically derived standards and rules	Opportunism, expedience and Self as authority
4. Detached /professional application of standards	Engaged, involved application of standards
5. Individual accomplishments highest regard	Communal/collaborative effort highest regard
6. Private property/ownership requiring attribution of credit	Anything published, especially over the Internet as community property not requiring attribution of credit
7. Deliberative, revised peer reviewed output highest value	Quickness of mind; ability to use information quickly and effectively higher value
8. Integrity as product of adherence to absolute abstract, and immutable rules	Integrity as product of relationship, compassion, responsiveness -gained from the respect of others
9. Failure/mistakes seen as learning opportunity	Failure/mistakes not acceptable
10. Formal spoken and written English as norm	Reading and writing as expression creativity and individual imagination

Note. This table was obtained from (Gross, 2011, p. 436).

In a study of student ethics and behavior, McCabe (2001) found that more than half of the students in his survey did not consider the following actions cheating: (a) collaborating on assignments when instructed not to; (b) Copying sentences without citing references; (c) having parents complete homework; (d) obtaining questions from someone who has previously taken an exam. Students' and their parents' perception and interpretation of unrestricted content sharing in (McCabe et al., 2001) obviously differ from the viewpoints of some academics. In fact,

according to a senior lecturer from the School of Culture and Communication at an Australian University, plagiarism is equal to kidnapping or body snatching (Hubler, 2012).

Divergent explanations and viewpoints make it easy for supporters and detractors of academic integrity to strongly accept their own philosophical view of plagiarism as the only right way to academic success. This judgment of values consequently strengthens both ideological positions in a way that creates opposing views which cannot be reconciled.

Plagiarism: A Simple Conflict over Interests

Plagiarism and its newest mutation, known as cyber-plagiarism, can be defined as a conflict between people's interests in content, information and education. The ubiquitous access to information in the digital age has raised the index of suspicion regarding plagiarism (Brown & Emmett, 2001). A review of the literature on plagiarism identifies experts such as Allen et al. (Allen et al., 1998; Harris, 2011; McCabe & Trevino, 1996), Harris (2011), and McCabe & Trevino (1996), who maintained that plagiarism among college students is on the rise in the digital age. These experts are insinuating that the traditional practice of plagiarism as a serious academic infraction has acquired a digital dimension to become cyber-plagiarism.

Schab (1991) found that a common reason for cheating was a student's fear of failure., and noted an increase in students' perceptions of dishonesty as a necessary means to success, especially related getting ahead in the business world. Schab offers an important indication of students' real interest in plagiarism. To create a culture of academic integrity, however, academics must acknowledge those who have provided the theoretical platform on which researchers stand. Whereas scholarship was once a relatively limited profession, the advent of technology and the Internet has greatly increased access to research and knowledge (Wideman, 2009).

The fear of failure is a significant interest not necessarily in sync with academics' interest in acknowledging existing theoretical framework. Although post- millennial generations are believed to enter into connections that are disclosing, spontaneous, multi-dimensional, and reciprocal, their expectations are different from their professors' in that post-millennials have very little interest in, or genuine commitment to, academic objectivity and the presumption that evaluative criteria or outcomes can be value free (Gross, 2011). Students and educators appear to have different interests in the use of content (Alexandra, 2006). Inconsistent views of plagiarism also exist within the academic community. In fact, "the most appalling aspect of the rise of cheating on campus in recent times is that some professors themselves have offered sophisticated defenses of plagiarism" (Chace, 2012, p. 28).

Baroness Ruth Deech, head of the British student complaints watchdog, the Office of the Independent Adjudicator for Higher Education, suggested that if lecturers can imbue students with the view that they are searching rather than copying then we might go some way towards tackling plagiarism.

Psychologically, and from a conflict resolution standpoint, the approach suggested by Baroness Deech requires educators to engage in constructive reflection on plagiarism in a manner that allows for increased situational awareness and a refined situational understanding.

> This intense reflection is described as the process by which professionals think about the experiences, events and situations of practice and attempt to make sense of them in light of the professionals' understanding of relevant theory. Most importantly, reflection occurs both during the performance of professional practice (reflection in action) and after the experience (reflection on action). It nurtures explorations and discoveries that lead to an increased repertoire of skills,

> it enhances the person's ability to modify forms of intervention and it may alter his way of thinking about the problem presented. (Lang & Taylor, 200, p. 19)

Although not mentioned much in the existing literature, legal cases involving occurrences of academic dishonesty are emerging and likely to become precedents. One example involved Abhishek Mawle, who filed a legal complaint against Texas A&M University-Kingsville College of Business Administration for an alleged academic discrimination. Abhishek Mawle was expelled from the university in May 2008 for an alleged plagiarism and engaged in a lengthy appeal process. The U.S. District Court, Southern District of Texas dismissed the plaintiff's claims, ruling that Courts may not override the academic decision of college officials ("Court upholds student's dismissal for alleged plagiarism," 2011).

Chapter Summary

The above review of the literature indicates a breath of studies to corroborate the notion that plagiarism has been present in higher education for generations, but fails to examine students' knowledge and understanding of authorship. Using, as a frame of reference, information society in the digital age, where lines have blurred between intellectual content and the provenance of that content (Baumann, 2010), one might infer that the old practice of plagiarism has simply undergone a metamorphosis. In that case, academic dishonesty can be viewed as a relatively aged trend that has acquired a digital dimension to emerge as cyber-plagiarism. Plagiarism may be, an old practice not limited to American society, but it was only in 1941 that academic dishonesty was recognized in the professional literature as a serious problem (Thorne-Figueroa, 2010).

Cyber-plagiarism might also be a manifestation of digital natives' cognitive structure and their integration into a knowledge community where socio-cultural interaction tends to tolerate a

lack of respect for rules in general, and particularly rules regarding other people's property. In other words, academic dishonesty could be a reflection of levels of integrity and ethical thinking in the population at large as reflected in tax avoidance schemes, health care scams, insurance fraud, and people in the conduct of their personal life (Callahan, 2004). The mass media reports cases of corruption and fraud almost every day, in high finance, law enforcement, market trading, research, the practice of medicine, and all forms of political participation (Eckstein, 2003). It is reasonable to conclude that students who grow up witnessing their parents evading taxes or driving over the speed limit with illicit radar detectors, might generalize such actions and believe it is perfectly appropriate to cheat in other areas, or to cyber-plagiarize as a student in the digital age.

At the rate colleges and universities are investing in cyber-plagiarism detection software, one should wonder whether a computer program is sufficient to replace or supplement faculty's role in the design of a creatively sound undergraduate curriculum. Abilock (2009) suggested that avoiding assignments that lack critical thinking and inquiry learning is one of the most important ways to address academic dishonesty. Abilock's conclusion infers that educators need to promote the intellectual creativity and rigor of every student in a constructivist manner. By doing this, instructors can begin to reframe plagiarism prevention as character education focused on how students' perception of authorship in the digital affects their willingness to engage in cyber-plagiarism.

CHAPTER THREE

METHODOLOGY

The purpose of this quantitative study was to investigate the topic of cyber-plagiarism undergraduate students of the Pennsylvania State System of Higher Education (PASSHE). The study explored in depth the extent to which college students copy and paste unattributed sources into their written assignments because they lack academic confidence. This chapter describes the research method employed to investigate cyber-plagiarism practices among undergraduate PASSHE students.

Pyle (2010) reported that more than 60% of undergraduate college students nationwide admitted to cheating on assignments and exams, and 40% of all U.S. college students admitted they had woven unattributed material from the Internet into their work. Pyle's study quantified academic dishonesty in the United States, and corroborated the assertion that plagiarism is a persistent problem that is on the rise on campuses in the digital age (Arhin, 2009).

In a study on whether Information Technology is encouraging plagiarism among college students, Szabo and Underwood (2004) confirmed that third year students were less likely to cheat than first or second year students, and more male students cheat than female students. In a study of faculty and student perception of plagiarism, Pritchett (2010) documented a significant difference between male and female undergraduates perception of plagiarism.

To collect data for this quantitative study, the researcher employed an online survey. Undergraduate students from selected universities of the Pennsylvania State System of Higher Education (PASSHE) were invited to participate by completing the survey.

Statement of the Problem

The complexity of the issue of academic dishonesty is evident by the diversity of reasons why students cheat (Wideman, 2009). Over the last two decades, researchers have attributed plagiarism to fear of failure (Schab, 1991), lack of skill and knowledge (Batane, 2010), a range from laziness or negligence to properly cite sources to simply exploiting technological means to get ahead academically (Paterson et al., 2003), a breakdown in moral reasoning or low ethical standards (Paterson, 2007), and a socially acceptable behavior (Vojak, 2006), but the literature establishing the relationship between cheating and student self-efficacy remains limited.

Frone (2004) focused specifically on the relationship between cheating and measures of student self-efficacy and identification with their school, but data collected came from a self-selected population and may not be applicable to other populations. A gap in the existing literature created an opportunity for this study to examine the correlation between cheating and measures of student self-efficacy, as well as gender and academic level, at the postsecondary level.

The researcher surveyed undergraduate students at the universities of the Pennsylvania State System of Higher (PASSHE) on their academic self-efficacy, their perception of authorship in the digital age, the social acceptability of cyber-plagiarism, their perception of the prevalence of cyber-plagiarism among their peers, and the actual degree to which cyber-plagiarism practices are prevalent across academic levels.

Research Questions

The following research questions were employed:

1. What is the significance of the relationship between self-efficacy and cyber-plagiarism among undergraduate students?

2. What is undergraduate college students' perception of author's ownership in the digital age?
3. What is undergraduate students' perception of the social acceptability of academic dishonesty in the digital age?
4. What is undergraduate college students' perception of the prevalence of cyber-plagiarism among their peers?
5. To what degree is cyber-plagiarism a prevalent practice among undergraduate college students?

Research Hypotheses

To fully address the research questions presented above, the following hypotheses were created:

Research question 1: What is the relationship between self-efficacy and cyber-plagiarism among undergraduate students?

H_1: There is a significant relationship between self-efficacy and cyber-plagiarism among undergraduate students.

H_o There is no significant relationship between self-efficacy and cyber-plagiarism among undergraduate students.

Research Design

The design of this research was quantitative in nature and used an electronic survey to examine the extent to which college students copy and paste unattributed materials into their written assignment in the digital age. Surveys have been described as efficient and adaptable (Creswell, 2009), and Gall, Borg, and Gall (1996) found that online surveys are effective tools for collecting data.

This study was conducted as an online self-administered survey at the universities in the Pennsylvania System of Higher Education (PASSHE) in the northeast of the United States. The researcher employed non-experimental research design to answer the research questions posed above.

The researcher received permission from the Chancellor of PASSHE to obtain student email addresses in order to survey students in the system of universities. The researcher then sought permission from each of the 14 universities to obtain student email addresses in order to include their students in the study. Four universities granted permission. Three of the four universities also provided access to student email addresses to facilitate the distribution of the survey. The university that did not provide access to their student email list served as a pilot site.

Email invitation was sent to all undergraduate students at the universities where permission was granted. Follow-up email was sent to students who did not complete the survey after the initial email. Slavin (2007) reported that email surveys are cost effective, and survey respondents are not influenced by the researcher.

Since the researcher was affiliated with one of the institutions of the Pennsylvania State System of Higher Education, anonymity of respondents was maintained at all time. The researcher informed participants that responses would be anonymous and no respondents could be intentionally identified from the responses provided, or through other means. The researcher also promised to share the study results with those who completed the survey.

Study Site

The survey was sent to all undergraduate students of the universities in the Pennsylvania State System of Higher Education (PASSHE) where permission was granted to survey

undergraduate students. The institutions represented in the survey were a mix of large and medium universities.

The Pennsylvania State System of Higher Education (PASSHE) is the largest provider of higher education in the Commonwealth of Pennsylvania, comprising 14 institutions located throughout the state. PASSHE is the tenth largest university system in the United States and 43rd largest in the world. Fall 2011 statistics reported the total enrollment of PASSHE at 118,224 students. Table 2 summarizes student enrollment at each university in the state system.

Table 2

Pennsylvania State System of Higher Education Headcount Enrollment by University

University	Under-grad	Grad	Under-grad	Full-time	Part-time	Full-time	Total
Bloomsburg	9,256	903	91.1%	9,142	1,017	90.0%	10,159
California	7,417	2,066	78.2%	7,655	1,828	80.7%	9,483
Cheyney	1,141	59	95.1%	1,126	74	93.8%	1,200
Clarion	5,876	1,115	84.1%	5,326	1,665	76.2%	6,991
East Stroudsburg	6,656	697	90.5%	6,397	956	87.0%	7,353
Edinboro	6,649	1,613	80.5%	6,510	1,752	78.8%	8,262
Indiana	12,943	2,189	85.5%	13,098	2,034	86.6%	15,132
Kutztown	9,486	797	92.2%	9,117	1,166	88.7%	10,283
Lock Haven	5,029	337	93.7%	4,852	514	90.4%	5,366
Mansfield	2,876	399	87.8%	2,747	528	83.9%	3,275
Millersville	7,644	1,081	87.6%	7,104	1,621	81.4%	8,725
Shippensburg	7,132	1,051	87.2%	7,101	1,082	86.8%	8,183
Slippery Rock	7,961	751	91.4%	7,839	873	90.0%	8,712
West Chester	12,834	2,266	85.0%	12,445	2,655	82.4%	15,100
System Total	102,900	15,324	87.0%	100,459	17,765	85.0%	118,224

Note. Table obtained from PASSHE data warehouse of student data submission on the 15th day of classes in the fall of 2011.

Collectively, PASSHE universities provide many unique offerings including more than 37 Associate, 276 Bachelors, 161 Masters, and ten Doctorate degree programs. The universities offer more than 100 of these programs via distance education technologies, including synchronous and asynchronous methods. Additionally, PASSHE Universities make it easy for students to transfer seamlessly from community colleges and other institutions, and more than one-quarter of all new students transfer from another institution. The 14 universities in the

Pennsylvania State System of Higher Education (PASSHE) offer the lowest-cost four-year baccalaureate degree programs in the state (PASSHE, 2012).

Sample Population

Study participants were undergraduate college students from three of the 14 universities of the Pennsylvania State System of Higher Education (PASSHE) where permission was granted to survey the students. The universities in the current study were selected regardless of the method employed to deliver instruction to the students who participated in the study.

Not all of the PASSHE Universities offer associate, master and or doctoral degrees; however, baccalaureate-seeking college students are a consistent group across all 14 institutions. Baccalaureate-seeking students, therefore, represent a convenient and consistent group involved in academic pursuit beyond the secondary level. This group is also the most closely affiliated with the topic of this study, having direct knowledge and possible involvement in cyber-plagiarism at the undergraduate level. For these reasons, the study focused on baccalaureate-degree seeking students. The researcher classified all master's and doctoral degree-seeking students as graduates, and did not include them. The researcher also excluded associate-degree seeking students..

The total number of students invited to participate in the survey was 15,340.

Table 3

Pennsylvania State System of Higher Education - Fall Enrollment by Academic Level

Individual University	Total Student Population	Baccalaureate Seekers	Freshman	Sophomore	Junior	Senior
PASSHE	118,224	100,617	32,154	23,197	21,532	23,734
Bloomsburg	10,159***	9,065	2,966	2,268	1,979	1,852
California	9,483**	7,341	1,979	1,565	1,603	2,194
Cheyney	1,200*	1,102	489	231	162	220
Clarion	6,991**	5,714	1,980	1,391	1,129	1,214
East Stroudsburg	7,353**	6,602	2,518	1,211	1,322	1,551
Edinboro	8,262**	6,553	2,582	1,468	1,172	1,331
Indiana	15,132***	12,660	4,221	3,062	2,690	2,687
Kutztown	10,283***	9,132	3,057	2,031	1,923	2,121
Lock Haven	5,366*	4,917	1,732	1,182	960	1,043
Mansfield	3,275*	2,819	882	634	639	664
Millersville	8,725**	7,536	2,021	1,761	1,714	2,040
Shippensburg	8,183**	7,066	2,522	1,609	1,472	1,463
Slippery Rock	8,712**	7,842	2,144	1,831	1,785	2,082
West Chester	15,100***	12,268	3,061	2,953	2,982	3,272

Note. Table obtained from PASSHE data warehouse for student data submission on the 15th day of classes in fall 2011.
* indicates universities in the category of small institutions
** indicates universities in the category of mid-sized institutions
*** indicates universities in the category of large institutions

An email was sent to baccalaureate-seeking students at three of 14 PASSHE institutions. A copy of this email is provided as an Appendix to Chapter Three. The email communication explained the nature and purpose of the study, and assured that confidentiality of participants would be maintained and respected. The email also contained a link to an online survey. The survey instrument was hosted on the Qulatrics site (http://qualitrics.com). The survey was opened for responses on November 4, 2013, and closed on November 9, 2013. On November 6,

2013, a reminder email was sent to students who had not yet completed the survey. The survey data collection ended on November 9, 2013.

Instrumentation

A review of the literature revealed instruments that were partially appropriate for the purposes of this research. The researcher subsequently sought and received permission to modify two existing survey instruments. Copies of the permission emails are attached as an Appendix to Chapter Three. The researcher used 17 questions from (Scanlon & Neumann, 2002) and three questions from the academic self-efficacy scale (Hoover-Dempsey & Sandler, 2005).

The portion of the instrument that examined academic self-efficacy was originally designed for and used in a study on the social context of parental involvement to enhance student achievement (Hoover-Dempsey & Sandler, 2005). The researcher modified three questions from the original instrument and added one question: "When I write a paper, I am concern about my ability to meet the professor's expectations."

The segment of the instrument used to analyze cyber-plagiarism among college students was originally deployed in a study on Internet Plagiarism Among College Students (Scanlon & Neumann, 2002). The original instrument was designed for a dual investigation and contained 60 items. Twenty-eight of these items concerned plagiarism and the Internet, while 32 related to student attitudes toward computer and online communication. These 32 questions were excluded from the modified instrument.

For the current study, the researcher used 17 questions concerned with plagiarism and the Internet along with four demographic questions designed to investigate a student's perceptions of authorship and plagiarism in the digital age as illustrated in Appendix E. The combined Likert-type scale survey instrument from (Scanlon & Neumann, 2002) and (Hoover-Dempsey &

Sandler, 2005) used here to collect data from undergraduate college students was appropriate and relevant, as the instruments were tested and administered in their initial studies.

The Hoover-Dempsey (Hoover-Dempsey & Sandler, 2005) study found that parental reports of mechanisms engaged during involvement with their children (encouragement, modeling, reinforcement and instruction) were positively related to selected student proximal academic outcomes, most notably academic self-efficacy and student self-regulatory strategy use. The study also pointed out that parental report of reinforcement was related to all student proximal outcomes (self-regulatory strategy use, $r = .20$, $p < .01$; academic self-efficacy, $r = .18$, $p < .01$; intrinsic motivation, $r = .12$, $p < .05$; and social self-efficacy for relating to teachers, $r = .11$, $p < .05$). Parental report of modeling was related to three of the four proximal student outcomes: self-regulatory strategy use, $r = .15$, $p < .01$; intrinsic motivation, $r = .12$, $p < .05$, and academic self-efficacy, $r = .12$, $p < .05$.

The Scanlon & Neumann (Scanlon & Neumann, 2002) study was originally designed as a machine-scored pencil-and paper survey piloted with a small number of students at Rochester Institute of Technology. The survey was consequently revised and distributed to participating faculty at nine colleges and universities. A total of 698 undergraduates (85.9% between the ages of 17 and 23; 87.5% in the first through fourth year) from nine colleges and universities completed a survey on Internet plagiarism. The study found that a substantial minority of students reported using the Internet to copy and paste text into their papers without citation. Varying versions of the survey have been utilized in other studies to investigate topics related to cyber plagiarism (Walter, 2008).

The selection of a population of undergraduate college students across a system of universities is appropriate in a study to examine potential relationships between academic self-

efficacy and cyber-plagiarism across genders and academic levels. As Walter (2008) pointed out "the campus culture influences academic dishonesty" (p. 23).

Pilot Procedure

Since the survey was created by combining sections of existing instruments, piloting was necessary in order to establish reliability and validity. A convenient group of 85 undergraduate students was invited from a fourth PASSHE University where the researcher received permission to conduct the research. This convenient group was chosen because they were enrolled in courses where faculty was willing to include the pilot in course work. The students involved were asked to assess readability and quality of the survey.

The pilot group included male and female students with various academic levels and majors. Pilot participants provided evidence of content validity and offered suggestions to improve the survey. The 85 students were given a link to the online survey and research questions this study endeavors to answer, and asked to complete an anonymous printed form that served as feedback mechanism. Feedback included comments regarding the length of time it took to complete the survey, survey format, and clarity.

All 85 members of the pilot group thought the survey questions were clear, and 82 participants agreed that the survey questions adequately addressed study research questions. Eighty participants reported some repetition in the survey questions. Questions perceived as repetitive targeted different methods of content delivery. For instance, "How often do you think students copy text and insert it in a paper as their own writing, without citation (for example, footnotes)?" was seen as repeating, "How often do you think students use the Internet to copy text and insert it in a paper as their own writing, without citation (for example, footnotes)?" even though the two questions have a different intent.

The majority of the pilot group suggested that it is almost impossible to copy from sources other than the internet. Eighty-two participants suggested eliminating questions that did not focus on copying from the internet. Seven survey questions that pertain to copying from sources other than the internet were subsequently removed in order to avoid the unnecessary repetition reported by a large majority of the pilot group.

The pilot group was invited to take the survey again after revision, following the same protocol as before. Feedback was very positive, and all pilot participants felt that the survey questions were clear, valid, and adequately addressed the study's research questions.

Analysis of Data

The researcher employed Statistical Package for Social Science (SPSS, Base 21.0, 2012) to analyze the data, primarily to examine (a) the academic self-efficacy of undergraduate students, (b) students' perception of authorship in the digital age, (c) students' perception of the social acceptability of cyber-plagiarism, (d) students' perception of the prevalence of cyber-plagiarism, and (e) the prevalence of cyber-plagiarism among college students. These factors were examined across genders and academic levels. Various data analyses were used to examine survey information, including:

1. Cronbach's alpha to process the "correlational measure of reliability or consistency" (Vogt, 2007) of the data;
2. Pearson Correlation between the measure of academic self-efficacy and the measure of cyber-plagiarism;
3. Descriptive statistical analyses of all variables and instrument items, and all study variables for the purpose of organizing, and clarifying the data;

4. Case summary report to determine gender differences between all variables and instrument items.

CHAPTER FOUR

ANALYSIS OF THE DATA

The purpose of this study was to analyze the relationship between academic self-efficacy and cyber-plagiarism among undergraduate college students. More precisely, the study examined the degree to which a lack of academic confidence is a factor in copying and pasting unattributed sources on written assignments. This chapter focuses primarily on analysis of quantitative data obtained from a survey completed by undergraduate university students in the Pennsylvania State System of Higher Education (PASSHE) related to the research questions posed in Chapter One:

1. What is the significance of the relationship between self-efficacy and cyber-plagiarism among undergraduate students?
2. What is undergraduate college students' perception of author's ownership in the digital age?
3. What is undergraduate students' perception of the social acceptability of academic dishonesty in the digital age?
4. What is undergraduate college students' perception of the prevalence of cyber-plagiarism among their peers?
5. To what degree is cyber-plagiarism a prevalent practice among undergraduate college students?

Quantitative Findings

Demographics of the Survey Respondents

Since no single survey instrument was available to address the research questions of this study, the researcher received permission to modify two existing survey instruments from the literature. The modified surveys were combined into a new instrument to collect data for the current study. The survey was then piloted for readability and validity with a panel of current undergraduate college students from one of the universities within the PASSHE. The university where the pilot study was conducted did not participate in the data collection phase of this study.

The survey used in this study was designed using a Likert scale and contained six sections. Section I asked respondents to identify demographic information, such as age group, gender, and academic level (freshman, sophomore, junior or senior). Section II was designed to measure a student's academic confidence. Section III gathered opinions about undergraduate students' perception of author's ownership in the digital age. Section IV had respondents give their sense of how much cyber-plagiarism is socially acceptable at their university. Section V sought a subjective measure of the prevalence of cyber-plagiarism among peers. Section VI measured the frequency of a respondent's engagement in cyber-plagiarism.

Responses were analyzed using Statistical Package for Social Science (SPSS, Base 21.0, 2012). Cronbach Alpha correlation coefficients were computed to test the reliability and the internal consistency of the responses. A reliability coefficient is ordinarily considered acceptable at .70 or greater (Vogt, 2007). Overall, the items within each measure of this study instrument produced a reliability coefficient ranging from .75 to .88, with the exception of

question 8, which asked students to indicate their level of concern to meet their professor's expectations when they write a paper.

Section II, "Academic self-efficacy among undergraduate students," produced a Cronbach Alpha of .829, indicating a high level of internal consistency among questions 4, 5, 6, 7. Question 8 had Cronbach Alpha of .550. This clearly indicated that the question was measuring concerns other than academic abilities. Consequently, question 8 was excluded from further data analysis.

Section III, "Undergraduate college students' perception of author's ownership in the digital age," produced a Cronbach Alpha of .880, indicating questions 9, 10, and 11 were reliable with a good level of internal consistency.

Section IV, "Undergraduate students' perception of the social acceptability of academic dishonesty in the digital age," produced a Cronbach Alpha of .897, indicating questions 12, 13, 14, 15, 15, and 16 were reliable with a good level of internal consistency.

Section V, "Undergraduate college students' perception of the prevalence of cyber-plagiarism among their peers," produced a Cronbach Alpha of .786, indicating questions 17, 18, 19, and 20 were reliable with a good level of internal consistency.

Section VI, "The degree of prevalence of the practice among undergraduate college students," produced a Cronbach Alpha of .752, indicating questions 21, 22, 23, 24, and 25 were reliable with a acceptable level of internal consistency.

Email invitations were sent to 15,340 undergraduate students at the universities where permission was granted to conduct the study. Of this total, 329 students completed the survey. A follow-up email was sent to nonresponsive students, and an additional 108 students

completed the survey. Of 15,340 invitation emails, 437 students (2.85%) completed the online survey and were entered into the SPSS database.

More surveys were received from seniors than other academic levels (see Table 4).

Table 4

Overall Survey Response Rate by Academic Level

Academic level	N	% of Responses
Freshman	99	22.7%
Sophomore	79	18.1%
Junior	103	23.6%
Senior	156	35.7%
Total	437	100.0%

Though there was no selection bias toward either gender, most respondents (72.8%) were female (see Table 5).

Table 5

Overall Survey Response Rate by Gender

Gender	N	% of Responses
Female	318	72.8%
Male	119	27.2%
Total	437	100.0%

Respondents represented a wide range of age groups, and more surveys were received from the 18- to 20-year old age range than any other group (see Table 6).

Table 6

Overall Survey Response Rate by Age Group and by Gender

Age Group	Gender	N	% Responses
Between 18 and 20	Female	168	38.4%
	Male	47	10.8%
	Total	215	49.2%
Between 21 and 23	Female	112	25.6%
	Male	47	10.8%
	Total	159	36.4%
24 or older	Female	38	8.7%
	Male	25	5.7%
	Total	63	14.4%
Total	Female	318	72.8%
	Male	119	27.2%
	Total	437	100.0%

Female senior students had the highest response rate, while male freshman had the lowest response rate (see Table 7).

Table 7

Overall Survey Response Rate by Academic Level and by Gender

Academic level	Gender	N	% of Responses
Freshman	Female	78	17.8%
	Male	21	4.8%
	Total	99	22.7%
Sophomore	Female	56	12.8%
	Male	23	5.3%
	Total	79	18.1%
Junior	Female	73	16.7%
	Male	30	6.9%
	Total	103	23.6%
Senior	Female	111	25.4%
	Male	45	10.3%
	Total	156	35.7%
Total	Female	318	72.8%
	Male	119	27.2%
	Total	437	100.0%

Plagiarism among College Students in the Digital Age

To answer the first research question, "What is the significance of the relationship between self-efficacy and cyber-plagiarism among undergraduate students?" a Pearson

Correlation coefficient was computed between the respondents' measure of academic self-efficacy and their measure of cyber-plagiarism (see Table 8). The Pearson Correlation between the two measures was -.090. The Sig. 2-tailed of the correlation was .06, which indicated there was no statistically significant correlation between respondents' academic self-efficacy and respondents' participation in cyber-plagiarism. H_o was not rejected.

Table 8

Correlation Between Academic Self-efficacy Measure and Cyber-plagiarism Measure

		Measure of academic self-efficacy	Measure of cyber-plagiarism
Measure of academic self-efficacy	Pearson Correlation	1	-.090
	Sig. (2-tailed)		.061
	N	437	437
Measure of cyber-plagiarism	Pearson Correlation	-.090	1
	Sig. (2-tailed)	.061	
	N	437	437

To compute the correlation coefficient, students were asked to respond to nine questions that were divided into two distinct sections (measure of academic self-efficacy and measure of cyber-plagiarism.) The measure of academic self-efficacy asked participants to identify their level of agreement as to whether or not they felt academically confident on a Likert-type scale: 4=Strongly Agree, 3=Agree, 2=Disagree, 1=Strongly Disagree. The four questions that

measured academic self-efficacy are shown in Table 9 with their respective means and standard deviations. Each item of the academic self-efficacy measure had a mean of 3.30 or greater, with an overall academic self-efficacy mean of 3.36 (SD = .495). The academic self-efficacy item with the highest rating was question 7, which had a mean of 3.53 (SD = .556). Two academic self-efficacy items (question 6 and question 7) had the lowest mean of 3.30. Question 6 had a standard deviation of .583 (coefficient of variation = .177) and question 7 had a standard deviation of .642 (coefficient of variation = .194).

Table 9

Measure of Academic Self-efficacy

Question	N	Range	Min	Max	Mean	SD
4. As a college student, I can do even the hardest assignment if I try.	437	3	1	4	3.32	.649
5. As a college student, I can learn the things taught in class.	437	3	1	4	3.53	.556
6. As a college student, I can figure out difficult assignments.	437	2	2	4	3.30	.583
7. As a college student, I feel prepared to succeed at my academic level.	437	3	1	4	3.30	.642
Overall academic self-efficacy measure	437	2.50	1.5	4	3.36	.495

Note. The questions in this table were obtained with permission from (Hoover-Dempsey & Sandler, 2005).

The examination of students' confidence in their ability to do even the hardest assignments if they try (see Table 10) indicates male senior students had the highest confidence rating and male freshmen had the lowest confidence rating.

Table 10

Students' Confidence in Their Ability to Do Even the Hardest Assignments if They Try

Academic level	Gender	Mean	N	% Responses
	Female	3.19	78	17.8%
Freshman	Male	2.95	21	4.8%
	Total	3.14	99	22.7%
	Female	3.11	56	12.8%
Sophomore	Male	3.22	23	5.3%
	Total	3.14	79	18.1%
	Female	3.36	73	16.7%
Junior	Male	3.53	30	6.9%
	Total	3.41	103	23.6%
	Female	3.43	111	25.4%
Senior	Male	3.60	45	10.3%
	Total	3.48	156	35.7%
	Female	3.30	318	72.8%
Total	Male	3.39	119	27.2%
	Total	3.32	437	100.0%

The examination of students' confidence in their ability to learn the things taught in class (see Table 11) indicates male senior students had the highest confidence rating and male freshmen had the lowest confidence rating.

Table 11

Students' Confidence in Their Ability to Learn the Things Taught in Class

Academic level	Gender	Mean	N	%Responses
Freshman	Female	3.41	78	17.8%
	Male	3.29	21	4.8%
	Total	3.38	99	22.7%
Sophomore	Female	3.43	56	12.8%
	Male	3.57	23	5.3%
	Total	3.47	79	18.1%
Junior	Female	3.47	73	16.7%
	Male	3.73	30	6.9%
	Total	3.54	103	23.6%
Senior	Female	3.61	111	25.4%
	Male	3.71	45	10.3%
	Total	3.64	156	35.7%
Total	Female	3.50	318	72.8%
	Male	3.61	119	27.2%
	Total	3.53	437	100.0%

The examination of students' confidence in their ability to figure out difficult assignments (see Table 12) indicates male senior students had the highest confidence rating and female freshmen had the lowest confidence rating.

Table 12

Students' Confidence in Their Ability to Figure out Difficult Assignments

Academic level	Gender	Mean	N	% Responses
	Female	3.04	78	17.8%
Freshman	Male	3.19	21	4.8%
	Total	3.07	99	22.7%
	Female	3.21	56	12.8%
Sophomore	Male	3.30	23	5.3%
	Total	3.24	79	18.1%
	Female	3.19	73	16.7%
Junior	Male	3.57	30	6.9%
	Total	3.30	103	23.6%
	Female	3.44	111	25.4%
Senior	Male	3.58	45	10.3%
	Total	3.48	156	35.7%
	Female	3.25	318	72.8%
Total	Male	3.45	119	27.2%
	Total	3.30	437	100.0%

The examination of students' confidence in their ability to succeed at their academic level (see Table 13) indicates male senior students felt most prepared to succeed at their academic level and male freshmen felt least prepared to succeed at their academic level.

Table 13

Students' Confidence in Their Ability to Succeed at Their Academic Level

Academic level	Gender	Mean	N	% of Responses
	Female	3.14	78	17.8%
Freshman	Male	3.10	21	4.8%
	Total	3.13	99	22.7%
	Female	3.27	56	12.8%
Sophomore	Male	3.22	23	5.3%
	Total	3.25	79	18.1%
	Female	3.23	73	16.7%
Junior	Male	3.43	30	6.9%
	Total	3.29	103	23.6%
	Female	3.39	111	25.4%
Senior	Male	3.56	45	10.3%
	Total	3.44	156	35.7%
	Female	3.27	318	72.8%
Total	Male	3.38	119	27.2%
	Total	3.30	437	100.0%

To determine whether the independent variables ("Gender" and "Academic_Level") and their interaction ("Gender*Academic_Level") have a statistically significance on the dependent variable, "Academic Self-efficacy," a 2-way ANOVA was performed. From the "Sig." column, it appears there is a minimal statistical difference in academic self-efficacy between gender groups at (p=.058) level. However, there is no statistically significant difference in academic self-efficacy between gender groups and academic levels at (p=.220) level (see Table 14).

Table 14

2-Way ANOVA of the Effect of Gender and Class Level on Academic Self-efficacy

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	.591[a]	7	.084	5.952	.000
Intercept	225.495	1	225.495	15903.852	.000
Gender	.051	1	.051	3.610	.058
Academic_Level	.445	3	.148	10.463	.000
Gender * Academic_Level	.063	3	.021	1.477	.220
Error	6.083	429	.014		
Total	315.727	437			
Corrected Total	6.673	436			

Note. a. R Squared = .089 (Adjusted R Squared = .074) and p value: Significant at the p<.05 level.

An examination of academic self-efficacy across gender and academic level indicates although male students appear to have a higher academic self-efficacy than female students, male freshman appear to have the lowest academic self-efficacy in general (see Table 15).

Table 15

Descriptive Statistics of the Impact of Gender and Class Level on Academic Self Efficacy

Gender	Academic level	Mean	SD	N
Female	Freshman	.7989	.12363	78
	Sophomore	.8136	.11211	56
	Junior	.8279	.12918	73
	Senior	.8671	.11435	111
	Total	.8320	.12242	318
Male	Freshman	.7827	.13202	21
	Sophomore	.8315	.11983	23
	Junior	.8917	.10372	30
	Senior	.9028	.11659	45
	Total	.8650	.12446	119
Total	Freshman	.7955	.12494	99
	Sophomore	.8188	.11393	79
	Junior	.8465	.12524	103
	Senior	.8774	.11576	156
	Total	.8410	.12372	437

The measure of cyber-plagiarism (see Table 16) asked participants to indicate how frequently they use the internet to copy and paste unattributed sources on written assignments on a Likert-type scale: 4=Very Frequently, 3=Frequently, 2=Rarely, 1=Never. The five questions that measured cyber-plagiarism are shown in Table 14 with their respective means and standard deviations. Each item of the cyber-plagiarism measure had a mean of 1.43 or below, with an overall cyber-plagiarism mean of 1.13 (SD. = .301). The cyber-plagiarism item with the lowest rating was question 25, which had a mean of 1.03 (SD = .251). The cyber-plagiarism item with the highest rating was question 21, which had a mean of 1.43 (SD = .708).

Table 16

Measure of Cyber-plagiarism

Question	N	Min	Max	Mean	SD
21. How often do you use the Internet to copy text and insert it in a paper as your own writing, without citation (for example, footnotes)?	437	1	4	1.43	.708
22. How often do you use the Internet to copy an entire paper and hand it in as your own writing, without citation?	437	1	4	1.05	.299
23. How often do you use the Internet - for example, social media or Email - to ask someone to provide you with a paper to hand in as your own writing?	437	1	4	1.11	.423
24. How often do you purchase papers from print publication term paper mills and hand them in as your own writings?	437	1	4	1.04	.268
25. How often do you use the Internet to purchase papers from on-line term paper mills and hand them in as your own writing?	437	1	4	1.03	.251
Overall measure of cyber-plagiarism	437	1	4	1.13	.301

Note. The questions in this table were obtained with permission from (Scanlon & Neumann, 2002) and reproduced from (Walter, 2008).

The descriptive analysis of each item in the measure of cyber-plagiarism is addressed in the response to fifth research question.

To evaluate the second research question, “What is undergraduate college students’ perception of author’s ownership in the digital age?" students responded to three questions designed to indicate their opinions about undergraduate students’ perception of author's ownership in the digital age on a Likert-type scale: 4=Strongly Agree, 3=Agree, 2=Disagree, 1=Strongly Disagree. The three questions are shown in Table 17 with their respective means and standard deviations. Each item on the student perception of author’s ownership measurement had a mean of 3.77 or greater with an overall perception rating of 3.80 (SD. = .407). The item with the highest rating on students' perception of author's ownership measurement was question 10, which had a mean of 3.83 (SD = .432). The perception of author's ownership item with lowest rating was question 11, which had a mean of 3.77 (SD = .480).

Table 17

Students' Perception of Author's Ownership

Question	N	Range	Min	Max	Mean	SD
9. It is wrong to hand in someone else's writing as one's own, without citation.	437	3	1	4	3.80	.445
10. It is wrong to purchase from term paper mills and hand them in as one's own writing.	437	3	1	4	3.83	.432
11. It is wrong to use the Internet to copy text and hand it in as one's own writing, without citation.	437	3	1	4	3.77	.480
Overall students' perception of author's ownership	437	3	1	4	3.80	.407

Note. The questions in this table were obtained with permission from (Scanlon & Neumann, 2002) and reproduced from (Walter, 2008).

To determine whether the independent variables ("Gender" and "Academic_Level") and their interaction ("Gender*Academic_Level") have a statistically significance on the dependent variable, "Students' Perception of Authorship," a 2-way ANOVA was performed. From the "Sig." column, it appears there is no statistically significant difference in students' perception of authorship due to the interaction between gender and academic level at (p=.780). There is no statistically significant difference in students' perception of author's ownership between gender groups at (p=.907). And there is no statistically significant difference in students' perception of author's ownership between academic levels at (p=.197) (see Table 18).

Table 18

2-Way ANOVA of the Effect of Gender and Class Level on Students' Perception of Authorship

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	.062[a]	7	.009	.858	.540
Intercept	287.796	1	287.796	27772.946	.000
Gender	.000	1	.000	.014	.907
Academic_Level	.049	3	.016	1.565	.197
Gender * Academic_Level	.011	3	.004	.363	.780
Error	4.445	429	.010		
Total	399.090	437			
Corrected Total	4.508	436			

Note. p value: Significant at the p<.05 level.

When respondents were asked to indicate their level of agreement as to whether it is wrong to hand in someone else's writing as one's own without citation, male junior students had the highest score while male sophomores had the lowest score (see Table 19).

Table 19

Students' Perception of Handing in Someone Else's Writing as One's Own, Without Citation

Academic level	Gender	Mean	N	% of Responses
	Female	3.76	78	17.8%
Freshman	Male	3.81	21	4.8%
	Total	3.77	99	22.7%
	Female	3.73	56	12.8%
Sophomore	Male	3.70	23	5.3%
	Total	3.72	79	18.1%
	Female	3.84	73	16.7%
Junior	Male	3.90	30	6.9%
	Total	3.85	103	23.6%
	Female	3.84	111	25.4%
Senior	Male	3.78	45	10.3%
	Total	3.82	156	35.7%
	Female	3.80	318	72.8%
Total	Male	3.80	119	27.2%
	Total	3.80	437	100.0%

When respondents were asked to indicate their level of agreement as to whether it is wrong to purchase from term paper mills and hand them in as one's own writing, male junior students had the highest score and male freshman had the lowest score (see Table 20).

Table 20

Students' Perception of the Purchase From Term Paper Mills and Handing Them in as One's own Writing

Academic level	Gender	Mean	N	% of Responses
	Female	3.78	78	17.8%
Freshman	Male	3.76	21	4.8%
	Total	3.78	99	22.7%
	Female	3.77	56	12.8%
Sophomore	Male	3.83	23	5.3%
	Total	3.78	79	18.1%
	Female	3.90	73	16.7%
Junior	Male	3.90	30	6.9%
	Total	3.90	103	23.6%
	Female	3.86	111	25.4%
Senior	Male	3.80	45	10.3%
	Total	3.84	156	35.7%
	Female	3.83	318	72.8%
Total	Male	3.82	119	27.2%
	Total	3.83	437	100.0%

When respondents were asked to indicated their level of agreement as whether it is wrong to use the Internet to copy text and hand it in as one's own writing without citation, male junior students had the highest score and male sophomores had the lowest score (see Table 21).

Table 21

Students' Perception of the Use of the Internet to Copy Text and Hand it in as One's Own Writing without Citation

Academic level	Gender	Mean	N	% of Responses
	Female	3.74	78	17.8%
Freshman	Male	3.71	21	4.8%
	Total	3.74	99	22.7%
	Female	3.75	56	12.8%
Sophomore	Male	3.65	23	5.3%
	Total	3.72	79	18.1%
	Female	3.78	73	16.7%
Junior	Male	3.90	30	6.9%
	Total	3.82	103	23.6%
	Female	3.81	111	25.4%
Senior	Male	3.76	45	10.3%
	Total	3.79	156	35.7%
	Female	3.78	318	72.8%
Total	Male	3.76	119	27.2%
	Total	3.77	437	100.0%

To evaluate the third research question, “What is the social acceptability of cyber-plagiarism in the digital age?" students were asked to respond to five questions designed to indicate their opinion about their university's counter-cyber-terrorism practices on a Likert-type scale: 4=Strongly Agree, 3=Agree, 2=Disagree, 1=Strongly Disagree. The five questions are shown in Table 22 with their respective means and standard deviations. Each item on the measure of the social acceptability of cyber-plagiarism had a mean of 3.66 or greater with an overall mean perception of 3.72 (SD. = .372). The item with the highest mean on the measure of the social acceptability of cyber-plagiarism was question 13, which had a mean of 3.83 (SD = .397). The social acceptability of cyber-plagiarism measurement item with the lowest rating was question 15, which had a mean of 3.66 (SD = .537).

Table 22

Measure of the Social Acceptability of Cyber-plagiarism

Question	N	Range	Min	Max	Mean	SD
12. It is clear that my professors feel it is wrong for students to use the Internet to copy text and hand it in as their own writing, without citation.	437	2	2	4	3.81	.406
13. It is clear that my professors feel it is wrong for students to hand in someone else's writing as their own, without citation.	437	2	2	4	3.83	.397
14. It is clear my professors feel it is wrong for students to purchase papers from term paper mills and hand them in as their own writing.	437	3	1	4	3.75	.511
15. At my college there are strict punishments for using the Internet to copy text and hand it in as one's own writing, without citation.	437	3	1	4	3.66	.537
16. At my college there are strict punishments for handing in someone else's writing as one's own, without citation.	437	2	2	4	3.67	.522
Overall social acceptability of cyber-plagiarism in the digital age	437	1.80	2.20	4	3.74	.372

Note. The questions in this table were obtained with permission from (Scanlon & Neumann, 2002) and reproduced from (Walter, 2008).

To determine whether the independent variables ("Gender" and "Academic_Level") and their interaction ("Gender*Academic_Level") have a statistically significance on the dependent variable, "Social Acceptability of Cyber-plagiarism," a 2-way ANOVA was performed. From the "Sig." column, it appears there is no statistically significant difference in students' perception of the social acceptability of cyber-plagiarism due to the interaction between gender and academic levels at (p=.820). Similarly, there is no statistically significant difference in the perception of the social acceptability of cyber-plagiarism between gender groups at (p=.640) and across academic levels at (p=.352) (see Table 23).

Table 23

2-Way ANOVA of the Effect of Gender and Class Level on Social Acceptability of Cyber-plagiarism

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	.043[a]	7	.006	.707	.666
Intercept	279.356	1	279.356	32081.188	.000
Gender	.002	1	.002	.219	.640
Academic_Level	.029	3	.010	1.093	.352
Gender * Academic_Level	.008	3	.003	.307	.820
Error	3.736	429	.009		
Total	386.760	437			
Corrected Total	3.779	436			

Note. a. R Squared = .011 (Adjusted R Squared = -.005) and p value: Significant at the p<.05 level.

When respondents were asked to indicate their level of agreement with the following statement: “It is clear that my professors feel it is wrong for students to use the Internet to copy text and hand it in as their own writing, without citation,” female junior students had the highest score and male sophomore students had the lowest score (see Table 24).

Table 24

Student's Perception of How Their Professors Feel About the Use of the Internet to Copy Text and Handing it in as Their Own Writing, Without Citation

Academic level	Gender	Mean	N	% of Responses
	Female	3.86	78	17.8%
Freshman	Male	3.86	21	4.8%
	Total	3.86	99	22.7%
	Female	3.79	56	12.8%
Sophomore	Male	3.65	23	5.3%
	Total	3.75	79	18.1%
	Female	3.78	73	16.7%
Junior	Male	3.80	30	6.9%
	Total	3.79	103	23.6%
	Female	3.88	111	25.4%
Senior	Male	3.73	45	10.3%
	Total	3.84	156	35.7%
	Female	3.84	318	72.8%
Total	Male	3.76	119	27.2%
	Total	3.81	437	100.0%

When respondents were asked to indicate their level of agreement with the following statement: " It is clear that my professors feel it is wrong for students to hand in someone else's

writing as their own, without citation," female junior students had the highest score while male sophomores and male seniors had the lowest score (see Table 25).

Table 25

Students' Perception of how their Professors Feel about Students Handing in Someone Else's Writing as Their Own Without Citation

Academic level	Gender	Mean	N	% of Responses
	Female	3.83	78	17.8%
Freshman	Male	3.81	21	4.8%
	Total	3.83	99	22.7%
	Female	3.80	56	12.8%
Sophomore	Male	3.78	23	5.3%
	Total	3.80	79	18.1%
	Female	3.81	73	16.7%
Junior	Male	3.83	30	6.9%
	Total	3.82	103	23.6%
	Female	3.87	111	25.4%
Senior	Male	3.78	45	10.3%
	Total	3.85	156	35.7%
	Female	3.84	318	72.8%
Total	Male	3.80	119	27.2%
	Total	3.83	437	100.0%

When respondents were asked to indicate their level of agreement with the following statement: "It is clear professors feel it is wrong for students to purchase papers from term paper mills and hand them in as their own writing," female sophomores had the highest score and male sophomores had the lowest score (see Table 26).

Table 26

Students' Perception of How their Professors feel about Students Purchasing Papers from Term Paper Mills and Handing Them in as Their Own Writing

Academic level	Gender	Mean	N	% of Responses
	Female	3.79	78	17.8%
Freshman	Male	3.71	21	4.8%
	Total	3.78	99	22.7%
	Female	3.59	56	12.8%
Sophomore	Male	3.57	23	5.3%
	Total	3.58	79	18.1%
	Female	3.84	73	16.7%
Junior	Male	3.73	30	6.9%
	Total	3.81	103	23.6%
	Female	3.81	111	25.4%
Senior	Male	3.71	45	10.3%
	Total	3.78	156	35.7%
	Female	3.77	318	72.8%
Total	Male	3.69	119	27.2%
	Total	3.75	437	100.0%

When respondents were asked to indicate their level of agreement with the following statement: " It is clear my professors feel it is wrong for students to purchase papers from term

paper mills and hand them in as their own writing," male freshman had the highest score and male seniors had the lowest score (see Table 27).

Table 27

Students' Awareness of the Strict Punishments at Their College for Using the Internet to Copy Text and Handing it in as One's Own Writing Without Citation

Academic level	Gender	Mean	N	% of Responses
	Female	3.72	78	17.8%
Freshman	Male	3.81	21	4.8%
	Total	3.74	99	22.7%
	Female	3.61	56	12.8%
Sophomore	Male	3.70	23	5.3%
	Total	3.63	79	18.1%
	Female	3.67	73	16.7%
Junior	Male	3.73	30	6.9%
	Total	3.69	103	23.6%
	Female	3.62	111	25.4%
Senior	Male	3.60	45	10.3%
	Total	3.62	156	35.7%
	Female	3.65	318	72.8%
Total	Male	3.69	119	27.2%
	Total	3.66	437	100.0%

When respondents were asked to indicate their level of agreement with the following statement: "At my college there are strict punishments for using the Internet to copy text and hand it in as one's own writing, without citation," male freshman students had the highest score and male seniors had the lowest score (see Table 28).

Table 28

Students' Awareness of the Strict Punishments at their College for Handing in Someone Else's Writing as One's Own, without Citation

Academic level	Gender	Mean	N	% of Responses
	Female	3.69	78	17.8%
Freshman	Male	3.81	21	4.8%
	Total	3.72	99	22.7%
	Female	3.64	56	12.8%
Sophomore	Male	3.65	23	5.3%
	Total	3.65	79	18.1%
	Female	3.70	73	16.7%
Junior	Male	3.67	30	6.9%
	Total	3.69	103	23.6%
	Female	3.64	111	25.4%
Senior	Male	3.62	45	10.3%
	Total	3.63	156	35.7%
	Female	3.67	318	72.8%
Total	Male	3.67	119	27.2%
	Total	3.67	437	100.0%

To evaluate the fourth research question, “What is undergraduate college students’ perception of the prevalence of cyber-plagiarism among their peers?" students were asked to

respond to four questions to indicate their opinion as how often their peers engage cyber-plagiarism on a Likert-type scale: 4=Very Frequently, 3=Frequently, 2=Rarely, 1=Never. The four questions are shown in Table 29 with their respective means and standard deviations. Each item on the student perception had a mean of 2.48 or greater, with an overall mean perception of 2.76 (SD. =.578). The item with the highest rating on students' perception of the prevalence of cyber-plagiarism among their peers was question 17, which had a mean of 3.22 (SD = .683). The item on students' perception of the prevalence of cyber-plagiarism among their peers item with lowest rating was question 11, which had a mean of 2.48 (SD = .731).

Table 29

Students' Perception of the Prevalence of Cyber-plagiarism Among Their Peers

Question	N	Range	Min	Max	Mean	SD
17. How often do you think students use the Internet to copy text and insert it in a paper as their own writing, without citation (for example, footnotes)?	437	3	1	4	3.22	.683
18. How often do you think students use the Internet to copy an entire paper and hand it in as their own writing, without citation?	437	3	1	4	2.52	.744
19. How often do you think students use the Internet - for example, social media or Email - to ask someone to provide them with a paper to hand in as their own writing?	437	3	1	4	2.82	.799
20. How often do you think students use the Internet to purchase papers from on-line term paper mills and hand them in as their own writing?	437	3	1	4	2.48	.731
Overall students' perception of the prevalence of cyber-plagiarism among their peers	437	3	1	4	2.76	.578

Note. The questions in this table were obtained with permission from (Scanlon & Neumann, 2002) and reproduced from (Walter, 2008).

To determine whether the independent variables ("Gender" and "Academic_Level") and their interaction ("Gender*Academic_Level") have a statistically significance on the dependent variable, "Perception of the Prevalence of Cyber-plagiarism among Peers," a 2-way ANOVA was performed. From the "Sig." column, it appears there is no statistically significant difference in students' perception of the prevalence of cyber-plagiarism among their peers due to the interaction between respondents' gender and academic levels at (p=.678). Similarly, there is no statistically significant difference in the perception of the prevalence of cyber-plagiarism among peers between respondents' class levels at (p=.401). However, there is a statistically significant difference in the perception of the prevalence of cyber-plagiarism among peers between groups at (p=.021) (see Table 30).

Table 30

2-Way ANOVA of the Effect of Gender and Class Level on the Perception of the Prevalence of Cyber-plagiarism Among Peers

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	.206[a]	7	.029	1.419	.196
Intercept	148.687	1	148.687	7176.736	.000
Gender	.112	1	.112	5.397	.021
Academic_Level	.061	3	.020	.981	.401
Gender * Academic_Level	.032	3	.011	.507	.678
Error	8.888	429	.021		
Total	217.453	437			
Corrected Total	9.094	436			

Note. a. R Squared = .023 (Adjusted R Squared = .007) and p value: Significant at the $p<.05$ level.

Further analysis indicates that while female freshmen have the highest rating (.7204), male sophomores have the lowest of the perception rating of the prevalence of cyber-plagiarism among their peers (.6250) (See Table 31).

Table 31

Descriptive Statistics of the Impact of Gender and Academic Level on the Perception of the Prevalence of Cyber-plagiarism Among Peers

Gender	Academic level	Mean	SD	N
	Freshman	.7204	.14056	78
	Sophomore	.6975	.13098	56
Female	Junior	.6884	.14859	73
	Senior	.6954	.15031	111
	Total	.7003	.14413	318
	Freshman	.6875	.14922	21
	Sophomore	.6250	.14475	23
Male	Junior	.6688	.15410	30
	Senior	.6708	.13083	45
	Total	.6644	.14254	119
	Freshman	.7134	.14230	99
	Sophomore	.6764	.13823	79
Total	Junior	.6826	.14973	103
	Senior	.6883	.14497	156
	Total	.6905	.14442	437

When asked to respond to the following statement: "How often do you think students use the Internet to copy text and insert it in a paper as their own writing, without citation (for example, footnotes)," female sophomores had the highest score and male sophomores had the lowest score (see Table 32).

Table 32

Students' Perception of How often Their Peers Use the Internet to Copy Text and Insert It in a Paper as Their Own Writing, Without Citation (For Example, Footnotes)

Academic level	Gender	Mean	N	% of Responses
	Female	3.23	78	17.8%
Freshman	Male	3.24	21	4.8%
	Total	3.23	99	22.7%
	Female	3.30	56	12.8%
Sophomore	Male	2.87	23	5.3%
	Total	3.18	79	18.1%
	Female	3.37	73	16.7%
Junior	Male	3.10	30	6.9%
	Total	3.29	103	23.6%
	Female	3.20	111	25.4%
Senior	Male	3.18	45	10.3%
	Total	3.19	156	35.7%
	Female	3.26	318	72.8%
Total	Male	3.11	119	27.2%
	Total	3.22	437	100.0%

When asked to respond to the following statement: "How often do you think students use the Internet to copy an entire paper and hand it in as their own writing, without citation,"

female freshman had the highest score and male sophomores had the lowest score (see Table 33).

Table 33

Students' Perception of How Often Their Peers Use the Internet to Copy an Entire Paper and Hand It in as Their Own Writing, Without Citation

Academic level	Gender	Mean	N	% of Responses
	Female	2.69	78	17.8%
Freshman	Male	2.38	21	4.8%
	Total	2.63	99	22.7%
	Female	2.55	56	12.8%
Sophomore	Male	2.26	23	5.3%
	Total	2.47	79	18.1%
	Female	2.52	73	16.7%
Junior	Male	2.43	30	6.9%
	Total	2.50	103	23.6%
	Female	2.52	111	25.4%
Senior	Male	2.44	45	10.3%
	Total	2.50	156	35.7%
	Female	2.57	318	72.8%
Total	Male	2.39	119	27.2%
	Total	2.52	437	100.0%

When asked to respond to the following statement: " How often do you think students use the Internet - for example, social media or Email - to ask someone to provide them with a paper to hand in as their own writing," female freshman had the highest score and male sophomores had the lowest score (see Table 34).

Table 34

Students' Perception of How Often Their Peers Use the Internet - For Example, Social Media or Email - To Ask Someone to Provide Them with a Paper to Hand in as Their Own Writing

Academic level	Gender	Mean	N	% of Responses
	Female	2.99	78	17.8%
Freshman	Male	2.81	21	4.8%
	Total	2.95	99	22.7%
	Female	2.80	56	12.8%
Sophomore	Male	2.52	23	5.3%
	Total	2.72	79	18.1%
	Female	2.75	73	16.7%
Junior	Male	2.80	30	6.9%
	Total	2.77	103	23.6%
	Female	2.89	111	25.4%
Senior	Male	2.67	45	10.3%
	Total	2.83	156	35.7%
	Female	2.87	318	72.8%
Total	Male	2.70	119	27.2%
	Total	2.82	437	100.0%

When asked to respond to the following statement: "How often do you think students use the Internet to purchase papers from on-line term paper mills and hand them in as their own

writing?" female freshman had the highest score and male sophomores had the lowest score (see Table 35).

Table 35

Students' Perception of How Often Their Peers Use the Internet to Purchase Papers from on-line Term Paper Mills and Hand Them in as Their Own Writing

Academic level	Gender	Mean	N	%of Responses
	Female	2.62	78	17.8%
Freshman	Male	2.57	21	4.8%
	Total	2.61	99	22.7%
	Female	2.50	56	12.8%
Sophomore	Male	2.35	23	5.3%
	Total	2.46	79	18.1%
	Female	2.37	73	16.7%
Junior	Male	2.37	30	6.9%
	Total	2.37	103	23.6%
	Female	2.51	111	25.4%
Senior	Male	2.44	45	10.3%
	Total	2.49	156	35.7%
	Female	2.50	318	72.8%
Total	Male	2.43	119	27.2%
	Total	2.48	437	100.0%

To evaluate to the fifth research question, participants were asked to answer five questions indicating how frequently use the internet to copy and paste unattributed sources in written assignments on a Likert-type scale: 4=Very Frequently, 3=Frequently, 2=Rarely, 1=Never. These five questions are shown in Table 36 (copy of Table 16) with their respective means and standard deviations. Each item of the cyber-plagiarism measure had a mean of 1.43 with an overall mean cyber-plagiarism rating of 1.13 (SD. = .301). The cyber-plagiarism item with the lowest rating was question 25, which had a mean of 1.03 (SD = .251). The cyber-plagiarism item with the highest rating was question 21, which had a mean of 1.43 (SD = .708).

Table 36

Measure of Cyber-plagiarism

Question	N	Min	Max	Mean	SD
21. How often do you use the Internet to copy text and insert it in a paper as your own writing, without citation (for example, footnotes)?	437	1	4	1.43	.708
22. How often do you use the Internet to copy an entire paper and hand it in as your own writing, without citation?	437	1	4	1.05	.299
23. How often do you use the Internet - for example, social media or Email - to ask someone to provide you with a paper to hand in as your own writing?	437	1	4	1.11	.423
24. How often do you purchase papers from print publication term paper mills and hand them in as your own writings?	437	1	4	1.04	.268
25. How often do you use the Internet to purchase papers from on-line term paper mills and hand them in as your own writing?	437	1	4	1.03	.251
Overall measure of cyber-plagiarism	437	1	4	1.13	.301

Note. The questions in this table were obtained with permission from (Scanlon & Neumann, 2002) and reproduced from (Walter, 2008).

To determine whether the independent variables ("Gender" and "Academic_Level") and their interaction ("Gender*Academic_Level") have a statistically significance on the dependent variable, "Prevalence of Cyber-plagiarism Among Respondents," a 2-way ANOVA was performed. From the "Sig." column, it appears there is no statistical difference in the prevalence of cyber-plagiarism between gender group of respondents at (p=.159) level. There is no statistically significant difference in academic levels at (.234) level. And there is no statistically significant difference due to the interaction between gender and academic levels at (p=.800) level (see Table 37).

Table 37

2-Way ANOVA of the Impact of Gender and Academic Level on the Prevalence of Cyber-plagiarism Among Respondents

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	.040[a]	7	.006	1.008	.425
Intercept	26.111	1	26.111	4595.200	.000
Gender	.011	1	.011	1.989	.159
Academic_Level	.024	3	.008	1.429	.234
Gender * Academic_Level	.006	3	.002	.335	.800
Error	2.438	429	.006		
Total	37.380	437			
Corrected Total	2.478	436			

Note. a. R Squared = .016 (Adjusted R Squared = .000) and p value: Significant at the p<.05 level.

Further analysis of the data indicated male juniors and male freshmen had the highest mean on the prevalence of cyber-plagiarism among all participant groups. Female sophomores and female seniors had the lowest mean on the prevalence of cyber-plagiarism among all participant groups (see table 38).

Table 38

Descriptive Statistics of the Impact of Gender and Academic Level on the Pervasiveness of Cyber-plagiarism

Gender	Academic level	Mean	SD	N
	Freshman	.2910	.09319	78
	Sophomore	.2714	.03549	56
Female	Junior	.2808	.04760	73
	Senior	.2757	.05911	111
	Total	.2799	.06407	318
	Freshman	.3000	.10954	21
	Sophomore	.2826	.03876	23
Male	Junior	.3050	.16154	30
	Senior	.2789	.05275	45
	Total	.2899	.09949	119
	Freshman	.2929	.09637	99
	Sophomore	.2747	.03658	79
Total	Junior	.2879	.09561	103
	Senior	.2766	.05720	156
	Total	.2826	.07539	437

When asked how often they use the Internet to copy text and insert it in a paper as their own writing without citation, male freshman and male sophomores had the highest score, and female sophomores had the lowest score (see Table 39).

Table 39

Prevalence of Students' Use the Internet to Copy Text and Inserting It in a Paper as Their Own Writing, Without Citation (For Example, Footnotes)

Academic level	Gender	Mean	N	% of Responses
	Female	1.44	78	17.8%
Freshman	Male	1.57	21	4.8%
	Total	1.46	99	22.7%
	Female	1.36	56	12.8%
Sophomore	Male	1.57	23	5.3%
	Total	1.42	79	18.1%
	Female	1.47	73	16.7%
Junior	Male	1.37	30	6.9%
	Total	1.44	103	23.6%
	Female	1.39	111	25.4%
Senior	Male	1.42	45	10.3%
	Total	1.40	156	35.7%
	Female	1.41	318	72.8%
Total	Male	1.46	119	27.2%
	Total	1.43	437	100.0%

When asked how often they use the Internet to copy an entire paper and hand it in as their own writing without citation, male juniors had the highest score and male sophomores had the lowest score (see Table 40).

Table 40

Prevalence of Students' Use the Internet to Copy an Entire Paper and Handing It in as Their Own Writing, Without Citation

Academic level	Gender	Mean	N	of Responses
	Female	1.10	78	17.8%
Freshman	Male	1.10	21	4.8%
	Total	1.10	99	22.7%
	Female	1.02	56	12.8%
Sophomore	Male	1.00	23	5.3%
	Total	1.01	79	18.1%
	Female	1.03	73	16.7%
Junior	Male	1.20	30	6.9%
	Total	1.08	103	23.6%
	Female	1.02	111	25.4%
Senior	Male	1.02	45	10.3%
	Total	1.02	156	35.7%
	Female	1.04	318	72.8%
Total	Male	1.08	119	27.2%
	Total	1.05	437	100.0%

When asked how often they use the Internet - for example, social media or Email - to ask someone to provide them with a paper to hand in as their own writing, male juniors had the highest score and female sophomores had the lowest score (see Table 41).

Table 41

Prevalence of Students' Use of the Internet - For Example, Social Media or Email - to Ask Someone to Provide Them with a Paper to Hand in as Their Own Writing

Academic level	Gender	Mean	N	% of Responses
	Female	1.15	78	17.8%
Freshman	Male	1.14	21	4.8%
	Total	1.15	99	22.7%
	Female	1.05	56	12.8%
Sophomore	Male	1.09	23	5.3%
	Total	1.06	79	18.1%
	Female	1.12	73	16.7%
Junior	Male	1.20	30	6.9%
	Total	1.15	103	23.6%
	Female	1.07	111	25.4%
Senior	Male	1.09	45	10.3%
	Total	1.08	156	35.7%
	Female	1.10	318	72.8%
Total	Male	1.13	119	27.2%
	Total	1.11	437	100.0%

When asked how often they purchase papers from print publication term paper mills and hand them in as their own writings, male juniors had the highest score while male and female sophomores as well as well as female juniors had the lowest score. (see Table 42).

Table 42

Prevalence of Students' Purchase of Papers From Print Publication Term Paper Mills and Handing Them in as Their Own Writings

Academic level	Gender	Mean	N	% of Responses
	Female	1.08	78	17.8%
Freshman	Male	1.10	21	4.8%
	Total	1.08	99	22.7%
	Female	1.00	56	12.8%
Sophomore	Male	1.00	23	5.3%
	Total	1.00	79	18.1%
	Female	1.00	73	16.7%
Junior	Male	1.17	30	6.9%
	Total	1.05	103	23.6%
	Female	1.02	111	25.4%
Senior	Male	1.02	45	10.3%
	Total	1.02	156	35.7%
	Female	1.03	318	72.8%
Total	Male	1.07	119	27.2%
	Total	1.04	437	100.0%

When asked how often they use the Internet to purchase papers from on-line term paper mills and hand them in as their own writing, male juniors had the highest score and male sophomores had the lowest score (see Table 43).

Table 43

Prevalence of Students' Use of the Internet to Purchase Papers From on-line Term Paper Mills and Handing Them in as Their Own Writing

Academic level	Gender	Mean	N	% of Responses
	Female	1.05	78	17.8%
Freshman	Male	1.10	21	4.8%
	Total	1.06	99	22.7%
	Female	1.00	56	12.8%
Sophomore	Male	1.00	23	5.3%
	Total	1.00	79	18.1%
	Female	1.00	73	16.7%
Junior	Male	1.17	30	6.9%
	Total	1.05	103	23.6%
	Female	1.02	111	25.4%
Senior	Male	1.02	45	10.3%
	Total	1.02	156	35.7%
	Female	1.02	318	72.8%
Total	Male	1.07	119	27.2%
	Total	1.03	437	100.0%

Chapter Summary

This chapter presented the results of data analysis organized by section according to the original research questions, and an overview of comparison groups. A correlation between measures of academic self-efficacy and plagiarism was computed, including specific examination of students' perceptions of author's ownership, students' perception of the social acceptability of cyber-plagiarism, students' perception of the prevalence of cyber-plagiarism among their peers, and the prevalence of cyber-plagiarism among respondents.

Research Question 1: What is the Significance of the Relationship between Self-efficacy and Cyber-plagiarism among Undergraduate Students?

- The analysis of the data supported there is no significant relationship between self-efficacy and cyber-plagiarism among undergraduate students.
- Male senior students rated highest about their confidence in their ability to do even the hardest assignments if they try.
- Male freshmen rated lowest about their confidence in their ability to do even the hardest assignments if they try.
- Male senior students rated highest about their confidence in their ability to learn the things taught in class.
- Male freshmen rated lowest about their confidence in their ability to learn the things taught in class.
- Male senior students rated highest about their confidence in their ability to figure out difficult assignments.
- Female freshmen rated lowest about their confidence in their ability figure out difficult assignments.

- Male senior students felt most prepared to succeed at their academic level.
- Male freshmen felt least prepared to succeed at their academic level.
- There is a minimal difference in academic self-efficacy between male and female students.
- Overall, male students had a higher self-efficacy than female students.
- The interaction between gender and academic class has no effect on academic self-efficacy.
- Male freshmen had the lowest academic self-efficacy among all groups.

Research Question 2: What is undergraduate college students' perception of author's ownership in the digital age?

- Overall, students felt very strongly about author's ownership in the digital age with each item on the student perception of author's ownership.
- There is no statistically significant difference in students' perception of author's ownership between gender groups.
- There is no statistically significant difference in students' perception of author's ownership between academic levels.
- There is no statistically significant difference in students' perception of author's ownership based on the interaction between gender groups and academic levels.
- Male junior students found it most wrong to hand in someone else's writing as one's own, without citation.
- Male sophomores found it least wrong to hand in someone else's writing as one's own, without citation.

- Male junior students found it most wrong to purchase from term paper mills and hand them in as one's own writing.
- Male freshman found it least wrong to purchase from term paper mills and hand them in as one's own writing.
- Male junior students found it most wrong to use the Internet to copy text and hand it in as one's own writing, without citation.
- Male sophomores found it least wrong to use the Internet to copy text and hand it in as one's own writing, without citation.

Research Question 3: What is undergraduate students' perception of the social acceptability of academic dishonesty in the digital age?

- Overall, students felt very strongly about their institutional practices to combat cyber-plagiarism.
- There is no statistically significant difference in students' perception of the social acceptability of cyber-plagiarism due to the interaction between gender and academic levels.
- There is no statistically significant difference in the perception of the social acceptability of cyber-plagiarism between gender groups.
- There is no statistical significant difference in students' perception of the social acceptability of cyber-plagiarism across academic levels.
- Female junior students were most aware their professors feel it is wrong for students to use the internet to copy text and hand it in as their own writing, without citation.
- Male sophomore students were least aware their professors feel it is wrong for students to use the internet to copy text and hand it in as their own writing, without citation.

- Female junior students were most aware their professors feel it is wrong for students to hand in someone else's writing as their own, without citation.
- Male sophomores and male seniors were least aware their professors feel it is wrong for students to hand in someone else's writing as their own, without citation.
- Female sophomore students were most aware their professors feel it is wrong for students to purchase papers from term paper mills and hand them in as their own writing.
- Male sophomore students were least aware their professors feel it is wrong for students to purchase papers from term paper mills and hand them in as their own writing.
- Male freshman were most aware at their college there are strict punishments for using the internet to copy text and hand it in as one's own writing, without citation.
- Male seniors were least aware at their college there are strict punishments for using the internet to copy text and hand it in as one's own writing, without citation.
- Male freshman students were most aware at their college there are strict punishments for handing in someone else's writing as one's own, without citation.
- Male seniors were least aware at their college there are strict punishments for using the Internet to copy text and hand it in as one's own writing, without citation.

Research Question 4: What is undergraduate college students' perception of the prevalence of cyber-plagiarism among their peers?

- Overall, students perceive cyber-plagiarism as a prevalent practice among their peers.
- There is no statistically significant difference in students' perception of the prevalence of cyber-plagiarism among their peers due to the interaction between respondents' gender and academic levels

- There is no statistically significant difference in the perception of the prevalence of cyber-plagiarism among peers across respondents' class levels
- There is a statistically significant difference in the perception of the prevalence of cyber-plagiarism among peers between groups.
- Female freshmen have the highest perception rating of the prevalence of cyber-plagiarism among their peers
- Male sophomores have the lowest perception rating of the prevalence of cyber-plagiarism among their peers.
- Female sophomores felt their peers use the Internet to copy text and insert it in a paper as their own writing, without citation very frequently.
- Male sophomores felt their peers use the Internet to copy text and insert it in a paper as their own writing, without citation less frequently.
- Female freshman felt their peers use the Internet to copy an entire paper and hand it in as their own writing, without citation very frequently.
- Male sophomores felt their peers use the Internet to copy an entire paper and hand it in as their own writing, without citation less frequently.
- female freshman felt their peers use the Internet - for example, social media or Email - to ask someone to provide them with a paper to hand in as their own writing very frequently.
- male sophomores felt their use the Internet - for example, social media or Email - to ask someone to provide them with a paper to hand in as their own writing this activity less frequently.

- female freshman felt their peers use the Internet to purchase papers from on-line term paper mills and hand them in as their own writing almost frequently.
- male sophomores felt their peers use the Internet to purchase papers from on-line term paper mills and hand them in as their own writing less frequently.

Research Question 5: To what degree is cyber-plagiarism a prevalent practice among undergraduate college students?

- Overall, student indicated they almost never engage cyber plagiarism.
- There is no statistical difference in the prevalence of cyber-plagiarism between gender group of respondents.
- There is no statistically significant difference in the prevalence of cyber-plagiarism across academic levels.
- There is no statistically significant difference in the prevalence of cyber-plagiarism due to the interaction between gender and academic levels
- Male freshman and male sophomores scored highest on how often they use the Internet to copy text and insert it in a paper as their own writing, without citation.
- Female sophomores scored lowest on how often they use the Internet to copy text and insert it in a paper as their own writing, without citation.
- Male juniors scored highest on how often they use the Internet to copy an entire paper and hand it in as your own writing, without citation.
- Male sophomores scored lowest on how often they use the Internet to copy an entire paper and hand it in as your own writing, without citation.

- Male juniors scored the highest on how often they use the Internet - for example, social media or Email - to ask someone to provide you with a paper to hand in as their own writing,
- female sophomores scored the lowest on how often they use the Internet - for example, social media or Email - to ask someone to provide you with a paper to hand in as their own writing.
- Male and female sophomores as well as well as female juniors scored lowest on how often they purchase papers from print publication term paper mills and hand them in as your own writings.
- Male juniors scored highest on how often they use the Internet to purchase papers from on-line term paper mills and hand them in as your own writing.
- Male sophomores scored lowest on how often they use the Internet to purchase papers from on-line term paper mills and hand them in as your own writing.
- Male juniors and male freshmen had the highest mean on the prevalence of cyber-plagiarism among all participant groups.
- Female sophomores and female seniors had the lowest mean on the prevalence of cyber-plagiarism among all participant groups

Overall, this study has revealed differences in students' academic self-efficacy their perceptions of cyber-plagiarism and their participation in cyber-plagiarism results by both gender and academic level.

CHAPTER FIVE

SUMMARY, RECOMMENDATIONS AND CONCLUSIONS

This final chapter attempts to synthesize the study's contribution to a collective understanding of the topic of academic integrity among college students in the digital age. Levels of academic self-efficacy, students' perceptions of author's ownership, students' perception of the social acceptability of cyber-plagiarism, students' perception of the prevalence of cyber-plagiarism among their peers, and the frequency of cyber-plagiarism among respondents are compared across gender and academic levels. Discussion and implications of the findings are linked to literature on academic self-efficacy and cyber-plagiarism. Finally, suggestions for future study are recommended.

Review of the Proposal, Literature and Theoretical Perspectives

The complexity of the issue of academic dishonesty is evident through the diversity of reasons why students cheat (Wideman, 2009). Literature on academic integrity suggests that plagiarism is on the rise in the digital age (Allen et al., 1998; McCabe & Trevino, 1996), and that one's sense of self-efficacy can play a major role in how one approaches goals, tasks, and challenges (Bandura, 1997). The dominant presence of information technology as an approach to facilitate education has been described as a potential contributing factor to students' dishonest academic practices (Tantillo, 2009). Cyber-plagiarism as a mutation of traditional practices of plagiarism has been attributed to fear of failure (Schab, 1991), lack of skill and knowledge (Batane, 2010), a range from laziness or negligence to properly cite sources to simply exploiting technological means to get ahead academically (Paterson et al., 2003), a breakdown in moral reasoning or low ethical standards (Paterson, 2007), and a socially acceptable behavior (Vojak,

2006). In a Pew survey of 1,055 private and public university presidents, over half said plagiarism in students' papers has increased over the past ten years (Birch, 2011).

It remains unclear, however, how students' academic self-efficacy contributes to dishonest practices. This gap in the existing literature, created an opportunity for a study to examine the relationship between plagiarism in the digital age and measures of academic self-efficacy.

This study explored in depth the extent to which students from the Pennsylvania State System of Higher Education copy and paste unattributed sources into their written assignments because they lack academic confidence. One correlation, five analyses of variance (ANOVA), three measures of perception, and two self-disclosures form the core of the discussion of study results, providing a milieu within which cyber-plagiarism among undergraduate college students can be analyzed. Precisely, this study examined the topic of copying and pasting unattributed sources on written assignments in the theoretically rich and broader context of self-efficacy. Bandura, who proposed a Theory of Self-efficacy (1997), suggests that self-efficacy affects behavior "by its impact on goals and aspirations, outcome expectations, affective proclivities and perception of impediments and opportunities in the social environment" (Bandura, 2006).

Summary & Discussion of Main Findings

Research Question 1 focused on the significance of the relationship between self-efficacy and cyber-plagiarism among undergraduate students. Students were presented nine questions, divided into two distinct sections (measure of academic self-efficacy and measure of cyber-plagiarism), and a Pearson Correlation coefficient was computed between these results. The measure of cyber-plagiarism was also used to answer research question 5.

The calculated Pearson Correlation of -.090 indicated a very weak relationship (-9%) between the two measures. As academic self-efficacy increases, participation in cyber-plagiarism decreases very slightly. The Sig. 2-tailed of the correlation was .06, indicating no statistically significant relationship between respondents' academic self-efficacy and respondents' participation in cyber-plagiarism. H_o was not rejected. Thus, this study provided no empirical evidence to support the notion that students cyber-plagiarize due to their low academic self-efficacy. In other words, students do not necessarily cyber-plagiarize because of a self-perceived inability to synthesize. Although these findings do not constitute a direct contradiction, they are not consistent with the view that students plagiarize because they lack skill and knowledge, as espoused by Batane (Batane, 2010).

In a 1991 study of plagiarism among adolescents, Schab (1991) found that a common reason for cheating was a student's fear of failure. Schab's research also discovered a positive correlation between plagiarism and students' perceptions of dishonesty as a necessary means to succeed in the business world. Although the fear of failure can be related to the lack of academic confidence, other aspects of students' lives must also be considered in determining a definite causal relationship or even a simple correlation between two variables. Additionally, Schab's research was conducted in 1991 when the Internet and Information Technology had not yet emerged as powerful catalysts in the education. It would be interesting to analyze and interpret results of a similar study conducted in the digital age.

The measure of academic self-efficacy asked participants to identify their level of agreement as to whether or not they felt academically confident on a Likert-type scale: 4=Strongly Agree, 3=Agree, 2=Disagree, 1=Strongly Disagree. The four questions used for this purpose are shown in Table 9 with their respective means and standard deviations. Each item of

the academic self-efficacy measure had a mean of 3.30 or greater, and the majority of students felt academically confident with an overall academic self-efficacy rating of 3.36 (SD = .495).

The academic self-efficacy item with the highest rating was question 7, with a mean of 3.53 (SD = .556). This indicates that the majority of respondents felt they could learn the topics taught in class. Two academic self-efficacy items (question 6 and question 7) had the lowest mean rating of 3.30. Question 6 had a standard deviation of .583 (coefficient of variation = .177) and question 7 had a standard deviation of .642 (coefficient of variation = .194). This indicates that most respondents felt prepared to succeed at their academic level. The study did not collect data on academic self-efficacy in specific subjects. However, since reading, writing, and mathematics are often used as a measure of college-readiness, the findings of this research could contrast Greene's (Greene & Forster, 2003) study on public high school graduation and college readiness rates in the United States. Greene's research indicated that less than one-third of high school graduates are college-ready in the areas of reading, writing, and mathematics. Respondents in this study, on the other hand, perceived themselves as being college ready.

Within gender, male senior students showed the highest confidence in their ability to succeed at difficult assignments if they try, while male freshmen had the lowest confidence in this area. Male senior students also indicated the highest confidence in their ability to learn topics taught in class, while male freshmen revealed the lowest confidence. Male senior students also felt most prepared, and male freshmen least prepared, to succeed at their academic level. Overall, male senior students showed the highest confidence in their ability to figure out difficult assignments, while female freshmen indicated the lowest confidence.

The 2-way ANOVA (see Table 14) indicated the interaction between gender and academic level has no effect on academic self-efficacy at ($p = .220$) level. There is however, a

minimal difference of academic self-efficacy between male and female students at ($p = .058$) level. Although male freshman appeared to have the lowest academic self-efficacy in among all respondent groups, male students appeared to a higher academic self-efficacy than female students. These findings are consistent with Bae et al. (2000), Huang (2013); and Sander (2012), whose findings support an academic gender gap that favors male students at the postsecondary level and perhaps beyond.

To measure cyber-plagiarism, the second variable used to compute the Pearson Correlation Coefficient, the survey asked participants to indicate how frequently they used the Internet to copy and paste unattributed sources on written assignments on a Likert-type scale: 4=Very Frequently, 3=Frequently, 2=Rarely, 1=Never. These five questions are shown in Table 16 with their respective means and standard deviations. Each item of the cyber-plagiarism measure had a mean of 1.43 or below, and students indicated they almost never engaged cyber-plagiarism, with an overall cyber-plagiarism rating of 1.13 (SD. = .301).

The cyber-plagiarism item with the lowest rating was question 25, which had a mean of 1.03 (SD = .251). This indicates most respondents almost never use the internet to purchase papers from online term paper mills and hand it in as their own writing. The cyber-plagiarism item with the highest rating was question 21, which had a mean of 1.43 (SD = .708). This indicates that a moderate number of respondents almost rarely use the internet to copy text and insert it into a paper as their own writing without citation (for example, footnotes). These findings do not support Pyle's (2010) study, which indicated that more than 60% of undergraduate students nationwide admitted to cheating on assignments and exams according to one study, and 40% of all U.S. college students said they had woven unattributed material from the Internet into their work.

Research question 2 measured students' perception of author's ownership in the digital age. Perception was determined using a mean perception score for responses to questions 9 through 11 of the survey instrument. These questions asked respondents to indicate their opinion about undergraduate students' perception of author's ownership in the digital age, and are shown in Table 17 with their respective means and standard deviations.

The 2-way ANOVA (see Table 18) indicated the interaction between gender and academic level has no effect on students' perception of authorship at ($p = .780$) level. Also, gender has no effect on students' perception of author's ownership at ($p=.907$) level. Similarly, academic level has not effect on students' perception of authorship at ($p=.197$) level.

Each item on the student perception of author's ownership measurement had a mean of 3.77 or greater, and students felt very strongly about author's ownership in the digital age, with an overall perception rating of 3.80 (SD. = .407). The item with the highest rating on students' perception of author's ownership measurement was question 10, which had a mean of 3.83 (SD = .432). This indicates that a significant majority of students felt it is wrong to purchase a paper from term paper mills and hand it in as one's own writing.

The perception of author's ownership item with the lowest rating was question 11, which had a mean of 3.77 (SD = .480). This indicates that the majority of students felt it is wrong to use the Internet to copy text and hand it in as one's own writing without citation. These findings do not support Lipsett's (Lipsett, 2009) research, which suggested that today's students are casual about legal and copyright issues, and evaluating and attributing information. These findings are also not consistent with the philosophical views of the Church of Kopimism (George, 2012), which opposes copyrights in all forms and encourages piracy of all types of media.

Male junior students found it most wrong to hand in someone else's writing as one's own without citation, while male sophomores found it least wrong. On the question of purchasing papers from term paper mills and handing them in as one's own writing, male junior students considered the practice most wrong, while male freshman felt it was least wrong. Similarly, male junior students indicated it was most wrong to use the Internet to copy text and hand it in as one's own writing without citation, while male sophomores rated it least wrong.

Research Question 3 measured students' perception of the social acceptability of cyber-plagiarism in the digital age, utilizing five questions to rank counter cyber-plagiarism practices at their university on a Likert-type scale: 4=Strongly Agree, 3=Agree, 2=Disagree, 1=Strongly Disagree. The five questions are shown in Table 22 with their respective means and standard deviations. Each question produced a mean of 3.66 or greater, and students felt strongly positive about their institutional practices to combat cyber-plagiarism, with an overall perception rating of 3.72 (SD. = .372).

The 2-way ANOVA (see Table 23) indicated there the interaction between gender and academic level has impact on students' perception of the social acceptability of cyber-plagiarism levels at (p=.820). Similarly, gender has impact in the perception of the social acceptability of cyber-plagiarism (p=.640), academic levels has not impact on the perception of the social acceptability of cyber-plagiarism at (p=.352).

The item with the highest rating on the social acceptability of cyber-plagiarism measurement was question 13, with a mean of 3.83 (SD = .397). This indicates a significant majority of students strongly agreed that their professors felt it was wrong for students to hand in someone else's writing as their own, without citation.

The social acceptability of cyber-plagiarism measurement item with the lowest rating was question 15, with a mean of 3.66 (SD = .537). This indicates that a majority of students perceived strict punishments at their university for using the internet to copy text and hand it in as one's own writing, without citation. These findings do not support Vojak (2006) description of cyber-plagiarism as a socially acceptable behavior. Additionally, these results are not consistent with Kakabadse's (2009) research on technology addiction, which concluded that 28.5% of students in the study deemed their practice as acceptable despite recognizing that such behavior is considered plagiarism.

On the question of how socially acceptable students find cyber-plagiarism, female junior students were most aware that their professors deem this practice to be wrong, and male sophomore students were least aware that their professors think it is wrong for students to use the internet to copy text and hand it in as their own writing without citation. Female junior students were most aware that their professors think it is wrong for students to hand in someone else's writing as their own without citation. Male sophomores and male seniors were least aware. Female sophomore students were also most aware that their professors believe it is wrong for students to purchase papers from term paper mills and hand them in as their own writing. Male sophomore students were least aware of this perspective.

Overall, female students were more aware of the practices in place at their university to discourage cyber-plagiarism, and, perhaps consequently, were most likely to find cyber-plagiarism socially unacceptable.

Male freshman were most aware that their university had strict punishments for using the internet to copy text and hand it in as one's own writing without citation, and male seniors were least aware. Male freshman students were most aware that their university had strict

punishments for handing in someone else's writing as one's own without citation, while male seniors were least aware.

Research Question 4 measured undergraduate college students' perception of the prevalence of cyber-plagiarism among their peers. Students responded to four questions indicating their opinion as to how often their peers engaged in cyber-plagiarism on a Likert-type scale: 4=Very Frequently, 3=Frequently, 2=Rarely, 1=Never. The four questions are shown in Table 29 with their respective means and standard deviations. Each item in the student perception group had a mean of 2.48 or greater, and students perceived cyber-plagiarism as a prevalent practice among their peers with an overall perception rating of 2.76 (SD. =.578).

The findings for research question 4 are consistent with the literature that plagiarism is on the rise in the digital age. These findings also support the notion that cyber-plagiarism is prevalent among college-aged students (Desruisseaux, 1999; McCabe & Trevino, 1996).

Although a significant majority of respondents believed their peers engage in at least one form of cyber-plagiarism, the respondents themselves indicted they almost never took part in this practice. The item with the highest rating on students' perception of the prevalence of cyber-plagiarism among their peers was question 17, which had a mean of 3.22 (SD = .683). This indicates most students felt their peers used the Internet to copy text and insert it in a paper as their own writing without citation (for example, footnotes). Question 11 had the lowest rating, with a mean of 2.48 (SD = .731). This indicates that fewer students felt their peers used the Internet to purchase papers from on-line term paper mills and hand them in as their own writing than used the internet to copy text and insert it into their own writing.

A 2-way ANOVA (see Table 30) indicated the interaction between gender and academic level has no impact students' perception of the prevalence of cyber-plagiarism among their peers

(p=.678) level. Similarly, academic level has no impact on the perception of the prevalence of cyber-plagiarism among peers at (p=.401) level. However, gender has an impact on the perception of the prevalence of cyber-plagiarism among peers at (p=.021). While female freshmen had the highest rating (.7204), male sophomores had the lowest perception rating of the prevalence of cyber-plagiarism among their peers (.6250)

When asked to respond to the question, "How often do you think students use the Internet to copy text and insert it in a paper as their own writing, without citation (for example, footnotes)" (Walter, 2008, p. 173), female sophomores answered that their peers engaged in this activity very frequently, while male sophomores indicated that their peers engaged in this activity less frequently.

When asked, "How often do you think students use the Internet to copy an entire paper and hand it in as their own writing, without citation?" (Walter, 2008, p. 173), female freshman indicated that their peers engaged in this activity very frequently, and male sophomores that their peers engaged in this activity less frequently.

When asked, "How often do you think students use the Internet - for example, social media or Email - to ask someone to provide them with a paper to hand in as their own writing?"(Walter, 2008, p. 173), female freshman answered that their peers engaged in this activity very frequently, and male sophomores indicated that their peers engaged in this activity less frequently.

When asked, "How often do you think students use the Internet to purchase papers from on-line term paper mills and hand them in as their own writing?" (Walter, 2008, p. 173), female freshman answered that their peers engaged in this activity almost frequently, and male sophomores answered that their peers engaged in this activity less frequently.

Research question 5 measured the prevalence of cyber-plagiarism among students. More precisely, research question 5 asked respondents to indicate how frequently they use the internet to copy and paste unattributed sources into written assignments on a Likert-type scale: 4=Very Frequently, 3=Frequently, 2=Rarely, 1=Never. The five questions used for this purpose are shown in Table 36 with their respective means and standard deviations. Each item of the cyber-plagiarism measure had a mean of 1.43 or below, and students indicated they almost never engaged in cyber-plagiarism, with an overall cyber-plagiarism rating of 1.13 (SD. = .301).

The survey instrument used to measure cyber-plagiarism in the current study was originally designed for the research in Scanlon (2002). The findings of that research indicated that when 698 undergraduates (85.9% between the ages of 17 and 23; 87.5 % in the first through fourth year) from nine colleges and universities completed a survey on Internet plagiarism, a substantial minority of students reported they used the Internet to copy and paste text into their papers without citation. Using the subjective definition of "substantial minority" as a frame of reference, the current study would speculate that the mean rating of 1.43 (almost never) is an indication of the minuscule number of students in the current who reported they copy and paste text into their papers without citation. This miniscule number is less than "substantial minority", as one would agree. From this speculation, it would not be an exaggeration to conclude that results of this study not consistent with Scanlon (2002) findings.

A 2-way ANOVA (see Table 37) indicated gender has no impact on the prevalence of cyber-plagiarism among respondents at (p=.159) level. However, male freshmen had the highest rating for the prevalence among respondents (.3000) and female sophomores had the lowest rating of prevalence of cyber-plagiarism (.2714). The 2-way ANOVA also indicated academic level has no impact prevalence of cyber-plagiarism among respondents at (.234) level. And the

interaction between gender and academic levels has no impact on the prevalence of cyber-plagiarism among respondents at (p=.800) level.

The cyber-plagiarism item with the lowest rating was question 25, which had a mean of 1.03 (SD = .251). This indicates that most respondents almost never use the internet to purchase a paper from an online term paper mill and hand it in as their own writing The cyber-plagiarism item with the highest rating was question 21, which had a mean of 1.43 (SD = .708). This indicates a moderate number of respondents almost rarely used the internet to copy text and insert it in a paper as their own writing without citation (for example, footnotes).

These results were similar across all academic level and gender categories, with respondents indicating that they almost never used the Internet to copy text and insert it in a paper as their own writing without citation. Male freshman and male sophomores reported the highest incidence, and female sophomores the lowest.

When asked, how often they used the Internet to copy an entire paper and hand it in as their own writing without citation (Walter, 2008), all academic levels and genders indicated almost never. Male juniors reported the highest incidence, and male sophomores the lowest. This finding is not consistent with a Szabo and Underwood (2004) study, which found that third year students were less likely to cheat than first or second year.

When asked how often they used the Internet - for example, social media or Email - to ask someone to provide them with a paper to hand in as their own writing (Walter, 2008), all academic levels and genders indicated almost never. Male juniors reported the highest incidence, and female sophomores the lowest.

When asked how often they purchased papers from print publication term paper mills and handed them in as their own writing (Walter, 2008), all academic levels and genders indicated

almost never. Male juniors reported the highest incidence. Male and female sophomores and female juniors reported the lowest. This is finding is consistent with Szabo and Underwood (2004) findings that more male than female students cheat.

When asked how often they used the Internet to purchase papers from on-line term paper mills and handed them in as their own writing (Walter, 2008), all academic levels and genders indicated almost never. Male juniors reported the highest incidence, and male sophomores the lowest. These findings are not consistent with Straw (2002), which found that younger students plagiarize more often than mature students. These findings also do not support Kakabadse's (Kakabadse & Kakabadse, 2009) research on technology addiction, which found that a high proportion of teenagers (59.2%) admitted to inserting information straight from the internet into schoolwork without actually reading or changing it.

Even with a high measure of academic self-efficacy (3.36) and a low measure of cyber-plagiarism (1.13) research questions 4 and 5 revealed that using the internet to copy and insert text into a paper without citation was the students' preferred method of cyber-plagiarism.

Research question 4 also revealed that respondents perceived cyber-plagiarism as a frequent practice among their peers even though respondents themselves almost never participated in cyber-plagiarism. Interpretation of research question 5 should consider the main limitations of this study. Depending on ethical orientation, many people may choose not to participate in a study intended to explore their unethical behavior. This may partially explain why only 437, or 2.85% of the 15,340 emails inviting students to participate in the study, resulted in completed surveys. Furthermore, as Allan (1998) pointed out, self-report may not reflect the true nature of dishonesty.

Taken together, research questions 4 and 5 clearly exposed a gap between students' perception of cyber-plagiarism among their peers and the actual frequency of self-reported cyber-plagiarism. In other words, the difference between respondents' perception of the prevalence of cyber-plagiarism among peers and their own rate of participation in cyber-plagiarism was very broad. The degree of separation between perception and reality in cyber-plagiarism would be a worthy topic for further research.

Recommendations for Action

Although it may seem evident, it is important to mention that socio-cultural realities of the 21st century, with an abundance of content for which the provenance is not easily determined, has altered the role of university libraries. With empirical evidence that cyber-plagiarism is prevalent among college students, librarians should perhaps focus not on the warehousing of books, but how to actively integrate library services into to the life of a modern student.

The suggested transformation of libraries into information commons will undoubtedly require a well-orchestrated approach that takes into consideration the ultimate beneficiaries of library services. University libraries should adopt new roles and services necessary for students' academic survival in the digital age. This includes portraying and marketing libraries as places where students go to improve their academic honesty skills. In fact, libraries in the digital age should embrace a menu of new roles, such as: (a) becoming a computer lab, (b) becoming an information literacy center, and (c) becoming a center for academic integrity. This approach should also include a required course on citation management in the established curriculum for all freshmen. In other words, libraries should become active not in assisting students locate information, but in helping students make ethical use of legacy and virtual collections that are

proliferating in this digital age. If the primary purpose of a library is to serve as an information repository, then librarians cannot ignore the responsibility to also guide users in proper access, citation, and use of content they make available.

Recommendations for Further Research

The researcher offers the following recommendations for future research:

1. This study should be extended to further evaluate the relationship between perception of cyber-plagiarism among their peers and the prevalence of cyber-plagiarism among respondents.
2. This is study should be replicated using a data collection instrument that includes a lie scale questionnaire.
3. This study should be extended to further examine differences in level of cyber-plagiarism across academic levels and genders, including male, female and transgender.
4. Further study is needed to determine the degree to which fear of failure is due to lack of academic confidence or other anxiety disorders.
5. Further research is needed to determine the degree of the relationship between cyber-plagiarism and impulse control disorder in the digital age.
6. Further research is needed to determine the degree of separation between perception and reality in cyber-plagiarism.

Closing Thoughts

This research exposed both gaps and consistencies in the existing literature concerning self-efficacy and cyber-plagiarism. Although the study found no empirical evidence to support the belief that students cyber-plagiarize because they lack the ability to synthesize, the study revealed that male freshmen had the lowest academic self-efficacy in general. The study also

revealed that male freshmen tend to engage in cyber-plagiarism more than other student groups. The study however, indicated that students do not perceive cyber-plagiarism as a socially acceptable practice at their universities. In fact, the findings indicated that students strongly believe in author's ownership in the digital age. The research also revealed that while respondents were aware of significant cyber-plagiarism among peers, they themselves almost never participated in such practices.

Universities' investments in cyber-plagiarism detection do not appear sufficient to curtail the prevalence of plagiarism in the digital age. Therefore, universities should consider realigning their resources in a way that allows for a better fit with real motives for why digital natives plagiarize. Based on the results of this study indicating that male freshman had the lowest self-efficacy and also tend to cyber-plagiarize more than other groups, universities should consider integrating cyber-plagiarism detection tools into the curriculum very early one. By making these technologies available to students not as a punitive measure, universities could be targeting the need for students to become both responsible digital citizens and digital scholars.

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Appendix A

Request to Modify Self-efficacy Instrument

On Mar 14, 2013, at 1:08 PM, T Simeon Ananou wrote:

Dear Dr. Hoover-Dempsey,

My name is Simeon Ananou, and I am currently pursuing a doctoral degree at Indiana University of Pennsylvania in Administration and Leadership Studies. The research for my dissertation is on self-efficacy and cyber-plagiarism. Fundamentally, my study will endeavor to answer "whether undergraduate students cyber-plagiarize because they are not confident in their abilities to synthesize?"

I came across your work "Hoover-Dempsey, K.V., & Sandler, H.M. (2005). Final Performance Report for OERI Grant # R305T010673: The Social Context of Parental Involvement: A Path to Enhanced Achievement. Presented to Project Monitor, Institute of Education Sciences, U.S. Department of Education, March 22, 2005" and I am seeking permission to modify your original survey instrument for the purposes of my dissertation research.

I thank you in advance for your help.

Kind Regards,
T. Simeon Ananou, Doctoral Candidate
402 Pueblo Trail
Mercer, PA 16137
(7240 556-9342
t.s.ananou@iup.edu

Appendix B

Permission to Modify Self-efficacy Instrument

From "Hoover-Dempsey, Kathleen V kathy.hoover-dempsey@Vanderbilt.Edu
Date: 03/15/13 05:18 PM
To: T Simeon Ananou t.s.ananou@iup.edu
Cc: "Hoover-Dempsey, Kathleen V <kathy.hoover-dempsey@Vanderbilt.Edu>
Dear Simeon,

It was good talking with you today.

I'm happy to give you permission to use the measures included in our original survey instrument, as included in our Final Performance Report to OERI (2005) that you've noted below. I also agree that you may modify the original instrument to meet the specific purposes and needs of your dissertation research. In using the instrument in original or modified form, we ask only that you cite the source of the instrument in any document or publication that results from your research.

I'm glad our instrument will be helpful to you, and all best wishes to you in this project!

Kathy Hoover-Dempsey

———

Kathleen V. Hoover-Dempsey, Ph.D.

Associate Professor

Department of Psychology & Human Development

Department of Teaching & Learning

230 Appleton Place, Peabody College Box #552

Vanderbilt University

Nashville, TN, 37203

email: kathleen.v.hoover-dempsey@vanderbilt.edu

research lab website (updating on-going, 2013;

model and all instruments currently available at:

http://www.vanderbilt.edu/peabody/family-school/)

phone: 615-343-4962

department phone: 615-322-8141; department fax: 615-343-9494

Appendix C

Request to Modify Cyber-plagiarism Survey Instrument

On Mar 11, 2013, at 11:46 AM, "T Simeon Ananou" <t.s.ananou@iup.edu> wrote:

Dear Drs. Scanlon and Neumann:

Dr. Neumann,

It was a pleasure speaking with you earlier with me this morning. As I mentioned during our phone conversation, my name is Simeon Ananou, and I am currently pursuing a doctoral degree at Indiana University of Pennsylvania in Administration and Leadership Studies. The research

for my dissertation is on self-efficacy and cyber-plagiarism. Fundamentally, my study will endeavor to answer "whether undergraduate students cyber-plagiarize because they are not confident in their abilities to synthesize?"

In the literature review on cyber-plagiarism, I came across your article titled "Internet Plagiarism among College Students" published in the Ascribe Higher Education News Service in 2002. The findings that were revealed in your article caught my attention and I am

seeking permission to modify your original survey instrument that was used in your study for the purposes of my dissertation research.

I thank you in advance for your help.

Kind Regards,

T. Simeon Ananou, Doctoral Candidate
402 Pueblo Trail
Mercer, PA 16137
724-556-9342
hcyq@iup.edu

Appendix D

Permission to Modify Cyber-plagiarism Survey Instrument

Patrick Scanlon pmsgsl@rit.edu
Date:03/11/13 02:15 PM
To: T Simeon Ananou t.s.ananou@iup.edu
Cc: David Neumann <dsngsl@rit.edu>

Hello Simeon,

This is perfectly fine with me. Do you need a copy of the original survey?

Sorry not to get back earlier; I was away for a couple weeks.

Pat

Pat Scanlon
Professor and Chairman
Department of Communication
Rochester Institute of Technology

Appendix E

Self-efficacy and Cyber-plagiarism Scale

Section 1 Demographic Information

INSTRUCTIONS: Please indicate your age, gender and academic level by circling the appropriate response

1. Age

   Select your age from the dropdown menu

2. Gender

   1 = Female 2 = Male

3. Academic Level

   1 = Freshman 2 = Sophomore 3 = Junior 4 = Senior

Section 2 Gauging Students' Academic Self-efficacy

INSTRUCTIONS: Please indicate your personal opinion about each statement by circling the appropriate response at the right of each statement.

KEY: 4=Strongly Agree 3= Agree 2= Disagree 1=Strongly Disagree

4. As a college student, I can do even the hardest assignment if I try. 1 2 3 4

5. As a college student, I can learn the things taught in class. 1 2 3 4

6. As a college student, I can figure out difficult assignment. 1 2 3 4

7. As a college student, I feel prepared to succeed at my academic level. 1 2 3 4

8. When I write a paper, I am concern about my ability to meet the professor's expectations. 1 2 3 4

Section 3 What is Undergraduate Students' perception of authorship in the digital age?

KEY: 4=Strongly Agree 3= Agree 2= Disagree 1=Strongly Disagree

9. It is wrong to hand in someone else's writing as one's own, without citation. 1 2 3 4

10. It is wrong to purchase from term paper mills and hand them in as one's own writing. 1 2 3 4

11. It is wrong to use the Internet to copy text and hand it in as one's own writing, without citation. 1 2 3 4

Section 4 To what degree is cyber-plagiarism socially acceptable?

KEY: 4=Strongly Agree 3= Agree 2= Disagree 1=Strongly Disagree

12. It is clear that my professors feel it is wrong for students to use the Internet to copy text and hand it in as their own writing, without citation. 1 2 3 4

13. It is clear that my professors feel it is wrong for students to hand in someone else's writing as their own, without citation. 1 2 3 4

14. It is clear my professors feel it is wrong for students to purchase papers from term paper mills and hand them in as their own writing. 1 2 3 4

15. At my college there are strict punishments for using the Internet to copy text and hand it in as one's own writing, without citation. 1 2 3 4

16. At my college there are strict punishments for handing in someone else's writing as one's own, without citation. 1 2 3 4

Section 5What is college students 'perception of the prevalence of cyber-plagiarism among their peers?

KEY: 4=Very Frequently 3=Frequently 2= Rarely 1=Never

17. How often do you think students use the Internet to copy text and insert it in a paper as their own writing, without citation (for example, footnotes)? 1 2 3 4

18. How often do you think students use the Internet to copy an entire paper and hand it in as their own writing, without citation? 1 2 3 4

19. How often do you think students use the Internet - for example, Social media or Email - to ask someone to provide them with a paper to hand in as their own writing? 1 2 3 4

20. How often do you think students use the Internet to purchase

papers from on-line term paper mills and hand them in as their

own writing? 1 2 3 4

Section 6 How pervasive is cyber-plagiarism among undergraduate college students

KEY: 4=Very Frequently 3=Frequently 2= Rarely 1=Never

21. How often do you use the Internet to copy text and insert it in a paper as your own writing, without citation (for example, footnotes)? 1 2 3 4

22. How often do you use the Internet to copy an entire paper and hand it in as your own writing, without citation? 1 2 3 4

23. How often do you use the Internet - for example, social media or Email - to ask someone to provide you with a paper to hand in as your own writing? 1 2 3 4

24. How often do you purchase papers from print publication term paper mills and hand them in as your own writings? 1 2 3 4

25. How often do you use the Internet to purchase papers from on-line term paper mills and hand them in as your own writing? 1 2 3 4

Note. 1. Questions 4 thru 7 were obtained with permission from (Hoover-Dempsey & Sandler, 2005). 2. Questions 9 thru 25 were obtained with permission from (Scanlon & Neumann, 2002) and reproduced from (Walter, 2008).

Appendix F

Layout of Survey Questions

Survey Question #	**Survey Question**	**Research Question**
1	Age	Demographic
2	Gender	
3	Academic Level	
4	As a college student, I can do even the hardest assignment if I try.	Research Question #1: To what degree there is a significant relationship between self-efficacy and cyber-plagiarism among undergraduate students? and Research Question #5: To what degree is cyber-plagiarism a prevalent practice among undergraduate college students?
5	As a college student, I can learn the things taught in class.	
6	As a college student, I can figure out difficult assignment.	
7	As a college student, I feel prepared to succeed at my academic level.	
8	When I write a paper, I am concern about my ability to meet the professor's expectations.	
9	It is wrong to hand in someone else's writing as one's own, without citation	Research Question # 2: What is undergraduate college students' perception of authors'
10	It is wrong to purchase from term paper mills	

	and hand them in as one's own writing.	ownership in the digital age?
11	It is wrong to use the Internet to copy text and hand it in as one's own writing, without citation	
12	It is clear that my professors feel it is wrong for students to use the Internet to copy text and hand it in as their own writing, without citation.	Research Question #3 What is undergraduate students' perception of the social acceptability of academic dishonesty in the digital age?
13	It is clear that my professors feel it is wrong for students to hand in someone else's writing as their own, without citation.	
14	It is clear my professors feel it is wrong for students to purchase papers from term paper mills and hand them in as their own writing.	
15	At my college there are strict punishments for using the Internet to copy text and hand it in as one's own writing, without citation.	
16	At my college there are strict punishments for handing in someone else's writing as one's own, without citation.	
17	How often do you think students use the Internet to copy text and insert it in a paper as their own writing, without citation (for example,	Research Question #4: What is undergraduate college students' perception of the

	footnotes)?	prevalence of cyber-plagiarism among their peers?
18	How often do you think students use the Internet to copy an entire paper and hand it in as their own writing, without citation?	
19	How often do you think students use the Internet - for example, Social media or Email - to ask someone to provide them with a paper to hand in as their own writing?	
20	How often do you think students use the Internet to purchase papers from on-line term paper mills and hand them in as their own writing?	

21	How often do you use the Internet to copy text and insert it in a paper as your own writing, without citation (for example, footnotes)?	
22	How often do you use the Internet to copy an entire paper and hand it in as your own writing, without citation?	
23	How often do you use the Internet - for example, social media or Email - to ask someone to provide you with a paper to hand in as your own writing?	Research Question #1: To what is the significance of the relationship between self-efficacy and cyber-plagiarism among undergraduate students? and Research Question #5: To what degree is cyber-plagiarism a prevalent practice among undergraduate college students?
24	How often do you purchase papers from print publication term paper mills and hand them in as your own writings?	
25	How often do you use the Internet to purchase papers from on-line term paper mills and hand them in as your own writing?	

Note. 1. Questions 4 thru 7 were obtained with permission from (Hoover-Dempsey & Sandler, 2005). 2. Questions 9 thru 25 were obtained with permission from (Scanlon & Neumann, 2002) and reproduced from (Walter, 2008).

Appendix G

Permission to Survey PASSHE Students

From: T Simeon Ananou <t.s.ananou@iup.edu>
To:pgarland@passhe.edu
Date: 03/15/13 05:52 AM
Chancellor Garland,

I am writing to seek permission to gain access to the email addresses for all PASSHE baccalaureate-seeking students for my dissertation research. I greatly appreciate any assistance you can offer.

I am a member of Cohort 12 in the Administration and Leadership Studies Ed.D. program at IUP. I successfully defended my dissertation proposal on February 21st, and I am now engaged in the final preparations necessary to conduct my research. My study focuses on possible correlations between academic self-efficacy and cyber-plagiarism among undergraduate students. I choose to look at these possible relationships because two of my areas of research interests are: authorship in the digital age and self-efficacy theory.

My intent is to invite, via email, all baccalaureate-seeking students of PASSHE who are 18 years and older to participate by completing an online survey developed using Qualtrics. The survey consists of adapted sections from academic self-efficacy scale (Hoover-Dempsey & Sandler, 2005) and adapted sections from the Internet Plagiarism Survey (Scanlon & Neumann, 2002) to collect data regarding students' confidence in their academic abilities and students' perception of authorship in the digital age. I intend to distribute the survey in June of 2013, though I can push that a bit later if necessary.

Ideally, I need access to email addresses for all PASSHE baccalaureate-seeking students. While it would not be impossible to distribute the survey using distribution lists, having the actual addresses would allow me to configure Qualtrics to send reminder notices (two) only to those who would not have responded by a certain date. The Qualtrics Survey mailer will anonymize all survey responses and will automatically handle the reminder emails, anonymously as well. All data obtained from participants will be kept confidential and will only be reported in an aggregate format.

In order to proceed, I need to identify who can grant me permission to survey the PASSHE students at each institution and who can give me access to the email addresses, or otherwise, distribution lists. I am also seeking a letter (an email will suffice) noting that I've been granted permission to do this, which will be submitted to the IUP IRB as part of my IRB protocol. My protocol is otherwise complete and has been approved by my dissertation committee (Dr. George Bieger is my chair) and will be submitted as soon as I can obtain and document permission to distribute the survey.

I would most gratefully appreciate and accept any help you might be able to offer me in moving forward with my research. Please feel free to contact me if there is any additional information that you require.

Thank you again for offering to help!

T. Simeon Ananou
402 Pueblo Trail
Mercer, PA 16137
t.s.ananou@iup.edu

Appendix H

Invitation to Students to Participate in the Study

Dear PASSHE Student:

You are invited to participate in a study being conducted by Mr. T. Simeon Ananou under the supervision of Dr. George Bieger of the Administration and Leadership studies Program at Indiana University of Pennsylvania.

The online survey should take approximately 10 minutes to complete and will ask a series of questions focused on students' use of the internet to complete written assignments.

Your participation in this survey is voluntary. Indiana University of Pennsylvania respects the protection of participants in research studies. The study has been approved by the IUP Institutional Review Board for the protection of Human Subjects (phone: 724-357-7730, email: irb-research@iup.edu). There is no discomfort or risks involved in participating in this study. If you choose to participate, all information will be held in strict confidence and your identity will be kept strictly confidential at all times. You response will be considered only in combination with those from other participants.

If you are willing to participate in this study, please follow this link to the survey**:** https://iup.qualtrics.com/SE/?SID=SV_eljshwHqkzlTKFT. Or copy and paste the URL below into your internet browser: https://iup.qualtrics.com/SE/?SID=SV_eljshwHqkzlTKFT.

As a student, I understand how busy you are, so I thank you in advance for participating in this important study. If you have any questions or would like additional information, please contact either of the individuals below. If you would like to see the results of the study once completed, please contact me at hcyq@iup.edu and I would be happy to make them available to you.

Sincerely,

T. Simeon Ananou, Doctoral Candidate

5679 Kingsmill Drive

Salisbury, MD 2181

(724)-556-9342

hycq@iup.edu

Dissertation Advisor :

George R. Bieger, Ph.D.

Professor

Professional Studies in Education Department

114 Davis Hall, IUP

570 S. 11th Street, Indiana, PA 15705

email: grbieger@iup.edu

Phone: 724.357.3285

Fax: 724.357.2961

You may receive an occasional reminder email about taking this survey over the next few weeks. You can opt out of these emails by completing the survey or by clicking the opt-out link below to unsubscribe and opt out of future emails:

Link: [http:://qualtrics/OptOutLink?d=Click here to unsubscribe]

Appendix I

Informed Consent

I am a doctoral candidate in Administration and Leadership Studies at Indiana University of Pennsylvania and I'm writing to ask for your assistance with my doctoral research. The purpose of my research is to advance our understanding of why undergraduate students may choose to copy text from the internet and paste into their written assignment and present it as their own work.

You are invited to take an online survey as part of this research. The survey takes about 7 to 10 minutes to complete. It is entirely anonymous and your participation is completely voluntary. Your responses will be added to those of other participants and analyzed together.

Although I'm asking for participation from undergraduate students of Pennsylvania State System of Higher Education (PASSHE), this study is not related to PASSHE and has absolutely no effect on your grade or your academic career. This study is entirely my independent doctoral dissertation research.

There are no risks to participating in this study and, although there are no benefits or compensation, you will be contributing to advancing our understanding of why undergraduate students may choose to copy text from the internet and paste into their written assignment and present it as their own work.

If you are younger than 18 years old, please close this window and don't participle in the survey. If you 18 of years and older, and are willing to participate in the survey, please click on the "agree" button to proceed to the actual server questions.

If you start to complete the survey but decide that you want to stop participating, you are free to quit at any point during the survey by simply closing your internet browser window before completing the survey. We'll discard responses to incomplete surveys.

If you have any questions regarding this study, please contact me or the faculty sponsor using the information provided below.

This project has been approved by the Indiana University of Pennsylvania Institutional Review Board for the Protection of Human Subjects (Phone: 724/357-7730).

Thank you for your consideration,

Simeon Ananou
Doctoral Student
t.s.ananou@iup.edu
724-556-9342

Dr. George Bieger, Faculty Sponsor
Professor of Education Sociology

grbieger@iup.edu

Appendix J

Image of Qualtrics Survey

Self-efficacy and Cyber-plagiarism Scale

INFORMED CONSENT

I am a doctoral candidate in Administration and Leadership Studies at Indiana University of Pennsylvania and I'm writing to ask for your assistance with my doctoral research. The purpose of my research is to advance our understanding of why undergraduate students may choose to copy text from the internet and paste into their written assignment and present it as their own work.

You are invited to take an online survey as part of this research. The survey takes about 7 to10 minutes to complete. It is entirely anonymous and your participation is completely voluntary. Your responses will be added to those of other participants and analyzed together.

Although I'm asking for participation from undergraduate students of the Pennsylvania State System of Higher Education (PASSHE), this study is not related to PASSHE and has absolutely no effect on your grade or your academic career. This study is entirely my independent doctoral dissertation research.

There are very minimal risks to participating in this study and, although there are no benefits or compensation, you will be contributing to advancing our understanding of why undergraduate students may choose to copy text from the internet and paste into their written assignment and present it as their own work.

If you are younger than 18 years old, please close this window and don't participate in the survey. If you are 18 years or older, and are willing to participate in the survey, please click on the "agree" button to proceed to the actual survey questions.

If you start to complete the survey but decide that you want to stop participating, you are free to quit at any point during the survey by simply closing your internet browser window before completing the survey. We'll discard responses to incomplete surveys.

If you have any questions regarding this study, please contact me or the faculty sponsor using the information provided below.

This project has been approved by the Indiana University of Pennsylvania Institutional Review Board for the Protection of Human Subjects (Phone: 724/357-7730).

Thank you for your consideration,

Simeon Ananou
5679 Kingsmill Drive

Salisbury. MD 21801
email: t.s.ananou@iup.edu

Phone: 724-556-9342

Dissertation Advisor :
George R. Bieger, Ph.D.
Professor
Professional Studies in Education Department
114 Davis Hall, IUP
570 S. 11th Street, Indiana, PA 15705
email: grbieger@iup.edu

Phone: 724.357.3285
Fax: 724.357.2961

Agree ○ **Disagree** ○

Please indicate your age

Below 18 ○ Between 18 and 20 ○ Between 21 and 23 ○ 24 or older ○

Please indicate your gender

Female ○ Male ○

Please indicate your academic class level

Freshman ○ Sophomore ○ Junior ○ Senior ○

Section 2

Instructions: Please indicate your personal opinion about each statement by selecting the appropriate response at the right of each statement.

	Strongly Agree	Agree	Disagree	Strongly Disagree
4. As a college student, I can do even the hardest assignment if I try.	○	○	○	○
5. As a college student, I can learn the things taught in class.	○	○	○	○

6. As a college student, I can figure out difficult assignments.	○	○	○	○
7. As a college student, I feel prepared to succeed at my academic level.	○	○	○	○
8. When I write a paper, I am concerned about my ability to meet the professor's expectations.	○	○	○	○

Section 3

Instructions: Please indicate your personal opinion about each statement by selecting the appropriate response at the right of each statement.

	Strongly Agree	Agree	Disagree	Strongly Disagree
9. It is wrong to hand in someone else's writing as one's own, without citation.	○	○	○	○
10. It is wrong to purchase from term paper mills and hand them in as one's own writing.	○	○	○	○
11. It is wrong to use the Internet to copy text and hand it in as one's own writing, without citation.	○	○	○	○

Section 4

Instructions: Please indicate your personal opinion about each statement by selecting the appropriate response at the right of each statement.

	Strongly Agree	Agree	Disagree	Strongly Disagree
12. It is clear that my professors feel it is wrong for students to use the Internet to copy text and hand it in as their own writing, without citation.	○	○	○	○
13. It is clear that my professors feel it is wrong for students to hand in someone else's writing as their own, without citation.	○	○	○	○
14. It is clear my professors feel it is wrong for students to purchase papers from term paper mills and hand them in as their own writing.	○	○	○	○
15. At my college there are strict punishments for using the Internet to copy text and hand it in as one's own writing, without citation.	○	○	○	○
16. At my college there are strict punishments for handing in someone else's writing as one's own, without citation.	○	○	○	○

Section 5

Instructions: Please indicate your personal opinion about each statement by selecting the appropriate response at the right of each statement.

	Very Frequently	Frequently	Rarely	Never

17. How often do you think students use the Internet to copy text and insert it in a paper as their own writing, without citation (for example, footnotes)?	○	○	○	○
18. How often do you think students use the Internet to copy an entire paper and hand it in as their own writing, without citation?	○	○	○	○
19. How often do you think students use the Internet - for example, social media or Email - to ask someone to provide them with a paper to hand in as their own writing?	○	○	○	○
20. How often do you think students use the Internet to purchase papers from on-line term paper mills and hand them in as their own writing?	○	○	○	○

Section 6

Instructions: Please indicate your personal opinion about each statement by selecting the appropriate response at the right of each statement.

	Very Frequently	Frequently	Rarely	Never
21. How often do you use the Internet to copy text and insert it in a paper as your own writing, without citation (for example, footnotes)?	○	○	○	○
22. How often do you use the Internet to copy an entire paper and hand it in as your own writing, without citation?	○	○	○	○
23. How often do you use the Internet - for example, social media or Email - to ask someone to provide you with a paper to hand in as your own writing?	○	○	○	○
24. How often do you purchase papers from print publication term paper mills and hand them in as your own writings?	○	○	○	○
25. How often do you use the Internet to purchase papers from on-line term paper mills and hand them in as your own writing?	○	○	○	○

Note. 1. Questions 4 thru 7 were obtained with permission from (Hoover-Dempsey & Sandler, 2005). 2. Questions 9 thru 25 were obtained with permission from (Scanlon & Neumann, 2002) and reproduced from (Walter, 2008).

Appendix K

IRB Approval From IUP

Indiana University of Pennsylvania
www.iup.edu

Institutional Review Board for the
Protection of Human Subjects
School of Graduate Studies and Research
Stright Hall, Room 113
210 South Tenth Street
Indiana, Pennsylvania 15705-1048

P 724-357-7730
F 724-357-2715
irb-research@iup.edu
www.iup.edu/irb

August 30, 2013

T. Simeon Ananou
402 Pueblo Trail
Mercer, PA 16137

Dear Mr. Ananou:

Your proposed research project, "Academic Honesty in the Digital Age," (Log No. 13-122) has been reviewed by the IRB and is approved as an expedited review for the period of August 30, 2013 to August 30, 2014.

It is also important for you to note that IUP adheres strictly to Federal Policy that requires you to notify the IRB promptly regarding:

1. any additions or changes in procedures you might wish for your study (additions or changes must be approved by the IRB before they are implemented),
2. any events that affect the safety or well-being of subjects, and
3. any modifications of your study or other responses that are necessitated by any events reported in (2).

Should you need to continue your research beyond August 30, 2014 you will need to file additional information for continuing review. Please contact the IRB office at (724) 357-7730 or come to Room 113, Stright Hall for further information.

Although your human subjects review process is complete, the School of Graduate Studies and Research requires submission and approval of a Research Topic Approval Form (RTAF) before you can begin your research. If you have not yet submitted your RTAF, the form can be found at http://www.iup.edu/page.aspx?id=91683 .

This letter indicates the IRB's approval of your protocol. IRB approval does not supersede or obviate compliance with any other University policies, including, but not limited to, policies regarding program enrollment, topic approval, and conduct of university-affiliated activities.

I wish you success as you pursue this important endeavor.

Sincerely,

John A. Mills, Ph.D., ABPP
Chairperson, Institutional Review Board for the Protection of Human Subjects
Professor of Psychology

JAM:jeb

Cc: Dr. George Bieger, Dissertation Advisor
Ms. Brenda Boal, Secretary

Appendix L

IRB Approval From Kutztown

October 21, 2013

T. Simeon Ananou,

Your request to conduct the research project titled "Academic Honesty in the Digital Age" on our campus has been reviewed. Kutztown University accepts the expedited review approval granted by Indiana University of Pennsylvania and grants you permission to collect data at Kutztown University. The research is approved for the period expressed in the original approval from Indiana University of Pennsylvania.

Please note that Kutztown University expects you to comply with all IRB policies and procedures; applicable federal, state and local laws; and the ethical principles of your profession.
You must notify the Kutztown University IRB promptly if you wish to make any revisions or changes to your study, and if there are any adverse events or unanticipated problems. Should you need to continue your data collection beyond the approval period stated above, you must submit a written request.

If you have any questions, please contact me via email (werner@kutztown.edu) or phone (484-646-4167).

Sincerely,

Jeffrey Werner
Director, Grants & Sponsored Projects

P.O. Box 730, Kutztown, PA 19530-0730 • Phone: 610-683-4000 / TDD: 610-683-4499 • www.kutztown.edu/

Appendix M

IRB Approval From Clarion

Department of Library Science
209 Carlson Library
Clarion University
Clarion, PA 16214

(814) 393-2271

September 27, 2013

RE: Application for access to Clarion campus for research study of Mr. Simon Ananou

I have reviewed the IRB approval from Indiana University of PA for the expedited study "Academic Honesty in the Digital Age," (Log #13-122). According to IRB policies at Clarion, I reviewed the application and decision from IUP, which is recognized as the lead IRB institution for the study. I agreed with their decision to approve the research study, therefore the study is recognized and approved through our IRB for human subjects research at Clarion.

IRB approval does not guarantee access to Clarion data. Permission for access to the campus and archived data for your study should be sought directly with Dr. John Groves at the Office of the Provost at Clarion University. Please use the attached form to request access to campus.

Rhonda L. Clark, MA, MLIS, Ph.D.
Assistant Professor of Library Science
Chair, Clarion University IRB

Appendix N

Permission to Contact Students at Clarion

Office of the Provost

Clarion University of Pennsylvania
840 Wood Street
Clarion, Pennsylvania 16214-1232
Phone: 814-393-2223
Fax: 814-393-2039
Text Telephone (TTY/TDD): 814-393-1601

October 16, 2013

Mr. T. Simeon Ananou
402 Pueblo trail
Mercer, PA 16137

Dear Mr. Ananou,

Thank you for providing the requested information indicating that the IRB Committee at Indiana University of Pennsylvania has approved your study. Dr. Clark has confirmed your completion of procedures for our purposes. You have permission to conduct your online survey.

I extend my best wishes for a successful conclusion to your study. If you need further assistance, please contact either Dr. Clark or me.

Regards,

John T. Groves, Ph. D.
Dir. Research, Retention and Academic Programs

Cc Dr. Clark
Mr. Moneta
Ms. Wenner

Appendix O

IRB Approval From Slippery Rock

SlipperyRock University

William Ryan, Ph.D., R.N.
Chairperson, Institutional Review Board
IRB Office

008 Patterson Hall
Slippery Rock, PA 16057-1326
724.738.4846
724.738.4857 Fax
irb@sru.edu

TO: Mr. T. Simeon Ananou
402 Pueblo Trail
Mercer, PA 16137

FROM: William Ryan
William Ryan, Ph.D., R.N., Chairperson
Institutional Review Board (IRB)
Slippery Rock University

DATE: September 17, 2013

RE: Protocol Title: Academic Honesty in the Digital Age (Log No. 13-122)

The Institutional Review Board (IRB) of Slippery Rock University accepts the approval of the IRB at Indiana University of Pennsylvania for the study titled, Academic Honesty in the Digital Age (Log No. 13-122).

The investigator may proceed with the study as described in the methods. If there are changes to the protocol, or reportable events, the principal investigator must inform the SRU IRB.

IRB approval does not guarantee access to Slippery Rock University's data or personnel. Permission for access to the campus for your study should be sought directly with the Office of the Provost.

Please contact the IRB Office by phone at (724)738-4846 or via e-mail at irb@sru.edu should your protocol change in any way.