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STUDENT PLAGIARISM AND THE USE OF A PLAGIARISM DETECTION TOOL  
BY COMMUNITY COLLEGE FACULTY

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## ABSTRACT

This study sought to better inform community college administrators and faculty regarding possible factors that contribute to higher levels of student plagiarism and to suggest appropriate preventative or responsive interventions. The specific purpose of the study was to investigate a set of faculty related factors that may be associated with particular levels of plagiarism. The specific research questions were as follows:

1. Are there particular instructor related factors that are associated with the level of suggestive plagiarism that occurs in the community college classroom?
2. Is there a difference in suggestive plagiarism based upon the campus on which the faculty member teaches?
3. How do faculty who use TII think about plagiarism and their role in educating students on how to properly cite works and avoid it?

The quantitative portion of this mix-methods study found no statistical significance between the dependent variable of suggestive plagiarism and the independent variables of class level, instructor age, instructor gender, instructor employment status (full-time or part-time), years since hire, academic division and campus. The qualitative portion of the study interviewed nine faculty users of TII and revealed several convergent and divergent themes. The convergent themes were plagiarism due to ignorance vs. intentionality, lack of student objections to the use of TII, lack of faculty difficulty using TII, impact on teaching strategies, and replacement of TII with an alternative tool. The two divergent themes were faculty experience with training in the

use of TII and the extent to which faculty sought to teach their students about plagiarism. The study offers implications for practice and policy as well as limitations and opportunities for future research.

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## TABLE OF CONTENTS

<b>COMMITTEE MEMBERS</b> .....	ii
<b>ABSTRACT</b> .....	iii
<b>ACKNOWLEDGMENTS</b> .....	v
<b>INTRODUCTION</b> .....	1
<b>Plagiarism Defined</b> .....	2
<b>Problem Statement</b> .....	4
<b>Purpose of the Study</b> .....	7
<b>Significance of the Study</b> .....	8
<b>LITERATURE REVIEW</b> .....	9
<b>Plagiarism Defined</b> .....	9
<b>A History of Plagiarism</b> .....	11
<b>Plagiarism in the Internet Age</b> .....	13
<b>Overview of Plagiarism Research</b> .....	14
<b>The TII Tool</b> .....	24
<b>Summary</b> .....	27
<b>METHODOLOGY</b> .....	28
<b>Design of the Study</b> .....	29
<b>Population and Sample</b> .....	29
<b>Description of Midwestern Community College</b> .....	30

<b>Scope of the Study</b> .....	30
<b>Variables</b> .....	31
<b>Procedures</b> .....	36
<b>Qualitative Study</b> .....	38
<b>Analysis of Interviews</b> .....	39
<b>Researcher Perspective</b> .....	39
<b>ANALYSIS OF DATA AND FINDINGS</b> .....	41
<b>Subjects and Study Design</b> .....	41
<b>Changes to the Study Design</b> .....	42
<b>Data Analysis</b> .....	44
<b>Descriptive Results</b> .....	44
<b>Regression Results</b> .....	45
<b>Qualitative Results</b> .....	48
<b>Convergent Themes</b> .....	51
<b>Summary</b> .....	64
<b>CONCLUSIONS AND RECOMMENDATIONS</b> .....	65
<b>Discussion of Study Results</b> .....	65
<b>Implications for Practice and Institutional Policy</b> .....	78
<b>Study Limitations and Opportunities for Future Research</b> .....	84
<b>Conclusion</b> .....	86
<b>REFERENCES</b> .....	88
<b>APPENDIX A: INTERVIEW QUESTIONS</b> .....	96

**LIST OF TABLES**

Table 1 <i>Descriptive Results</i> .....	45
Table 2 <i>Correlation Matrix</i> .....	46
Table 3 <i>Model Summary</i> .....	47
Table 4 <i>Model Coefficients</i> .....	47

## CHAPTER 1

### INTRODUCTION

During his December 2003 University of Missouri – Kansas City commencement address, Dean Bryan F. Le Beau commented that “no culture and no civilization and no society has ever had a monopoly on wisdom or virtue” (Bartlett, 2005, A13). Unfortunately for Le Beau, those same words were part of a speech given a decade earlier by Professor Cornel West (Bartlett, 2005; Carnevale, 2005). Le Beau’s speech made no reference to West as the originator of the aforementioned phrase. The resulting scandal made headlines in the *Chronicle of Higher Education* and other prominent publications. More recently, the *Chronicle of Higher Education* (Wasley, 2006) reported that President Scott Miller of Wesley College barely survived a vote of no confidence by his faculty after a Duke University student found striking similarities in a speech Miller gave and one delivered by the president of Connecticut College.

Student cases of plagiarism have made the headlines as well. Consider a case at the University of Virginia where Professor Lou Bloomfield created a computer program to check for matching phrases in student papers submitted in his introductory physics classes. His computer program identified 158 papers with questionable content. Over the course of a nearly two year long investigation by the student-run Honor Committee, 48 students were found to have committed plagiarism (U. Va. Plagiarism scandal, 2002).

In the summer of 2006, both the *Chronicle of Higher Education* and the *Wall Street Journal* reported on what appeared to be a widespread plagiarism scandal at Ohio University's Russ College of Engineering and Technology (Tomsho, 2006; Wasley, 2006). In this instance, dozens of engineering graduate students may have plagiarized the literature review chapters of their theses (Tomsho, 2006). Several members of the engineering school's faculty were under a cloud of suspicion and faced discipline and possible termination for poor oversight.

Incidents of academic dishonesty are not limited to administrators and students, however. A study by Dean (2005) in which 1,500 scientists were surveyed found that more than 15% of the study sample indicated that "they had changed the design, methods, or results of a research study to suit a sponsor" (p. F6). Almost as many of these scientists confessed to using "inaccurate or inappropriate research designs." (Dean, 2005, p. F6). Even high profile faculty stars and journalists have come under scrutiny as evidenced by accusations against historian Stephen Ambrose and *New York Times* reporter Jayson Blair for their inappropriate use of others' work, or in the case of Blair, for fabricating aspects of his stories (*New York Times*, 2003).

In short, there are numerous students and faculty as well as administrators and journalists who have played fast and loose with ownership of another author's expression or have misrepresented their own writing in some fashion. These cases of popular writers committing plagiarism sends a message to the general population and to students specifically that it is at least not uncommon for writers to plagiarize (Snodgrass & Bevevino, 2005).

### **Plagiarism Defined**

Plagiarism, and the larger issue of ownership of the written word, is not as easy to define as it might first appear. Many writers on the topic of plagiarism and academic honesty have

attempted to define the term. One such example comes from the Council of Writing Program Administrators, who define plagiarism as, “In an instructional setting, plagiarism occurs when a writer deliberately uses someone else’s language, ideas, or other original (not common-knowledge) material without acknowledging its source” (Council of Writing Program Administrators, 2003, p. 2).

This definition permits use of another’s language or ideas as long as the original source is acknowledged in an appropriate manner. In addition, this definition limits itself to an *instructional setting*. Presumably, then, this includes academe but does not include the broader society at large. How broadly one defines an *instructional setting* is not clear, however. Nevertheless, writing assignments given to students by their teachers seem to clearly fall within the definition, as do scholarly papers written by university faculty. It is less clear if this definition includes the author of a work of fiction.

Also, this definition does not distinguish between the student who inadvertently fails to include a single citation in a research paper and the student who purposefully buys a paper from an internet service. It seems self-evident that a distinction should be made between these two all-too-common incidents.

The *Concise Oxford English Dictionary* (Pearsall, 2002) defines the verb to plagiarize as to “take (the work or an idea of someone else) and pass it off as one’s own” (p. 1,092). This broader definition expands beyond the boundaries of academe and into the context of the larger world of ideas and their expression.

It is interesting to note that the *Online Etymology Dictionary* describes the origins of the word plagiarism as coming from the Latin *plagiarius* meaning “kidnapper, seducer, plunderer”

(Harper, 2001). It seems then that someone who plagiarizes kidnaps or plunders another's words or ideas, claiming them to be his own.

### **Problem Statement**

Plagiarism is a growing problem in academia (Council of Writing Program Administrators, 2003; Hansen, 2003; Lathrop & Foss, 2000; Park, 2003; Wilcox, 2005b). Finding ways to identify plagiarism and developing methods to combat it are central to maintaining the intellectual integrity of the university. Plagiarism can and often does violate society's sense of fair play and justice as well as the norms of academic scholarship. It undermines the integrity of our colleges and universities. Finally, investigating and addressing plagiarism unnecessarily diverts valuable faculty and staff time and resources investigating and prosecuting plagiarism. Arguably plagiarism is under investigated either out of naiveté as to what it is, how to differentiate the intentional from the inadvertent, or simply because of the perceived impact on the time needed to pursue other important institutional activities.

One particular phenomenon that has heightened plagiarism concerns has been the rise of the Internet. Pre-Internet plagiarism required the writer to retype text from printed books or articles, a sometimes labor intensive task. Today, text can easily be copied and pasted in a matter of seconds from the Internet. While access to information in new and greatly expanded ways via electronic media has certainly been a positive development, it nevertheless creates the impression that information is free and ideas without owners. The very idea of the Internet, a mechanism for free and easy access to information, creates the impression that one may lift others' ideas without attribution simply because it can be done with ease. It is this ease that is at the heart of many incidents of plagiarism (Wilcox, 2005a).

Today's traditional aged college students were born and raised with the internet and other electronic communication technologies. They have always used the internet as a primary means of communication and information gathering. As such, it has become quite easy to integrate internet-located information and material to incorporate into class papers and writing assignments. With the development of major efforts by Google and others to digitize leading academic libraries and to scan and make books available electronically and not just in printed form, it is likely that easy access to information will continue to rise and with it the opportunities for students to plagiarize.

There is also some evidence that our public school systems are not effectively addressing the need to educate students in the proper manner of citing information (Hansen, 2003). Plagiarism is becoming a very significant problem for high school writing teachers (Noskin, 2005). Many graduates from our nation's public school systems are often poorly equipped to navigate the expectations of academe when it comes to attributing others' ideas and expressions. These new college students are untrained in common practices and methods of citing sources in their written work or even worse, do not believe it to be necessary.

There is a fairly sizable body of research that has explored issues of student cheating in general (Bichlet & Tibbetts, 2003; Davis, Grover, Becker, & McGregor 1992; McCabe, Trevino, & Butterfield, 2001; Roig & Ballew, 1994; Spiller & Crown, 1995; Whitley, 1998) and plagiarism in particular (Bennett, 2005; Giorgio, 2005; Humes, Stiffler, & Malsed, 2003; Kock & Davison, 2003; Park, 2003). However, much of the research has relied on self-report studies in which students are asked the degree to which they cheat or plagiarize (Whitley, 1998). Studies of socially unacceptable behaviors such as plagiarism are ripe for bias in subject response. Specifically, subjects often under report the true extent of their cheating or plagiarism behaviors.

Presumably this is done either out of fear of negative consequences for disclosing it or as a means of downplaying in their own minds how problematic it is (Cook & Campbell, 1979). In addition self-reporting is subject to simple forgetfulness as the human memory is not perfect (Schacter, 1999).

Also, very little research has been done on the impact faculty related factors may have on student plagiarism. While the existing body of literature may provide us some understanding of the relationship of college major (Bernardi, Metzger, Scofield Bruno, & Hoogkamp, 2004) student success expectations (Whitley, 1998) or student age (Whitley, 1998) to student plagiarism, the research literature is essentially silent on the impact of faculty related factors on student plagiarism.

In the last few years, a new tool has been developed for plagiarism detection that takes advantage of the very characteristics of the Internet that lead to a heightened potential for plagiarism. The tool is called TurnItIn™ (TII). Developed by a team of researchers at the University of California - Berkeley in 1996 for detecting the use of recycled research papers, today it has developed into the world's premier tool for comparing student papers against the vast array of information available on the Internet or their own large database of material. To date, research using this new tool as a means of studying the plagiarism phenomena has just begun to emerge. Furthermore, its incorporation into research studies is valuable since it does not rely on student self-reports of their behaviors but rather measures their actual plagiarism activity via analyses of their submitted papers (albeit without the ability to differentiate the intentional and nefarious from the inadvertent or ignorant on proper citation techniques).

Because the tool has only recently come into widespread use and given the fact that the database of comparable information only very recently has become quite extensive, there

remains a critical gap in knowledge about plagiarism as measured in this new way. This is especially true for community colleges where there appears to be little or no research on using TII, despite the fact that community colleges educate over a third of the national student body at any one time (National Center for Education Statistics [NCES], 2008). Furthermore, little is known about particular course or instructor characteristics that may prove predictive of the extent of student plagiarism. Thus, efforts to combat the problem of plagiarism lack the ability to draw upon empirical data to inform classroom and institutional policy and practice reforms and instead must rely only on gut beliefs or hearsay.

### **Purpose of the Study**

This study sought to better inform community college administrators and faculty regarding possible factors that contribute to higher levels of student plagiarism and to suggest appropriate preventative or responsive interventions. The specific purpose of the study was to investigate a set of faculty related factors that may be associated with particular levels of suggestive plagiarism. Suggestive plagiarism is an intentionally chosen term to capture the fact that TII reports on submitted papers only and that may, but not necessarily, infer actual plagiarism. It does not assess a student's intent or ignorance of the rules of source attribution. This reality of the tool is discussed at greater length later in this study. The specific research questions were as follows:

1. Are there particular instructor related factors that are associated with the level of suggestive plagiarism that occurs in the community college classroom?
2. Is there a difference in suggestive plagiarism based upon the campus on which the faculty member teaches?

3. How do faculty who use TII think about plagiarism and their role in educating students on how to properly cite works and avoid it?

### **Significance of the Study**

This study is significant for several reasons. First and foremost, it is important because of the way in which plagiarism is operationalized. Using the originality report from TII provides a new and different means of looking at the behavior of plagiarism. Past studies in this area have relied on student self-reports as a means of measuring plagiarism.

Second, as many authors have remarked, plagiarism is a current and growing problem. Finding ways to better understand plagiarism and the circumstances in which it thrives is vital to faculty and administrators seeking to maintain the highest levels of academic integrity by identifying and preventing plagiarism.

Third, most research in the area of plagiarism has centered on students enrolled at four-year universities. Considering the large numbers of students who attend the nation's community colleges, better understanding the plagiarism behaviors of these students could provide broad reaching implications for faculty and administrators across the higher education spectrum.

Finally, this study focuses on faculty related factors. Most existing research has focused on the impact of student related factors and plagiarism. Gaining a better understanding of faculty related factors and their relationship to plagiarism may assist college faculty and administrators in their efforts to better address the problem.

## CHAPTER 2

### LITERATURE REVIEW

This chapter sets the stage for the research project detailed in Chapter 3 by identifying relevant research and placing the topic of plagiarism in a historical context. Broader issues of intellectual property and ownership are explored as is the history and development of the TII detection software.

#### **Plagiarism Defined**

Any discussion of plagiarism must begin with a definition of the term. One definition comes from the Council of Writing Program Administrators (2003) and states “In an instructional setting, plagiarism occurs when a writer deliberately uses someone else’s language, ideas, or other original (not common-knowledge) material without acknowledging its source” (p. 1). This may appear at first blush as a simple and straight forward definition. However, it is interesting to note that this definition excludes instances in which the writer mistakenly fails to attribute the original source document.

The *Concise Oxford English Dictionary* (Pearsall, 2002) defines the verb to plagiarize as to “take (the work or an idea of someone else) and pass it off as one’s own” (p. 1,092). Here is seen broader definition in that it is not limited to the written word. Indeed, *the work or idea of someone else* could include music, painting, and a host of other means of expression. For the

purposes of this study, the definition was limited to a discussion of the written word; however it was important to note there are relevant plagiarism implications in fields other than literature.

Both of the above definitions imply that the writer is attempting to present copied work as his own original expression. This brings the researcher to another relevant definitional element related to plagiarism – the intent of the plagiarist. In some cases, the plagiarism committed may be due to a lack of understanding of the rules surrounding plagiarism and attribution of original sources. In other cases, the plagiarism is committed by the author with intent to deceive the reader. In both cases the end result is the same – the reader is led to believe the written text is the original expression of the writer – however the motivation of the writer differs greatly. There are significant implications in this distinction for writing teachers.

The playwright Ben Johnson is credited as being the first person to use the word plagiarist in reference to literary theft (Mallon, 1989). In a practical sense, plagiarism can be defined in the following four ways (Park, 2003):

1. Stealing material from another source and passing it off as their own, e.g.
  - (a) buying a paper from a research service, essay bank or term paper mill (either pre-written or specially written),
  - (b) copying a whole paper from a source text without proper acknowledgement,
  - (c) submitting another student's work, with or without that student's knowledge (e.g. by copying a computer disk).
2. Submitting a paper written by someone else (e.g. a peer or relative) and passing it off as their own.
3. Copying sections of material from one or more source texts, supplying proper documentation (including the full reference) but leaving out quotation marks, thus

giving the impression that the material has been paraphrased rather than directly quoted.

4. Paraphrasing material from one or more source texts without supplying appropriate documentation. (Park, 2003, p. 475)

Park's definition, while lengthy, is the most comprehensive in that it defines plagiarism according to the actions taken by the student.

### **A History of Plagiarism**

In order to gain a full understanding of plagiarism, it is helpful to understand its place in the history of the written word. Throughout most of human history, plagiarism was a very common occurrence (Mallon, 1989; Park, 2003). In fact, it was an utterly foreign concept that the creator of a written work somehow owned the expression that work represented and had exclusive rights to control use of that expression. In fact, since the dawn of the written word, authors freely borrowed characters and plotlines, modified them to a greater or lesser degree and made them their own. From Homer's *Odyssey* and Virgil's *Aeneid* to the works of William Shakespeare, authors freely borrowed prior works without the smallest regard for attributing their sources (Vint, 2008). Actually, it appears that the works of Shakespeare have not only been copied by other writers (Thomas, 2000) but that the great Bard himself appropriated the works of others (Julius, 1998). Such copying was regularly accepted practice. In fact, it was the task of the author to find new and interesting ways of telling the tales familiar to the reader or listener (Vint, 2008).

In historical context, then, a successful writer was one who took writings of the past and imitated them, hopefully in new and interesting ways (Vint, 2008). This concept – the Greek word is *mimesis* – places highest value on the writer's ability to imitate the great works of

history, mainly those of the classical world. As Mallon (1989) stated “There was a time when the guiding spirits of the literary dead were deliberately conjured, a time before ancestor worship gave way to that form of youth-enthralment known as originality” (p. 3). With such a value system, the idea that one writer might somehow own the text and ideas in his writing and that another writer could therefore not make use of that text without at least acknowledging its origins was utterly foreign.

It is only with the rise of the merchant class (Vint, 2008) and eventually the creation of the printing press (Hansen, 2003) that the concept of an author truly owning a written work became codified into law. Prior to this period, there were no copyright laws and therefore no way to enforce the idea of ownership of a written creation (Park, 2003). Gutenberg is usually credited with the creation of the first printing press in the late 1430s, although the technique of printing by transferring an image from one surface to another existed in various forms for several centuries prior.

In 1710, England passed the first copyright law and in 1790, the United States Congress followed suit. One hundred years later, plagiarism was still a common practice in the academic world, however (Hansen, 2003). Even though plagiarism continued to be commonplace, with the passage of copyright laws, writing began its transformation from primarily a search for truth and beauty to an economic pursuit. With the change in the mind of the public and the law, the writer became owner of the thing he created much as any craftsman or farmer would own the handicrafts or produce he was responsible for bringing to market. It was no great intellectual leap, then, to accord the writer the same ownership rights as the craftsman, including the legal authority to control the use of his products. And for the writer, the person who mimicked (or now stole) his stories, characters and ideas was as much a criminal as any thief.

## **Plagiarism in the Internet Age**

Frand (2000) proposed 10 attributes of the information age mindset. Of these 10, the last is most relevant to this study – namely that “in today’s parlance, there is no distinction between the owner, creator and the user of information” (p. 22). This is no doubt due to so much of our information being digitized and thereby easily copied. Both Wilcox (2005b) and Giorgio (2005) affirm that the ease with which one can cut and paste information has led to much of the current increases in plagiarism.

Noskin (2005) states that “Plagiarism, 21<sup>st</sup> century style, is fast becoming the number one problem of many high school writing teachers” (p. 14). This is no surprise considering the fact that the students now in high school have grown up with computers and the internet in their homes for much of their lives. These technologies have become as commonplace and second nature to these students as the telephone and the internal combustion engine became for earlier generations.

A 2001 study for the Pew Internet and American Life Project found that teens see the internet as an essential learning tool and that use of the internet in classrooms is on the increase (Lenhart, Simon & Graziano, 2001). In fact, 94% of 12-17 year olds with internet access indicated that they used the internet for research related to their school work (Lenhart et al., 2001). Ninety-three percent of the parents of these children reported that they felt the internet was an important tool in helping their children’s learning.

College students also use the internet to a great degree – more so than the general population (Jones, 2002). In a report from the Pew Internet and American Life research project, Jones (2002) found that the “great majority (85%) of college students own their own

computer...” (p. 2). Also this study found that “Nearly four-fifths (79%) of college students agree that Internet usage has had a positive impact on their college experience” (p. 3).

It comes as no surprise that the use of the Internet is on the rise and that the high school and college students of today see it as an integral and vital tool for their learning. The combination of the ubiquitous nature of computers, the internet and other information technologies with changing attitudes toward the ownership and control of information leads inevitably toward a world in which information is created, shared, modified and appropriated as never before seen. This combination of factors lies at the heart of the plagiarism threat in the academic world.

### **Overview of Plagiarism Research**

This section examines existing plagiarism research. In so doing, it seeks to address the issues of why plagiarism is important enough to cause concern, the level of seriousness of the plagiarism problem, and its causes. The researcher explored the broader cheating literature of which plagiarism is one part and finally addressed concerns using previous research, notably the use of self-reports as a measure of plagiarism.

**Plagiarism’s importance.** While plagiarism in particular (and cheating in general) may manifest in all areas of society, the potential for damage to our society may be greatest in our education system. Without a shared sense of commitment to honest and open inquiry, the mission of the academy is jeopardized. Plagiarism violates this shared commitment and curtails the effectiveness of the teaching and learning process at our nation’s colleges and universities.

An initial search on the topic produced volumes of writing on the problem of cheating and plagiarism and suggestions for combating both (e.g., Giorgio, 2005; Snodgrass & Bevevino, 2005; Wilcox, 2005a). The literature included studies on a variety of perspectives of cheating,

such as the prevalence of cheating, attributes of cheaters, and context variables related to cheating. By way of initial review of this literature, there was little doubt about the existence of plagiarism in both the general population and in academe, nor was there doubt that it was generally viewed as problematic and worthy of investigation.

There are a variety of reasons for being concerned about plagiarism. In a broad sense, plagiarism undermines our nation's fundamental notion of fair play and justice in that it seeks to reassign the rightful ownership of a text from its creator to the plagiarist. In this way, the plagiarism issue is not unlike the debates of recent years regarding software and music piracy. While some consumers may not view copying music or software files as equivalent to theft, such activities violate the fundamental right of someone to determine and control access to the object they have created. This is as true for rock bands that have produced a new compact disc as it is for authors who have created a new journal article. In plain language then, plagiarism is theft, and therefore both a crime and a moral transgression.

Plagiarism undermines the very core values of our higher education system (Rosamond & Connell, 2009). It strikes at the integrity not only of the person accused of committing the act, but also at the institution of which that person is a part, be they student or teacher. Without a shared sense of integrity and commitment to honesty and trust, it becomes impossible to evaluate student learning. When the written assignment submitted by a student is not the student's own work, the teacher's task of providing feedback for the student's improvement is futile since the work being evaluated was not created by the student. Furthermore, the student misses the experience the written assignment was intended to produce, namely the exploration of the paper's topic and the development of the student's abilities of reasoned thought through written expression.

Plagiarism also impacts the grades of honest students in a negative way. Students who plagiarize and are not caught most likely end up with a higher grade than if they had written the paper themselves. Presumably if the student had the time and ability to write the paper following accepted practices (and therefore not plagiarized), then the student would have done so. The student who plagiarizes does so for the purpose of artificially improving his grade. As a result, for those courses graded on a curve, the honest student suffers a commensurate decrease in grade. Plagiarism then not only hurts the plagiarist and the institution, it also hurts the honest student (Rosamond & Connell, 2009).

In addition, plagiarism diverts the efforts of the teacher from one who provides meaningful feedback and guides student development and learning to one of crime scene investigator. Plagiarism and the potential for plagiarism require teachers to spend their resources on identifying and documenting instances of plagiarism instead of on developing new and varied learning experiences for students. Administrators are also forced to spend their resources in the investigation and disciplinary process relative to plagiarism instead of on more positive and productive programs. Ultimately, without the shared sense of integrity and commitment to honesty and trust, the university is hard pressed to accomplish its mission – the education of our citizens. Plagiarism then is a problem because “it takes the place of and prevents learning” (Howard, 2003, ¶ 12). For this reason alone, research that helps the academic community better understand plagiarism, including efficient and effective means to identify and prevent it, provides an important service.

A greater understanding of plagiarism and the means to identify and prevent it is important to the academic community. So too is gaining a more thorough and accurate understanding of the scope of the problem. Many writers have expressed grave concern over the

apparent increase in incidents of cheating on college campuses (Wilcox 2005a). Davis et al. (1992) cited several studies that indicate cheating is on the rise. Hibbert (2005) noted that engineering research papers can be found on eBay. These papers are available for sale and presumably allow buyers to submit the purchased paper or portions of it as their own writing (Hibbert, 2005).

Other studies (Spiller & Crown, 1995) indicated little support for the notion that cheating behaviors are increasing. It is unclear if plagiarism in particular is on the rise in colleges and universities; however the past decade has certainly seen an increase in the opportunities students have for plagiarism with the advent of such internet based services as schoolsucks.com, abcpapers.com and orderpapers.com. Web-based services such as these provide students with the opportunity to purchase term papers on a variety of subjects. Some of these web sites even provide a limited selection of free term papers. Interestingly, these sites even provide multiple papers on the topic of plagiarism.

Plagiarism is not limited to the realm of higher education. It is also a problem for secondary education teachers. Noskin (2005) stated that “Plagiarism, 21<sup>st</sup> century style, is fast becoming the number one problem of many high school writing teachers” (p. 14). In fact, Snodgrass and Bevevino (2005) argued that this problem has its roots in elementary school where students are not made aware of the importance of plagiarism and what they need to do to avoid it.

While the literature may be unclear on the rate at which student cheating and plagiarism is increasing, there is no confusion over the fact that incidents of plagiarism occur regularly. A variety of factors have been found to be at play. Davis et al. (1992) found a variety of situational and dispositional determinants of cheating from their research and review of the literature.

Examples of situational determinants include pressure to get good grades, large classes that use multiple-choice exams, and allowing other students to cheat because of friendship (Davis et al., 1992). Dispositional determinants included lower student intelligence, need for social approval, and low personal work ethic (Davis et al., 1992)

Interestingly, Davis et al. (1992) found that over 90% of the students they surveyed indicated that they believed faculty should care about student cheating. In contrast, Keith-Spiegel (as cited in Davis et al., 1992) found that 21% of faculty reported they had ignored evidence of cheating. Furthermore, of the faculty in the Keith-Spiegel study, 30% stated that they believed ignoring that evidence was appropriate. Concerns about pursuing evidence of cheating included a fear of ruining a student's academic career as well as a fear of being drawn into lengthy litigation over the issue (Davis et al., 1992).

While opportunities to plagiarize have increased with the advent of web sites selling research papers, the internet, and electronic information technologies in general, have also begun to provide plagiarism detection tools. A number of software programs and websites provide plagiarism detection services. In a general way, these services operate by comparing the submitted text (i.e., a student's research paper) to either an existing set of documents in a large database, internet web pages, or both. As such, these services are necessarily limited by the breadth of the database they use and the efficacy of the search algorithms. One of these services, TII includes a unique third source of comparison. Not only does the TII service compare submitted text to its database of documents and to a variety of internet pages, it also adds the submitted document to its own database. Once a document is submitted to TII, future documents, such as those submitted by other students in the same course, are compared to it for

possible instances of plagiarism. This makes TII unique in that its database of comparison documents is ever growing.

**Seriousness of plagiarism.** Most writers on the topic of plagiarism agree that the problem of plagiarism is a serious and growing problem (Council of Writing Program Administrators, 2003; Hansen, 2003; Lathrop & Foss, 2000; Park, 2003; Wilcox, 2005b). That said, the literature is not unanimous on this fact. Some researchers have found evidence that plagiarism is not increasing and might even be decreasing. McCabe and Trevino (1996) found a slight decline in self-reported plagiarism with 30% of students self-identifying as having plagiarized in 1963 compared to 26% in 1993. While this is not a large decline, it does stand in contrast to the conventional wisdom that plagiarism is on the rise.

**Reasons for student to plagiarize.** Since virtually all student conduct codes in higher education include penalties for students caught plagiarizing, why do students continue to do so? The literature review includes a variety of explanations for why students continue to plagiarize.

For a student to avoid doing something wrong, he must first understand what behavior is considered wrong in the first place. Snodgrass and Bevevino (2005) believe that most students plagiarize without understanding that they are doing something wrong. This may be especially true of students at community colleges who are more likely to be first generation college students. As such, these students are less aware of the expectations for conduct in the academic community and may not be aware that plagiarism is prohibited.

These students may also not understand how serious the issue is taken in the college setting. In fact, the problem of plagiarism starts in elementary school and continues on through high school. Students are never really made aware of the seriousness of plagiarism and what they can do to avoid it (Snodgrass & Bevevino, 2005). Other authors concur that many students

are simply not aware of what constitutes plagiarism (MacDonell, 2005). Since these students never gain a full appreciation of the importance of avoiding plagiarism, they continue in the college setting just as they have in the past.

If these students also know other students with the same understanding (or lack thereof) regarding plagiarism, they may logically conclude that all students plagiarize. This notion may be reinforced by instances in the popular media in which journalists and professional writers are found to have plagiarized and suffer seemingly little in the way of serious consequences.

As Willen (2004) argues, there are also pressures on students to get good grades so they can get into the best colleges and get the best jobs. These students may not be knowledgeable about the academic world's practice regarding plagiarism, however even those who possess such knowledge face a disincentive to follow commonly accepted citation rules when under pressure to perform well and they perceive that they are unlikely to get caught.

On the other hand, even if we assume that students are relatively well versed in the academic world's expectations, there are still many other factors at play that may lead them to plagiarize. According to Dr. John Barrie, the president of iParadigms, the company that created the TII plagiarism detection service, there are three primary reasons that students plagiarize. These are the wide-spread availability of technology, increases in competition between students, and a general decline in morality (as cited in Deubel, 2005). Presumably the increases in technology that Dr. Barrie refers to are primarily the creation and growth of the internet. Other authors concur that with the rise of the internet, the ease of plagiarizing has led to its growth (Ryan, 1998).

Other writers cite a variety of plagiarism causes such as poor time management, fear of failure and boring writing assignments (Council of Writing Program Administrators, 2003).

Frand (2000) credits the mindset of the information age as a cause. In this mindset "...there is no distinction between the owner, the creator, and the user of information" (p. 22). Such a mindset makes it very difficult to define, recognize or control plagiarism.

**Plagiarism prevention.** While the focus of this research is not the identification and development of plagiarism prevention strategies, it is interesting to note that a great deal of the plagiarism literature focuses on various suggestions for preventing and identifying plagiarism. Ryan (1998) suggested that instructors can spot possible plagiarism by looking for changes in context or by spotting missing or false references or footnotes. McCabe and Trevino (1996) and Willen (2004) suggest that the development of school honor codes is useful in combating plagiarism. Willen, as well as Howard (2002), suggested that teachers must examine the types of writing assignments they give with an eye toward engaging students in learning instead of focusing on the production of papers.

Martin (2005) and Braumoeller and Gaines (2001) found that when students are made aware of the fact that their writings are being scanned for possible plagiarism, the students are less likely to plagiarize. Also, some authors (Council of Writing Program Administrators, 2003; MacDonell, 2005; Walden & Peacock, 2006) suggested that students are often poorly trained and unaware of what behaviors constitute plagiarism. It follows then that programs designed to raise awareness of how to properly cite sources could be helpful.

**Plagiarism and the broader cheating literature.** Much of the existing literature on plagiarism is imbedded in the broader topic of cheating (Park, 2003). That is, many research studies on plagiarism focus on cheating broadly with plagiarism being only one type of college student cheating. In fact, within the broader concept of college student cheating, plagiarism does not appear to be the specific type of cheating most studied. Spiller and Crown (1995) found that

after creating a database of research articles on cheating research and studying their findings, the two cheating behaviors most studied were students not reporting grading errors on exams and students changing answers on self-graded exams. As such, it is difficult to identify what is known specifically about plagiarism. This section looks at the broader cheating literature and looks specifically at plagiarism.

Davis et al. (1992) found a number of determinants of cheating. This study found that students tend to believe that all students cheat in some manner. The study also found that students with lower intelligence and/or a need for social approval were more likely to cheat. Finally, the study found that those students with an internalized sense of social control and/or a high personal work ethic were less likely to cheat.

Also interesting, in a study by Roig and Ballew (1994), the researchers found that students with more tolerant attitudes toward cheating tended to believe the attitudes of their professors about cheating were more tolerant than they actually were. This lends support to the idea that students who cheat tend to find rationales for their behavior and tend to attribute blame to external factors. This is in line with other literature that indicates students who cheat tend to adopt neutralizing rationales for their behavior and attribute blame to their professors or other external factors (Roig & Ballew, 1994). This also echoes the findings of the Davis et al. (1992) study that found students with a higher sense of personal control (or put another way, those students who tend to attribute their behaviors to their own internal control rather than an external factor) are less likely to cheat.

Bichlet and Tibbetts (2003) found three factors that correlated with increased cheating behaviors. The first of these is low self control. Those students with lower self control were, not surprisingly, more likely to cheat. Also, those students who had greater or more frequent

opportunities to cheat tended to be more likely to cheat. Finally, those students who experienced higher levels of pressure and stress were more likely to cheat.

A review of the cheating literature by Whitley (1998) found several correlates of cheating. Higher cheating behaviors were associated with student age and marital status. Younger students and single students correlated more highly with cheating. Also students with lower GPAs were more likely to cheat.

The Whitley (1998) study also found that students with high expectations for success on a task were more likely to cheat. This at first seems counterintuitive, however student who report high expectations for success may be reacting to the level of pressure they experience to perform well. If so, this is not surprising as other studies support the notion that higher levels of stress and pressure are correlated with higher incidents of cheating. In a similar vein, Whitley also found that students who report high levels of pressure to achieve were also more likely to cheat. Finally, Whitley also found strong correlations between cheating and past cheating behaviors, poor study conditions, and perceptions of social norms that permitted cheating.

A student's college major or area of study may also be predictive of cheating behaviors. In a study by Bernardi et al. (2004), the researchers found that students who majored in psychology were less likely than business majors to cheat. McCabe and Trevino (1995) found that business majors were most likely to cheat, followed by engineering students, science students, and finally students majoring in the humanities. Croucher (1994) mentions that students majoring in science and technology were more likely to cheat than students in other majors.

Gender may also play a role in cheating. Whitley, Nelson and Jones (1999) found a gender-based difference in cheating behaviors with men being more likely to cheat than women.

Interestingly, there was an even greater difference between men and women regarding cheating attitudes.

Finally, Davis et al. (1992) found something interesting about student attitudes regarding cheating. This study found that over 90% of the students in their study indicated that the faculty should be concerned about cheating. This poses an interesting situation. With a significant number of students admitting to cheating and with nearly all of them believing that faculty should be concerned about preventing cheating, many students seem to therefore hold conflicting views about cheating. Namely that the behavior is wrong and should be investigated or stopped all the while engaging in that same behavior.

**Problems with self-reports.** Whitley (1998) indicated that most research on plagiarism relies on self-reports of cheating instead of using some objective measure of cheating. Sudman and Bradburn (1982) explained that a primary limitation to the use of self-reports is that subjects tend to give inaccurate information. Specifically, subjects tend to over-report occurrences of socially desirable behaviors and tend to under-report occurrences of social undesirable behaviors. Since we know from other researchers that most students view cheating in general and plagiarism specifically as something that is wrong and to be avoided, it follows that research studies using self-reports of cheating and plagiarism behaviors may be limited in that subjects are likely to under-report the level of their own cheating and plagiarism. Finding other measures of plagiarism can help address this limitation and expand our understanding of plagiarism behaviors. This was in part the impetus for this study.

### **The TII Tool**

**How TII works.** For a full understanding of TII, it is important to have a basic understanding of how the TII service works from a user perspective. Essentially there are three

phases or steps in the process of using TII to identify student plagiarism. Those steps are submission of the paper, the TII analysis of the submitted paper and the report from TII.

The submission process for TII is fairly straightforward. The user (either a faculty member or a student) logs in to the TII website. The user is then able to upload a paper in the form of an electronic file to the TII website. Some faculty members may prefer to submit student papers themselves. Others may opt to create TII accounts for their students and then have the students themselves submit the papers. In both instances, the submission process is extremely simple.

Once submitted, the paper is compared to the TII database. This database consists of over 12 billion archived web pages, over 100 million student papers and over 80,000 newspapers, magazines and scholarly journals (iParadigms, n.d.b). In addition to being compared to this enormous database, the submitted paper is also added to the archive of student papers, allowing future comparisons to include previously submitted papers.

Finally, the TII service creates a unique originality report for the submitted paper. The submitter of the paper may view this originality report. The originality report includes a variety of information including the Overall Similarity Index. This is the percentage of the submitted paper that matches one or more other sources. In the report, the original submitted text is shown side-by-side with the matching text as identified by the TII comparison analysis (iParadigms, n.d.b). This allows the viewer to see exactly what portion of the submitted paper matches other texts, be that a journal article, a web page or another student paper. Furthermore, the viewer has the ability to select and *turn off* areas of matching text in the submitted paper that are properly cited and therefore not plagiarized (iParadigms, n.d.b). These reports are savable and printable as well.

**TII and iParadigms.** TII is a product of iParadigms, a company started by several researchers who were interested in writing computer programs to detect student plagiarism. These researchers, who were originally at the University of California Berkeley in the mid 1990s, eventually created the company iParadigms in 1996 (iParadigms, n.d.a). By 1998, the company and its plagiarism detection service gained international attention as the leading plagiarism detection service available (iParadigms, n.d.a).

Once iParadigms and its TII software gained a measure of success, it came under criticism and eventually legal challenge for the manner in which it operated. Specifically, the TII software keeps a copy of all submitted papers to add to its database for future plagiarism checks. This allows the TII database to grow quickly and to identify papers that have been submitted by multiple students or have perhaps been bought and sold over the internet. This mechanism is one of the strengths of the TII software and something that sets it apart from most other plagiarism detection software services.

In 2002, the *Chronicle of Higher Education* (Foster, 2002) described the legal challenge – namely that iParadigm’s practice of keeping a copy of a student’s paper that had been submitted violated the student author’s copyright protection. In that same article, iParadigms stated that keeping a copy of the student paper did not diminish the marketability of the work and was therefore in line with fair use practices.

iParadigms faced multiple legal challenges based on the idea that by keeping a copy of a student’s submitted paper in their database, they were violating the student author’s copyright. However most recently, a March 2008 decision handed down by U.S. District Judge Claude Hilton stated that iParadigms had not violated the rights of the student authors and thereby dismissed their complaint against iParadigms (as cited in Barakat, 2008). The four McLean High

School students who sued iParadigms plan to appeal the ruling, however as of this writing, iParadigms is free to continue to operate its TII service as it has in the past (Barakat, 2008).

### **Summary**

This chapter presented a review of the history of plagiarism from its beginnings to the current information age. The chapter also explored an understanding of plagiarism based on a review of existing literature. Finally, the chapter provided an overview of the TII service and the company iParadigms that created that service. Chapter 3 explores the methodology of the proposed study including research questions and the quantitative and qualitative approaches that were undertaken.

## CHAPTER 3

### METHODOLOGY

As discussed in Chapter 1, the goal of this study was to help address the knowledge gap in community college plagiarism such that faculty and administrators can be better informed about the factors and circumstances under which it may occur and thus work proactively to prevent or educate students on avoiding it. This goal was pursued via a study that investigated a set of course and faculty related factors that may be associated with particular levels of plagiarism. The three research questions addressed by the study are:

1. Are there particular instructor related factors that are associated with the level of suggestive plagiarism that occurs in the community college classroom?
2. Is there a difference in suggestive plagiarism based upon the campus on which the faculty member teaches?
3. How do faculty who use the tool think about plagiarism and their role in educating students on how to properly cite works and avoid it?

The following sections of this chapter discuss the design of the study, the population and sample, the variables of interest and their operationalizations, the procedures that were employed to conduct the study, and how the data was analyzed.

## **Design of the Study**

This study used a mixed-method research design employing the tools of both quantitative and qualitative inquiry. Quantitative research is useful for investigations that seek to understand a phenomenon broadly and, where appropriate, to generalize to a larger population. The study followed an ex-post facto research design. Kerlinger (as cited in Cohen, Manion & Morrison, 2001) defines this approach to quantitative research as one in which the variables of interest or manipulation have already occurred (i.e., the phenomena being studied has already happened). In other words, the independent variable or variables cannot be manipulated and instead what is observed is the affect they have on a dependant variable.

Qualitative research is useful for investigations that seek to understand a phenomenon deeply. In contrast with quantitative inquiry, the purpose of qualitative in the social sciences is not to generalize but rather to help the researcher understand the nuances of study participant circumstance and what might serve as a foundation for developing theoretical relationships for follow-on quantitative study.

## **Population and Sample**

The population of interest for this study was students enrolled in community colleges. The specific sample of community college students comes from a Midwestern community college in which the students have taken classes with an instructor who utilized TII in the course. Thus, the unit of analysis is actually community college classes (both face-to-face and on-line) in which the instructor required that written assignments be submitted to TII by all students in the class or that the instructor themselves submitted papers to TII for analysis regardless of whether or not the faculty member did anything with the data that resulted from the analysis.

## **Description of Midwestern Community College**

The Midwestern community college in this study served more than 119,000 students during the 2007-2008 academic year. It employed more than 4,800 full-time and adjunct faculty members who taught courses in 57 degree disciplines across eight academic schools. This community college served a geographic area of approximately 36,000 square miles. It consisted of 14 administrative regions with 28 campuses that provided one or more complete associate degree programs. It also had several local learning centers that offered limited courses and support services (Higher Learning Commission, 2009a).

During the fall 2007 semester, the student population of this community college was predominantly female (59%) and predominantly enrolled part-time (66%) (Enrollment Fact Book, 2008). The mean student age was 27.8 years and the median student age was 24 (Higher Learning Commission, 2009a).

The faculty were predominantly part-time with 79% of the colleges' teachers being adjunct faculty (Higher Learning Commission, 2009b). Academic credentials for the faculty vary by discipline. In some technical areas, faculty members generally hold a bachelors degree or higher with one or more industry recognized certifications. In the liberal arts and sciences, faculty members generally hold a masters degree or higher in their teaching discipline. Credential requirements are the same for full-time and adjunct faculty members.

## **Scope of the Study**

For purpose of this study, instructors from two of the college's 14 administrative regions were included. The instructors involved were a combination of full-time and part-time instructors, some of whom taught multiple sections of courses and/or different courses. These faculty were picked specifically for particular reasons salient to the study. First, they taught

courses in which TII analysis was conducted on all students in the course and not just those that the instructor may have suspected had engaged in plagiarism. Second, the selections were made such that secondary data could be obtained about the faculty member. Finally, these faculty taught classes in which the nature of writing was one that did not place a premium on formal citation. The reason for this is that TII is not able to discern a submission that has been properly cited (and thus is not plagiarized, although it may be potentially poor writing if heavily quoted) from one that has not been cited at all without scrolling through the individual originality report for a given paper. The archival data available to do the study did not include the original papers and/or TII originality reports. Hence, it was important to minimize this as a possible confound. However, discussions with faculty who regularly use TII in their courses in which citations are heavily used, indicate that higher originality reports may be suggestive of a heightened likelihood of actual plagiarism and not just bad writing (S. Powers, personal communication, March, 14, 2009). Thus, while this concern could not be completely accounted for and some of the writing samples included in the study did involve some citation, it is minimized in a way that the conclusions drawn can be used to inform the richness of data expected through the qualitative phase of the study.

### **Variables**

It was the intent of the study in the quantitative phase to explore the associations between a set of independent variables on a dependant variable measure of suggestive plagiarism. In this section, the dependant variable was first described. Following that, the independent variables of interest were discussed, grouped into three sets of factors – course related factors, discipline related factors and instructor related factors.

**Dependent variable.** The dependent variable of interest was suggestive plagiarism. This language was used purposefully given that TII is not able to discern definitive incidents of plagiarism, but rather degrees of suggestiveness that plagiarism has occurred. A faculty member's ability to ascertain true plagiarism requires close examination of a TII originality report in which sections of the document are highlighted as potentially problematic. Since that level of data was not available for use in this study, it is important to qualify the variable as a relative measure of suggestive plagiarism.

By way of variable operationalization, the TII originality report index was used. The originality report index was the central and summative *score* provided by TII. It represented the proportion of text within a document that might be lifted from another's work and claimed by the author of the paper and/or that was improperly cited. In the available data set, the originality index was provided on a 4-point scale divided into proportion quartiles, namely 75-100% of the paper was deemed problematic, 50-74% deemed problematic, 25-49% problematic and 0-24% problematic. Hence, a high originality report index score demonstrated greater potential for plagiarism than a lower originality report index score. For purposes of this study, the originality index report was coded a *1* if in the 0-24% quartile, a *2* if in the 25-49% quartile, a *3* if in the 50-74% quartile and a *4* if in the 75-100% quartile.

It is important to point out that the TII database for this Midwestern community college was the initial source of data from which all other variable data was derived. What is provided by TII is a listing of a faculty member's name, the total number of submissions made, the total number of originality reports generated and the number of generated originality reports that produce an originality index score in each of the four quartiles as noted above. Thus, secondary

data of interest to derive the independent variables discussed below were all selected based on what can be identified in secondary sources using this limited TII information.

**Independent variables.** As noted, the independent variables of interest were grouped into three sets. The sets include those associated with the course, those associated with the discipline, and those associated with the instructor. Previous research has shown that cheating in general (and perhaps plagiarism specifically) may be linked to factors or circumstances associated with each of these groups.

For example, Keith-Spiegel (as cited in Davis et al., 1992) found that not only do some faculty report they have ignored instances of cheating, but nearly a third of those faculty also indicated they thought it was appropriate to ignore the evidence of cheating that they encountered. Also, course and academic discipline factors may shed light on the issue of plagiarism as found by Bernardi et al. (2004).

**Class level.** Class level was the only course related factor investigated given the nature of the data available from TII as discussed above. Class level was defined as a course that was part of a developmental/remedial program or part of a regular degree program. It may be, for instance, that remedial students may have less familiarity with the rules and norms of writing. They may also feel more pressure to do well in their courses since their ability to move on to an actual degree program was contingent on their ability to complete their developmental course requirements.

Research by Straw (2002) indicates that students with lower academic performance (as measured by course grades) are more likely to cheat. Students in developmental/remedial level course work have demonstrated a generally lower level of academic performance than their peers who have produced higher scores on standardized assessment instruments. However, it may also

be that students in regular degree programs confront unique preparatory challenges such that their incidence of suggestive plagiarism may be no different or perhaps even higher than students in developmental courses. Thus it was important to investigate this factor.

Class level was obtained from the Human Resources Department database of course assignments. The variable was coded a *1* if the faculty member taught only at the remedial level and a *0* if just at the regular college level. Faculty who taught both levels were excluded from the analysis since TII data is aggregated at the faculty member level and not the course level.

**Age of instructor.** Given that the instructor name was identified in the TII report, this information provided the opportunity to investigate a number of factors associated with the instructor. Age was the first one with the others that follow also associated with the instructor grouping of factors. Although previous research suggests that student age may be a factor leading to differential incidents of plagiarism (Straw, 2002), there is no research that has investigated the impact that the age of the instructor may have on incidents of plagiarism. Hence, it was worthy of an initial investigation. Age of instructor was treated as a continuous variable measured in years. This data was obtained from the Human Resources Department records.

**Gender of instructor.** Gender was a second instructor related factor that was investigated in this study. Several studies and authors link student gender and cheating behavior (Buckley et al., 1990; Straw, 2002). Specifically, these studies found that male students were more likely to cheat than female students. The literature was silent on the topic of instructor gender, however. Hence instructor gender was also included in this study and coded as a dummy variable with women receiving a *1* and men a *0*. This data was obtained from human resources office records.

**Employment status of instructor.** The study also included the employment status of the instructor as a factor. There was a lack of research on the impact of the employment status of the classroom teacher on instances of plagiarism. Considering this gap in the literature and the ease with which this data can be obtained, it was important to account for employment status in this study. Instructors were coded as *1* if they were full-time members of the faculty and *0* if they were adjunct or part-time faculty members. This data was obtained from Human Resources Department records.

**Number of semesters taught at institution.** There was no existing research on the subject of instructor experience and the likelihood of students plagiarizing. It was therefore important to include some measure of the teaching experience of the instructor in order to begin to shed some light on this area. This was measured by the number of semesters the instructor had taught for the community college. This was a continuous variable and the data was obtained from Human Resources Department records.

**Academic division in which the instructor taught.** There existed some research that indicated students in business related fields were more likely to plagiarize/cheat and students in the liberal arts were less likely to do so (Bernardi et al., 2004; McCabe & Trevino, 1995). It was therefore important to investigate the academic division in which the instructor taught. The nature of the data and the parameters under which instructors were chosen for inclusion in the study may limit the disciplines studied. This variable was coded *0* for business, *1* for liberal arts and sciences, *2* for technology and applied sciences, *3* for health, *4* for education, *5* for public services, and *6* for fine art and design. The data for this variable was obtained from Human Resources Department records. These disciplines were treated as separate dummy variables and

coded with a *1* for that discipline and a *0* if otherwise. This was the only discipline related variable included in the study.

**Campus.** The final variable was the campus on which the faculty member taught. There may be cultural differences between the two subject campuses or differences in how TII was administered or used on the campuses. While there was no specific research to support the notion that different campus climates may impact levels of student plagiarism, there may be some underlying difference that could be explored in some detail during the qualitative portion of the study. This variable was coded as a dummy with a *1* for one of the campuses and a *0* for the other campus.

## **Procedures**

The data collection process proceeded in a series of phases. First, the data from the Midwestern community college's TII database was downloaded and entered into a Microsoft Excel spreadsheet. From there, a process of case culling occurred to ensure the data of interest met the parameters noted in the population and sample section of this chapter. To do this, the TII database was examined to ascertain the number of student paper submissions for each faculty member. Those faculty with four or fewer submissions were eliminated from consideration. Even if a given faculty member only taught one course, that course would have generated more than four student submissions assuming the faculty member submitted all student assignments to TII and since classes of four students or less were normally cancelled by the college.

Next, the remaining faculty were contacted by telephone or email to determine two important factors related to how they make use of TII in their classes. The faculty were asked if they submitted all student work for TII analysis or if they only submitted some student papers (for example those papers that appeared to be plagiarized). Also, they were asked about the

nature of the writing assignments they gave their students. Specifically, they were asked if the assignments had a high or low expectation for academic citations. Since TII is unable to differentiate between plagiarized text and properly cited text, it was important to identify those faculty members who indicated their writing assignments carry a low expectation of citations (e.g. expository or creative writing assignments). Ideally, only faculty who submitted all student writing to TII for analysis and whose assignments had a low expectation of citations were to be included in the study. As discussed later, these two requirements turned out to be so stringent that the sample size for the study was reduced to a level that made it impossible to conduct any meaningful statistical analysis. Since this proved to be the case, the study included faculty who met one of the two requirements (i.e. those who submit all student writing to TII for analysis or those whose assignments had a low expectation of citations).

The second major phase of the study involved matching these selected faculty member's TII data with the supplemental data of interest from the Human Resources Department. This secondary source of data was central to the investigation of the independent variables of interest regarding the course, the discipline, and the instructors themselves.

The third phase of the study was to conduct the analysis of the data. The data was entered into SPSS and regressed using a step-wise procedure. Step-wise was appropriate when no a-priori theory formally undergirds the variable relationships, but rather the researcher wished to explore new and suggestive relationships suitable for theory development. To ensure that the data were suitable for regression analysis, however, and were free from excessive collinearity, a correlation matrix was produced for observation for which subsequent collinearity analysis was conducted if there were independent variable relationships with correlations above .4. In

addition, if any variable transformations were necessary due to skewness, those were done as well.

Once the data were deemed suitable for a regression procedure, a table of descriptive statistics was presented (means, standard deviations, range values, and frequencies as was appropriate) followed by a table that presented the results of the stepwise regression analysis. The table reported overall model explanatory power (i.e. the adjusted  $R^2$ ), the  $F$ -value and its significance, and the standardized coefficients and signs for each of the independent variables. The findings were then summarized in prose form.

### **Qualitative Study**

Given the limitations of TII for ascertaining actual plagiarism and the ex-post facto study design for which there was no control over how the instructor actually used the tool, the study was augmented with a qualitative component. Specifically, a subset of four full-time and four part-time faculty members whose data was reflected in the TII data sample and who represent some diversity of disciplines were to be interviewed. Those interviews followed a semi-structured interview protocol of nine questions (Appendix A). The interviews were conducted in person. The interviews were recorded and the resulting recording transcribed. The interviews lasted approximately one hour each.

The researcher took periodic field notes during the interview to minimize distractions to the interviewee. These notes focused primarily on topics the researcher wanted to further explore with the interviewee as well as descriptions of non-verbal signals from the interviewee that would not be captured by the tape recording. After the conclusion of each interview, the researcher spent approximately 15 minutes noting other observations and summary comments

about the interview. This was done immediately after the interview ended so the discussion was still fresh in the mind of the researcher.

### **Analysis of Interviews**

Upon completion of the interviews, the researcher reviewed his notes and the transcribed interviews looking for convergent and divergent themes. By chunking the data (organizing elements into logical groupings) the ability to make sense of a study participant's meaning and linkages to other participants' interview comments was possible. Furthermore, member checking was done with participants to ensure that the researcher interpretations of their comments were accurate. This data was also triangulated with what was surfaced by TII to check for alignment with what the data said on their class performance using TII to the extent that was possible.

### **Researcher Perspective**

The researcher was currently an administrator and 18-year employee of the Midwestern community college referenced in this study. However, the researcher was employed in a different administrative region than the regions from which the faculty for this study was drawn. As such, the researcher was not nor had ever been in a position of authority over any of the faculty in question. In fact, with the exception of emails related to this study, the researcher had no contact with any of the faculty interviewed.

The researcher's first 11 years with the college were spent as a classroom teacher, predominately in the area of developmental mathematics. However, the researcher had a background in writing and taught the occasional developmental writing course. In addition, the researcher spent a portion of time as a tutor for students enrolled in developmental level courses. As such, this researcher had occasion to work with students and their writing assignments.

While the researcher personally never had a student plagiarize in one of his classes (or at least the researcher was not aware of it occurring), the researcher did serve in an administrative capacity for several years and assisted other faculty members in the process of documenting and addressing plagiarism in their courses.

The researcher found that in many cases, students were simply unaware that they had plagiarized. Also, they were generally unaware of the seriousness of their transgression. In some cases students had clearly plagiarized in an effort to get a better grade or because they ran short on time and feared not being able to complete the assignment. With few exceptions, it had been the researcher's experience that students were apologetic and willing to make whatever amends the college determined to be necessary.

## CHAPTER 4

### ANALYSIS OF DATA AND FINDINGS

This study was designed to better inform community college administrators and faculty regarding possible factors that contribute to higher levels of student plagiarism and to suggest appropriate preventative or responsive interventions. More specifically, the study was undertaken to develop a greater understanding of the role faculty related factors play in determining student plagiarism. In addition, the study sought to provide a greater understanding of the experiences of community college faculty who make use of the online plagiarism detection tool TII.

#### **Subjects and Study Design**

For the quantitative portion of this study, the subjects consisted of 86 faculty members who had made use of TII at two campuses of a multi-campus, Midwestern community college. The TII service records information by faculty member including the number of papers submitted and the quartile in which the submitted papers' originality report scores fall.

For the qualitative portion of the research, the study participants were nine faculty drawn from the set of 86 faculty in the quantitative portion of the study. Participants came from two campuses of the focal statewide community college system, four faculty from the Midwest Central campus and five from the Midwest South campus. These nine faculty also represented variations in age, length of service and academic discipline.

The researcher had access to two data sets from these two community college campuses. These two data sets came from the aforementioned administrative regions and were organized in an identical fashion as they were standard reports generated by the TII software and could thus be combined. The data sets were organized by faculty member; that is, each line in the data set contained the TII results for one faculty member.

The data was supplemented by additional information about the faculty users from the Human Resources Departments of the two administrative regions of the community college. These additional data elements were the level of the class the faculty member taught (either developmental/remedial or college level), the age and gender of the instructor, the employment status of the instructor (either full-time or part-time), the number of semesters of teaching experience the instructor had at the community college, the academic division in which the instructor taught (business, liberal arts, technology, etc.) and the campus at which the instructor worked.

### **Changes to the Study Design**

Early in the process of developing the research proposal, the researcher had a discussion with a human resources director from the administrative region where he was employed (not one of the two regions examined in the study). The researcher understood that all the data elements listed above could be obtained from the community college's normal set of reports and from its central database. At the time of that discussion, the community college was implementing a new central database system. When the researcher came to the point of requesting the needed data elements, he learned that the number of semesters of teaching was not available to the human resource directors from the new central database system. In order to obtain this information, they or a staff member would need to review the individual files of each faculty member and

actually count the number of signed semester contracts in each personnel folder. This confusion was most likely due to unfamiliarity with the details of the new central database system.

During the approval process with the Indiana State University Institutional Review Board (IRB), it was determined that asking the human resources department to review each personnel file would expose all information contained in the file. This could include prior disciplinary actions, annual performance evaluations or any number of sensitive documents that were not related to the study.

In order to maintain the privacy rights of the faculty, the researcher was asked to secure a signed release from each faculty member. As an alternative and after consultation with the researcher's dissertation committee chairperson, a decision was made to request the original hire date for each faculty member as a substitute for the number of semesters taught. This information was available to the human resources directors without requiring them to open any personnel files. This minor change allowed the study to proceed with IRB approval and with the privacy rights of the study subjects intact.

The study underwent an additional change in design during implementation. Originally, the researcher sought to include only faculty members who met two criteria related to the way in which they used TII. First, they had to have submitted all student papers for evaluation by TII rather than only submitting the few they believed looked questionable or otherwise appeared to obviously include plagiarized text. Second, they had to teach courses that included writing assignments with a low expectation of academic citations. These two criteria were necessary to address the fact that TII actually identifies matching text and not necessarily plagiarized text.

The faculty subjects were contacted via email and/or telephone to determine the extent to which these two criteria were met. Only 22 of the 86 faculty responded (25.5%). Of the faculty

who did respond, 21 out of 22 (95.5%) indicated they submitted all student papers. Only one of the 22 (4.5%) indicated the course assignments they gave had a low expectation of academic citations. Given that the quantitative portion of the study was designed as suggestive or exploratory for informing the interviews that followed and not relied upon as definitive results, all of the faculty in the dataset were used even though most only met the first of the two criteria for inclusion.

### **Data Analysis**

The researcher carried out the data analysis by entering the data into SPSS and using a step-wise regression procedure. The independent or predictor variables used in the analysis included campus, age, gender, years since hire, and full-time or part-time status. The dependent variable was incidence of suggestive plagiarism. The intent of the study was to include developmental/college level course and academic school as independent variables. However, there was insufficient variability in these two variables and they could not be included in the analysis. Only six of the faculty subjects (6.9%) indicated they taught developmental education courses. The remainder taught either in both areas or taught college level courses. Similarly, the majority of the subjects taught in the liberal arts area ( $n = 77$ , 88.5%) with only a few subjects teaching in the remaining academic schools of the college.

### **Descriptive Results**

Table 1 presents the descriptive results of the data analysis. Included are means and standard deviations for each variable. By way of summary of the descriptive results, among the 86 instructors investigated, the average level of suggestive plagiarism was 1.4 or between the first and second quartiles (i.e. the average originality report score fell between 0% and 24% [the first quartile] and 25% and 49% [the second quartile]). The spread of the data as evidenced by

the standard deviation of .37 indicates that most of the data points were within this range as well, although the full range was from 1.000 to 3.533, indicating a few outliers that were higher than the second quartile.

Table 1

*Descriptive Results*

	Mean	SD	Range
Suggestive Plagiarism	1.40	.37	1.000 – 3.533
Campus	1.52	.50	
Age	48.09	12.73	28 – 71
Gender (28 men; 58 women)	.33	.47	
Full-time/Part-time (21 FT; 65 PT)	.24	.43	
Years Since Hire	6.48	5.15	0 – 22

In terms of the instructors, they averaged 48 years of age with a considerable spread in the age data as well and an age range of 28 to 71. The majority of the instructors were women (58 of the 86) and part-time instructors (65 of the 86). Finally, the average number of years since hire was 6.48, although again the spread within one standard deviation of the average was considerable and with a range of 0 to 22 years.

**Regression Results**

Prior to completing the regression analysis, the variables were first checked to ensure they met the assumptions of regression. Plagiarism and year since hire were found to be non-normal and a log transformation was used to correct the normality so the regression analysis

could be completed. In order to ensure the absence of excessive collinearity, another expectation for regression, bivariate correlations were calculated and are shown in Table 2.

Table 2

*Correlation Matrix*

	Log (Plag)	Campus	Age	Gender	FT/PT	Log (Years)
Log (Plag)	1.00					
Campus	.08	1.00				
Age	.10	.05	1.00			
Gender	-.02	-.03	-.03	1.00		
FT/PT	.19*	-.05	-.11	-.11	1.00	
Log (Years)	.27**	.04	.29**	-.14	.33**	1.00

*Note.* \* =  $p < .05$ ; \*\* =  $p < .01$

As can be seen in the correlation matrix, none of the independent variable relationships had a correlation above .33, well below the usual thresholds considered suggestive of collinearity. Further investigation of the data using variance inflation factors and condition indices revealed no cause for concern over collinearity.

A multiple linear regression was then conducted to determine whether the independent variables of years since hire, campus, gender, age, and full/part-time predicted the dependent variable of level of suggestive plagiarism. The assumptions of regression were assessed and years since hire were found to be non-normal. It was transformed using a logarithmic transformation and used in further analysis. All of the independent variables were entered in to the model; however the model was not statistically significant and none of the independent

variables served as predictors of level of plagiarism. Tables 3 and 4 present the model summary and coefficient analysis. The model only accounted for 9% of the variance and the null hypothesis for years since hire, campus, gender, age, and full-part time was accepted.

Table 3

*Model Summary*

Model	$R$	$R^2$	$R^2$ adj	$F$	$df$	$p$
	.30	.09	.033	1.59	.580	.17

Table 4

*Model Coefficients*

	$B$	$\beta$	$t$	$p$
Campus	.01	.07	.68	.50
Age	.00	.05	.45	.66
Gender	.00	.02	.18	.86
FT/PT	.03	.13	1.12	.27
Log (Years)	.07	.21	1.73	.09*

Note. \*  $p < .1$

As presented in Table 3, the model accounted for just 3.3% (adjusted  $R^2$ ) of the variance among the predictor variables of years since hire, campus, gender, age, and full-part time status and as evidenced by the  $p$ -value of .17, the model itself was not significant. Furthermore, as

evidenced in Table 4, none of the coefficients were significant, although the log of number of years since being hired as an instructor/faculty member approached significance ( $p = .09$ ).

### **Qualitative Results**

Although the inferential findings did not reveal significance, the results were nevertheless helpful in informing the qualitative portion of the study, specifically that there may be more nuance of insight that relate to these and other factors that could be gleaned through interviews of the faculty. Hence, the qualitative study was undertaken to gain a richer understanding of the actual experience of faculty using the TII plagiarism detection service. Following is a review of the procedure undertaken and a description of the themes that arose during the interviews.

**Interview procedure.** Nine faculty members were interviewed; four from the Midwest Central campus and five from the Midwest South campus. There were four male and five female participants. Five taught composition courses at either the college or pre-college level while the remainder taught courses in other subjects such as history, political science, business or accounting.

The interviews were conducted following the semi-structured interview protocol contained in Appendix A. These interviews lasted approximately one hour and took place in a location with minimal distractions, typically an office or conference room. Only the researcher and the interview participant were present in the room at the time of the interview. Each interview was recorded and later transcribed. Interview participants were given an opportunity to read and agree to the consent form. None of the participants presented any questions or objections and all signed the consent form.

The researcher took periodic notes during the interview, rather than constantly writing during the interview and potentially causing distractions or causing the researcher to miss

important information from the interview subject. These brief notes also served to help the researcher recall topics that warranted follow-up and further questioning of the interview participant later in the interview. At the end of each interview and after the interview participant had left the room, the researcher spent 10 to 15 minutes transcribing notes about the interview including impressions of the participant and possible connections to other interviews that had been conducted.

After the interviews were transcribed, they were sent to their respective participants for review. This gave the interview participants an opportunity to correct any errors that may have been encountered by the transcriptionist or to clarify any statements made during the interview. None of the nine interview participants indicated a desire for any changes or corrections to the transcriptions.

**Interview participants.** As noted above, nine faculty were selected and agreed to participate in the qualitative portion of the study. They were selected from the two campuses in the study and represented a diversity of faculty who had used the TII tool. Four of the study participants were men and six of the participants were part-time faculty. Four of the participants were from the Midwest Central campus. The following sections describe each of the participants in greater depth. Pseudonyms are used to protect their identities.

***Fred.*** Fred was a 52 year old male who teaches at the Midwest Central campus. He was a full-time member of the faculty, having been hired nine years ago. He taught college-level courses in history. In his U.S. History course he assigned three writing assignments, each progressively more demanding and longer. Fred's interview was conducted in an available classroom near his office.

*Elizabeth.* Elizabeth was a 51 year old female who joined the full-time faculty of the Midwest Central campus only three years ago. Her teaching background included teaching English writing courses. At other institutions she had also taught courses in all levels of German. She had also taught creative writing, technical writing and American literature at the Midwest Central campus. The interview with Elizabeth was conducted in a private office in the administrative suite of the campus.

*Mo.* Mo was a 63 year old male. He was a part-time faculty member and began teaching at the Midwest Central campus seven years ago. He taught writing courses for the college, but had also taught courses in writing, business writing and folklore at a nearby university. He held a Ph.D. in folklore. His interview was conducted in the same administrative office as Elizabeth's interview described above.

*Charles.* A part-time faculty member on the Midwest Central campus, Charles was a 43 year old male who was first hired by the college 20 years ago. He taught college level courses in history, political science, economics and philosophy. In addition to teaching for this Midwestern community college, Charles was a faculty member at a university where he eventually earned tenure, served for a time as the chair of the philosophy department, and retired from that university. His interview was conducted in a vacant classroom on the Midwest Central campus.

*Sam.* Sam was a 64 year old male instructor on the Midwest South campus. He was a part-time member of the faculty and had been hired three years ago. In addition to teaching at the Midwestern community college, he had also been a public school teacher for 31 years. In both settings he taught English composition. His interview was conducted in a conference room in the administrative suite of the Human Resources department on the Midwest South campus as were all the interviews at that campus.

**Jane.** Jane was a 67 year old, part-time member of the faculty on the Midwest South campus. She joined the faculty 15 years ago. Prior to her part-time community college teaching, she taught English in the public school system in both junior high and high school. She also served as a school counselor. The college courses she taught included college-level communications and composition courses as well as remedial-level composition courses.

**Virginia.** A full-time member of the faculty, Virginia was a 47 year old female who was hired by the Midwest South campus 10 years ago. She taught college-level courses in business administration and accounting. She had no teaching experience beyond the classes she taught for the Midwest South campus.

**Nancy.** Nancy was a 48 year old female and a part-time faculty member of the Midwest South college campus. She began teaching for the college three years ago and had taught courses in basic computer use and introductory business administration. She had also taught on-line courses for the college.

**Mary.** Finally, Mary was a 59 year old female who had been a part-time member of the Midwest South campus faculty for eight years. She had also worked all of her adult life as a teacher in the public school system teaching writing and language arts in both middle school and high school. Mary originally taught the first year English composition course for the college, but decided that she was better suited to teaching developmental level English courses.

### **Convergent Themes**

There were several interesting convergent themes that arose during the interviews. These themes included plagiarism due to ignorance versus intentionality, lack of student objections to the use of TII, potential for difficulty using TII, impact on teaching strategies, and the

replacement of TII with an alternate plagiarism detection tool. Each theme is discussed in the sections that follow.

*Plagiarism due to ignorance versus intentionality.* It was clear during the interviews that all participants believed that some cases of student plagiarism stem from ignorance of the expectations of academic writing or an incomplete understanding of appropriate citation conventions (be they APA, MLA, etc.). These inadvertent or unintentional cases of plagiarism seemed to be distinct in the minds of the interview participants from cases of *real* or intentional plagiarism wherein the student knowingly uses a source without citing it or otherwise plagiarizes with intent to deceive and to present the plagiarized work as his own.

A significant issue for faculty in this study was what to do with clear cases of plagiarism. During the interviews, participants were asked how they handled situations of *real* plagiarism – that is situations wherein they had solid proof that the student had plagiarized the assignment and not just made a mistake in how they cited a source.

All of the participants indicated they sought to turn the situation into a learning opportunity for the student, even if they felt the cause of the plagiarism was from a student's intent to cheat or deceive. While some form of punishment might be appropriate, the participants were much more interested in seeing the student learn from the mistake and correct his or her behavior. None of the participants appeared to take the issue of plagiarism lightly, however they all expressed a desire to address the issue by helping the student learn from the mistake or poor decision he or she had made.

All of the interview participants appeared reluctant to varying degrees to admit that a student might have purposefully plagiarized on a writing assignment. It appeared to the researcher that the interview participants did not want to assume that a student intentionally

plagiarized unless they had iron-clad proof of the offense. Even in those cases, at least some of the participants indicated that they gave the student the opportunity to re-write and re-submit the assignment.

Regardless of the suspected level of intent of the student writer to plagiarize, in most cases the interview participant gave the student the opportunity to re-write and re-submit the assignment. Sam indicated that when he discovered one of his students had plagiarized he “. . . gave the student an incomplete and told the student ‘you have 30 days to get this in to me correctly done. There’s plagiarism here.’” It was Sam’s desire that the student recognize the error and then provide evidence that he could correctly complete the assignment without resorting to plagiarism. In this particular case the student eventually earned an F for the assignment, but only because the student refused to complete the assignment and turn it in by the 30-day deadline.

Several of the participants expressed, like Sam, that it was important to take a more developmental approach to plagiarism situations, rather than taking a punitive one. None of the participants indicated a desire to punish a student. In fact, it appeared to the researcher that several of the participants went out of their way to allow students to re-write and re-submit plagiarized papers.

Some participants indicated that if the student repeatedly plagiarized, then the penalties should increase in severity. Fred stated “I want to make sure that if it happens a second time that there’s an escalation in the punishment. . .” However, this was only after first attempting to teach the student about the seriousness of plagiarism and how to avoid it in future writing assignments. While the consensus from the participants was that penalties ought to increase for students who repeatedly plagiarize, none of the participants identified instances of directly

dealing with a repeat offender situation. It was difficult to determine if the faculty participants would have indeed imposed stiffer penalties on re-offending students or if they would allow the plagiarism behavior to go unpunished.

*Lack of student objections to the use of TII.* A second convergent theme that came to light during the interviews was the issue of student objections to the use of TII. None of the participants reported any significant resistance from students regarding the use of TII in their classes although some of the participants speculated that there might be concerns expressed from some students when they learned that they could more easily be caught cheating. Several of the participants mentioned that while they may have had students drop their course at the beginning of the semester, none of the students indicated they were dropping due to concerns or fear of TII.

Elizabeth indicated that she had given some thought to the possibility of students objecting to the use of TII in her classes. She said,

Well, you know I had done some reading about this [student objections to TII] in advance [of implementing TII] and I knew that in some places students protested it, but in my experience I never ran into that. No one ever said ‘Oh no, you can’t do that. It’s violating my rights.’ We had a statement that we put into the syllabus and we let them know right up front that this was going to happen.

Charles agreed that students did not protest the use of TII in his classroom saying “No, I’ve never had anyone say anything about it [using TII in the classroom].” Jane also agreed. She characterized student reactions to having their papers reviewed by TII as “just another thing”. Virginia’s comments were similar. When asked about student reactions to learning TII would be used in class she said “I’ve never had any adverse reactions. It’s always just been part of the process and they expect it as a requirement of the course.”

The faculty participants from both campuses appeared to have made it very clear to their students that they would be using TII to detect plagiarism. All of the writing classes at the Midwest South campus were required to use TII as a departmental policy. In addition, the Midwest South campus introduced TII in the one-credit freshman seminar course required of students in all majors. Faculty participants on both campuses indicated that the use of TII was included in their course materials and discussed as a requirement of the course.

Two of the four participants from the Midwest Central campus indicated that there was an alternate assignment created in anticipation of student objections. In short, if the student objected to having his or her paper submitted to TII, then the student would be permitted to complete the alternate assignment. This alternate assignment would not be submitted for review by TII. This alternate assignment required the student to complete the original assignment and to also include copies of documents cited in that paper as well as a written description of how the student went about the research. In short, the alternate assignment was made to be significantly more difficult than the original assignment. As Fred indicated in his interview “. . . we basically made the alternative so hard that they would probably go; ‘No I’m not doing that. What the heck. I’ll just use Turnitin™.’” While the faculty at the Midwest Central campus appeared to have anticipated the possibility of student objections to the use of TII, the need to create an alternate assignment turned out to be unnecessary.

***Potential for difficulty using TII.*** A third theme explored during the interviews was the potential for difficulty in using TII. Generally speaking, the participants reported little difficulty using TII with some indicating they had no difficulties at all. Many indicated that there was a little work to do initially to set up TII for their classes, however even this was not reported as being particularly challenging. One participant, Fred, discovered that it was much easier to have

each student set up their own account on TII and then assisted the one or two students who had difficulty rather than do all the set up work for the students. He stated:

I was teaching three or four sections and decided I'm not going to do this anymore [set up the student accounts for the students]. It's always easier if you let them try and of those two or three who are totally lost, well then you can help them do it [set up their TII account].

Mo echoed this sentiment and mentioned that rather than spend valuable class time working through the set up process, he just stayed after class with the few students who had some trouble getting their account set up. He said "With Turnitin™ some students had difficulty going to the web page and going through the steps [of creating their TII account]."

Fred also mentioned that on some occasions TII seemed to not accept certain file formats. Charles specifically recalled that when Microsoft™ Word 2007 was first released, TII did not accept its new file format; ". . . like the new .docx file, for a while it was eating those." This problem did not seem to last long according to Charles, however. None of the participants expressed any particular frustration even with the occasional problem of TII accepting a particular file format. None of the other participants recalled any specific difficulties in using TII.

***Impact on teaching strategies.*** Another convergent theme uncovered during the interviews centered on the potential impact the use of TII might have on how the faculty participants taught their respective courses. To that end, all of the interview participants were asked about how TII had changed they way they teach. None of the participants indicated that the introduction of TII to their courses required any significant change in the way they taught

their classes. Elizabeth stated “No, I don’t think so.” when asked if she made any changes to her classes once TII was implemented.

Of course, they now had to discuss the use of the tool with students, which set the stage for a discussion of plagiarism and proper citation of sources; however the faculty participants already addressed the issue of plagiarism with their students to a greater or lesser degree. Fred stated that his course syllabus had “specific instructions stating what plagiarism is” and that he discussed the topic in class with his students. The originality reports from TII gave faculty members a chance to discuss problems with plagiarism, but prior to using TII, the faculty already had the same sorts of discussions with plagiarizing students that they caught by other means. They also included statements on their course outlines about plagiarism.

There were some faculty, especially those teaching developmental level courses, that incorporated classroom exercises to help students better understand plagiarism. None of the faculty indicated that the introduction of TII made any significant change to the way in which they did or did not cover the topic of plagiarism in their courses, however, or to the specific plagiarism related assignments, if any, that they implemented in their courses. In addition, one interview participant, Elizabeth, explicitly mentioned that she had set up her classes so the students could submit their papers and see their own originality reports before finally submitting the paper for a grade. Elizabeth said,

It was nice that you could set it up so they [the students] could see their own originality report so you could use it as a training tool so the students could run their drafts through there first and then go ‘oops!’ and run their drafts through there again.

While the faculty participants did not report any notable changes in the way they taught their classes, it appeared the use of TII did change the way they administered their courses. All

seemed to agree that using TII made the task of spotting plagiarism much easier. As Jane stated “That [TII] really makes your job easier as a teacher.” Not only was the process of spotting plagiarism easier, it was also more efficient with TII. Virginia said “From my perspective, it makes my ability to check for plagiarism much more efficient instead of cutting and pasting into Google.” Prior to the implementation of TII, Virginia (and presumably many other faculty) simply cut and pasted suspicious sections of text into the Google search engine and looked for web pages with matching text. This approach was certainly less efficient than using TII in that Google is not designed as a plagiarism detection tool, but rather a web search engine. As such, it searches for web pages with text that matches or is similar to the text that is submitted by the user. It does not include the database of submitted papers that TII does nor does it provide a user friendly report designed to help users who are looking for plagiarism. In addition, when using the Google search engine to search for plagiarized text, the results page generated by Google lists links to web pages that match the submitted word or string of text. The user must still click on the link and search for the location on the web page that includes the matching text. Implementation of TII allowed the faculty to stop searching for plagiarism by just using the fairly cumbersome process of a Google search.

In addition, using TII in their classes added a step to the grading process. Prior to using TII, one assumed that the participants checked for plagiarism when they spotted something unusual or suspicious in a student essay. With the incorporation of TII, all student papers were submitted for review and this no doubt required the faculty participants to at least review the results of the TII originality reports. As Charles stated when asked about how TII changed the way he taught, “Not how I teach. It adds a step to grading.”

This additional step came from the fact that now the faculty were using TII to check every submitted student paper. Prior to the implementation of TII, most student papers were not checked for plagiarism except for those cases when a faculty member thought something in the submitted paper looked suspicious. Prior to implementing TII, it was possible for an entire class of students to submit a written assignment and, unless the faculty member saw something they felt was suspicious in the student writing, there would be no formal check for possible plagiarism. As a result, implementing actually added a step to the grading process for these faculty.

***Replacement of TII with an alternative tool.*** Finally, the faculty on the Midwest Central campus discussed the use of another plagiarism detection tool – Safe Assign™. The participants at this campus had very recently made use of an alternate plagiarism detection tool. This tool was incorporated into Blackboard™, the on-line course delivery software used by the college. Safe Assign's™ one advantage was its lower subscription price for the college. Of the four participants from the Midwest Central campus three indicated they had reservations about its effectiveness. The fourth participant had no particularly strong feelings either way regarding Safe Assign™ versus TII.

Fred indicated that he was “. . . not that confident with it (Safe Assign), but it is better than nothing.” Elizabeth stated that

We used Safe Assign™ because it was free. We used it for about a year. Safe Assign™ doesn't really do the job and TII is much better at what it does. We had so many problems with Safe Assign™ that it wasn't worth the time.

Elizabeth also noted that TII just seemed “. . . a little more robust” than Safe Assign™.

Mo echoed the same sentiment. “. . . I believe Safe Assign™ has not been as effective in detecting plagiarism as TII was. That may be my bias or my mistaken assumption, but I get the feeling that Safe Assign™ missed getting a few things.” Mo mentioned that he had seen student papers that appeared to him to not be the student’s original work based on what he had seen the student produce earlier in the semester. Safe Assign™ failed to identify any instance of plagiarism in some of these papers which led him to fear that Safe Assign™ was not as effective as TII in spotting matching text sources.

In summary, the faculty participants from the Midwest Central campus seemed to share a lack of confidence in Safe Assign™, the new plagiarism detection software made available to them by the college. This lack of confidence seemed to lead to frustration; they were aware of the robustness of TII and thus had first-hand contrasting evidence of the new tool’s limitations. Also, when faculty users of the new software began to doubt its effectiveness, the researcher inferred that they stopped using it altogether (thereby defeating the purpose of adopting a plagiarism detection tool) or ended up spending their time double checking the findings of a software package they do not trust.

**Divergent themes.** The interviews also surfaced some divergent themes, ones that either were outliers in perspective or that highlighted differences of viewpoint. The divergent themes identified were the issues of faculty training with TII and the extent to which the faculty participants sought to teach their students about plagiarism.

***Faculty training on TII.*** The nine participants had a variety of experiences and opinions on the issue of training faculty to use TII. Two of the participants stated that they received no training at all. Four indicated they received some sort of informal training. This included asking fellow faculty members for help on how to use TII as well as spending some period of time with

another faculty who was better versed in using TII. Three of the participants indicated they underwent a formal training session of some sort - either a training video or a formal class designed to teach faculty how to use TII.

At the Midwest Central campus, it was evident that a formal effort to train the faculty in the use of TII was made. Three of the four faculty participants indicated they received formal training. In fact, Elizabeth explained that her training included a training video that had been created by the computer technology support staff. She said:

We have a very good technical support staff here and our tech person had created a mini-tutorial that was like a video. I think he used Camtasia™ [a software package for creating web-based and mobile device-based videos], so we could just play that in class. So I watched it first and learned how to use it and then I would show that to the students so we had a little training video we used.

It was odd that one of the four participants from the Midwest Central campus clearly stated that he did not receive any training – formal or otherwise while the other three were clear in describing what appeared to be a formal, even robust attempt at providing faculty users with training on the use of TII. When asked what sort of training or guidance he got about using TII, Charles answered emphatically, “None. I was given a login and told to go to their website.”

Both the Midwest Central and the Midwest South campuses had one faculty participant who indicated he received no training in the use of TII while the three or four other participants from their campuses indicated varying degrees of formal and informal training in the use of the software. Given their comments it appeared that the two faculty did not remember the informal training they received from a colleague, were unaware of the training opportunities and/or failed

to take advantage of them. None of the participants indicated that the training, whatever form it took, was mandatory.

When asked about the need for training most faculty indicated that they were able to pick up on how to use TII fairly quickly without needing extensive formal training. One participant, Fred, stated “I just don’t remember having to learn much about it. It was pretty easy to use.” Another participant, Jane, indicated that TII was not difficult for her to learn, stating “Yes, this is pretty simple, straightforward stuff.”

Nancy indicated that she found learning to use TII somewhat difficult and would have benefitted from some form of additional training. “I think if I would have had a little more training on it, not that I had many, but the frustrations I had probably wouldn’t have been as bad if I had a little more training.”

***Teaching students about plagiarism.*** A second divergent theme concerned the extent to which faculty participants reported taking explicit steps to teach their students about plagiarism. Participant responses differed in this area, mainly depending upon the level of the courses the participant normally taught. For example, Fred taught college level history courses. In his case, he expected students to have already been taught about plagiarism by the time they reached his class. He stated, “I really don’t spend a lot of time going through specific details of what plagiarism is because I really think they should have got some of this beforehand.”

Mary, who taught primarily pre-college level reading and writing courses, included a number of classroom exercises to help students learn about plagiarism. She spoke about those exercises in this way:

One of the things I do is try to have them read and then paraphrase. I will give them things from magazines and in so many words or less I ask the students to tell me what this is about. Then we talk about documentation, whether that's MLA or APA.

Exercises such as these allowed Mary the opportunity to discuss with her students the differences between direct quotations and paraphrased text in the context of appropriate source documentation. Interestingly, Mary did not use TII in these plagiarism education exercises.

Of all the study participants, Elizabeth best nuanced the ways in which she had integrated plagiarism education into her classes:

I think it depends on the class I'm teaching. In English 111 [a first semester, college-level writing course] we have a unit on it [plagiarism]. We talk about it in class and they do exercises. They have group work and they debate about what kind of punishment people should get. We talk about plagiarism cases in the news and we really try to raise awareness, but if I'm teaching American literature which is a two-hundred level course, I'm going to assume that those students know what plagiarism is so I just have a policy in the syllabus, but it's not really a topic.

Elizabeth also indicated that she tried to create her writing assignments in such a way as to make it more difficult for students to plagiarize. She said "I try to avoid assignments that just ask for pure facts . . . you really need to have assignments that draw on critical thinking and your own individual analysis." According to Elizabeth, these sorts of assignments require more than just a recitation of facts and figures and are therefore somewhat harder to just cut and paste from the internet.

None of the participants indicated they made use of TII to help educate students about plagiarism other than simply having the students submit their writings and looking at the

resulting originality report. All of the participants who discussed the issue indicated they had a statement in their syllabus about the importance of avoiding plagiarism. In fact they all used a standard statement adopted by the community college system-wide. College policy required this statement be included in all course syllabi and none of the participants indicated that they included any additional statement beyond that required by college policy. The statement read as follows:

The College is committed to academic integrity in all its practices. The faculty value intellectual integrity and a high standard of academic conduct. Activities that violate academic integrity undermine the quality and diminish the value of educational achievement. Cheating on papers, tests or other academic works is a violation of College rules. No student shall engage in behavior that, in the judgment of the instructor of the class, may be construed as cheating. This may include, but is not limited to, plagiarism or other forms of academic dishonesty such as the acquisition without permission of tests or other academic materials and/or distribution of these materials and other academic work. This includes students who aid and abet as well as those who attempt such behavior.

### **Summary**

In summary, while the quantitative portion of the study did not identify any significant relationships between suggestive plagiarism and the various independent variables, the qualitative portion of the study did shed light on a number of convergent and divergent themes. The following chapter provides a discussion of the results of the study as well as areas for future research.

## CHAPTER 5

### CONCLUSIONS AND RECOMMENDATIONS

The purpose of this study was to better inform community colleges, administrators and faculty regarding possible factors that contribute to higher levels of student plagiarism and to suggest appropriate preventative or responsive interventions. Specifically, the study sought to investigate a set of faculty related factors that may be associated with particular levels of plagiarism.

The quantitative portion of the study via regression analysis did not reveal any significant relationships between suggestive plagiarism and the various independent variables. The qualitative portion of the study, however, did yield some interesting themes and areas for future research. This chapter discusses these themes and their potential meaning, particularly in light of previous research. A set of institutional policy and practice recommendations is provided followed by the study limitations and opportunities for future research.

#### **Discussion of Study Results**

**Quantitative findings.** As described in Chapter 4, the statistical analysis of the variables under study did not yield any significant relationships. Although these findings should be considered only suggestive for the design limitations reasons referenced earlier, they are nonetheless worthy of some researcher reflection in light of previous research.

In the researcher's opinion, two of the variables examined in the study – age and years of service – were the variables of those studied that were expected to yield some sort of relationship with suggestive plagiarism. It would seem reasonable that younger and less experienced faculty might experience more instances of plagiarism than more experienced and older faculty simply because the younger and less experienced faculty might not have the knowledge or experience to know how to address issues of plagiarism or most effectively initiate efforts to prevent it. Some students might feel that with a younger and newer faculty member they might be able to get away with behaviors (such as plagiarism) that an older, more experienced faculty member might spot and address quickly. Research by Newstead, Franklyn-Stokes, and Armstead (1996) found a relationship between cheating behaviors and student age. Specifically their research found that younger students were more likely to engage in cheating behaviors; however the literature is silent on any such relationship between plagiarism and faculty age.

However, in the study, neither variable was significant. Yet, the age variable did approach significance suggesting that older faculty may experience greater levels of student plagiarism. This counter intuitive finding infers the possibility that the younger faculty may in fact have been more socialized to the ubiquitous nature of the internet and the easy access of information than their older faculty counterparts, heightening their potential for engaging in proactive interventions to prevent it. It may also suggest that students are less likely to plagiarize in a younger faculty member's class out of the belief that the younger faculty member is more attentive to the issue. Regardless, there was not enough quantitative evidence to suggest a true relationship.

**Qualitative findings.** As discussed in Chapter 4, there were a set of convergent themes that emerged from the interviews. In summary, those themes were plagiarism due to ignorance

versus intentionality, student objections to the use of TII, potential for difficulty using TII, impact on teaching strategies and the replacement of TII with an alternative tool. As regards the divergent themes, they included faculty training on the use of TII and teaching students about plagiarism.

In the section that follows, reflections on the themes are presented in light of previous literature and what they might suggest about faculty orientations to plagiarism, its degree of seriousness and its prevention. This discussion provides helpful insights into what may be leading to increases in student plagiarism in higher education (Council of Writing Program Administrators, 2003; Hansen, 2003; Lathrop & Foss, 2000; Park, 2003; Wilcox, 2005b) and the degree to which faculty may be contributing to the increase and/or failing to recognize its pervasiveness.

**Handling real plagiarism.** The only interview participant who expressed anything like a desire to see a plagiarizing student punished was Fred when he stated “I want to make sure that if it [plagiarism] happens a second time that there’s an escalation in the punishment. . .” This was the sole comment made by all of the faculty participants that mentioned the idea of punishing a student, even in clear cases of intentional plagiarism. In light of the research literature that evidences student plagiarism is wide spread and may be increasing in frequency (Council of Writing Program Administrators, 2003; Hansen, 2003; Lathrop & Foss, 2000; Park, 2003; Wilcox, 2005b), this suggests some degree of faculty denial over its seriousness. Every participant indicated a desire to turn the incident of plagiarism into a learning opportunity by showing the student where he had plagiarized and giving the student an opportunity to re-write and re-submit the assignment. None of the interview participants indicated a desire to punish or

apply some sort of negative consequence to the student who had plagiarized, even in cases of *real* plagiarism, other than the somewhat vague reference noted above.

There were a number of factors that might be at play here that could shed some light on the reasons behind this sort of response. First, there was some evidence that faculty may be concerned about the potential for ruining a student's academic career should the faculty member pursue charges of plagiarism (Davis et al., 1992). A faculty member who spots an incident of purposeful plagiarism may decide that allowing the student to re-write and re-submit the assignment was a sufficient intervention and that pursuing the issue through the college's disciplinary system could be too costly for the student and/or fail to *teach* or incentivize them to cite works correctly.

Second, it may also be that the faculty member may fear becoming embroiled in a lengthy disciplinary case or even a lengthy legal case should the plagiarism issue result in disciplinary action that the student seeks to redress through the courts (Davis et al., 1992). Specifically, a faculty member may be concerned that initiating the disciplinary process may both remove control of the situation and its outcome from the faculty member and may end in a result the faculty member deems inappropriate. Once the institution's disciplinary process begins and an investigation is undertaken, the student may face a punishment more severe than what the faculty member originally had in mind. Also, once a disciplinary determination is made against a student, the student may seek to have such an action reversed through bringing a law suit against the institution and/or the specific faculty member. Both of these closely related issues speak to the fear or at least serious concern that faculty members may have in pursuing cases of student plagiarism.

Third, the responses of participants on this topic may actually be a case of their being concerned about how they were perceived by the interviewer (i.e. desire to be perceived as making *socially correct* decisions). Even though all participants were assured that they would remain anonymous, they may still have been concerned that they might appear in a negative light should they express to the researcher that in cases of clearly intentional plagiarism they would prefer the student receive some sort of punishment. One interview participant in particular, Nancy, may have felt some uncertainty about being perceived as having the socially correct response to student plagiarism when she said “I always give them the benefit of the doubt. Maybe I’m just a softie, but I always give them an opportunity to re-do the assignment. Always.” It seemed to the researcher that while Nancy was stating her conviction about wanting her students to learn from their plagiarism mistakes and allowing them to re-submit their writing assignments, that perhaps she was also seeking to reassure herself that she was only concerned for student learning – not concerned about punishing a student. Perhaps in so doing Nancy was concerned about how she might appear to the researcher if she made a statement that indicated she also thought the student should be punished.

**Student comfort in having TII integrated into the class.** As stated earlier, the faculty participants noted that they communicated to students that all papers submitted in their classes would undergo review by a plagiarism detection software program. None of the participants reported any student objections. This finding suggested that students may feel that expressing concern over the use of plagiarism detection tools could lead to undesired faculty attention to their work and to guilt by association (i.e. objections to the use of plagiarism detection software must mean that they plagiarize). The more savvy students could even avoid classes that used plagiarism detection software by taking the class with another instructor or at another campus.

This would not be particularly difficult considering the large number of on-line course offerings this Midwestern community college has available.

Of course the student who sought to avoid a class with plagiarism detection software might end up in another class that also used the software. While the participants in this study all stated that they told their students at the beginning of the class they would be using TII, it was possible that students who really did object could drop the course and register for another course or section that did not use plagiarism detection software.

It was also possible that students had become so accustomed to information technology resources such as the Internet, cell phones and iPods that TII appears to them as just one more in a long line of technology tools designed to replace the lengthy or difficult work teachers in past years did by hand. As such, TII may simply blend into the background with a host of other technology tools and enhancements students experience both inside and outside the classroom.

When asked how her students reacted to the news that their papers would be evaluated by TII, Elizabeth stated:

Well, you know I had done some reading about this and knew that in some places students protest it [TII], but in my experience I never ran in to that. No one ever said ‘Oh, no, you can’t do that [i.e. use TII]. It’s violating my rights.’ Now we had a statement that we put into the syllabus and we let them know right up front from the very first that this was going to happen. Since it was departmental policy they really couldn’t go to another class. Nobody ever protested.

In Elizabeth’s case, the students would have had to drop her course and enroll in another section of the course at a different campus to have any hope of avoiding the use of TII.

Mary's reaction was similar to Elizabeth's however she seemed to suspect that at least a few of her students did in fact object to the use of TII. Ultimately she did not indicate that any of her students had dropped her class after learning that their papers would be submitted to TII, however when asked specifically about her students' reaction when learning TII would be part of her class she said:

They don't like it. Well, let's put it this way – most are ambivalent about it. Now there are a few that don't seem to like it, but those are the few that I know want to get away with something and my answer is that we are using it [TII] and it is part of the course.

It was interesting to note that Elizabeth had only been employed by this community college for three years while Mary had been employed there for eight. Perhaps Mary's longer time at the institution or her experiences there had led her to be more suspicious of her students. Of course this was impossible to establish definitively from the interviews, but it was an interesting albeit minor difference in perception of student motivation and reaction.

**Ease of software tool use.** None of the participants indicated any major difficulties in using the TII software. In the researcher's opinion, this was not surprising as the software is fairly straightforward to use as it includes several easy to follow directions and help features. Once the software was made available to the faculty member, they only need to submit an electronic version of a written document for evaluation via the TII website. It was also permissible for the faculty member to allow (or even require) students to submit their papers for evaluation via the TII website.

After being submitted to TII for evaluation, an originality report was generated and made available to the faculty member via the TII website. The time required for TII to complete its evaluation and return an originality report varied from minutes to hours to even a few days,

though delays of more than a day were rare. This depended largely on the demands on the TII service at the time of submission. Once the TII originality report was returned, the faculty member can view any instances of matching text in the student document in a two pane display. In one pane, TII shows the submitted text and in the other pane it shows the source of the matching text. The software also gives the user the ability to select and de-select portions of text or types of matches. For example, the faculty user has the ability to *turn off* instances of matching text where the original submitted text is in quotations. This is a particularly helpful feature in that it eliminates from consideration as plagiarized text those passages in the student's paper that are direct quotes (and were therefore included in quotations in the submitted text).

What were noted as challenges focused on compatibility issues (i.e., problems with file formats) and easily rectified. What was interesting in this arena, however, was the implication of a switch to a different tool and how that change led to concerns. This is discussed at some length in a later section of this chapter.

**Impact on teaching strategies.** It was surprising to the researcher that the interview participants indicated that the addition of TII to their classes had no impact on their teaching strategies. Of course the faculty using TII now had the additional task of reviewing originality reports generated by TII and the additional task of teaching students how to submit their papers to TII. This aside, the faculty participants indicated that adding TII to their classes did not alter the way they taught their classes.

The fact that the participants indicated the inclusion of TII had no significant impact on the way they taught their classes was especially surprising as it regarded those faculty teaching freshman composition or remedial level writing classes. These were the courses in which faculty typically made an intentional effort to educate students about the dangers of plagiarism and what

to do to avoid it. Even for those interview participants who indicated that they did teach students specifically about plagiarism, none of them identified new teaching strategies that incorporated TII. For example, they might have had students submit practice papers with differing levels of plagiarism and the results of the TII originality report would not only serve to teach students about TII, but about the various common mistakes students make regarding plagiarism. Furthermore, they could present the students with sample writings that include plagiarized text and ask the students to identify the sections they thought were plagiarized. Those papers could then be submitted to TII and the originality reports could be compared to the students' findings to help students gain a better understanding of plagiarism. Finally, there existed a plethora of resources devoted to teaching students about plagiarism and helping them learn to avoid it (Barry, 2006; Born, 2003; Klausman, 1999; McCullen, 2003) that could be incorporated with the use of TII.

One of the faculty participants did shed some light on the issue of the impact TII had on teaching strategies. When asked about any changes she made to her classes and the way she taught them once TII was introduced, Nancy stated "I never developed the courses that I have been teaching so I didn't alter them very much." Nancy, like many of the faculty at this college was a part-time employee. As such, she delivered the course content and taught the course; however as was evidenced by her comment, she was not involved in the development of the course she taught. For this reason she may have felt limited in the extent to which she could modify the course. If the originally designed course as given to her did not include exercises of activities that took advantage of TII as a teaching tool, then perhaps Nancy and other part-time faculty felt that adding such activities or assignments would be outside their area of authority.

**Replacement of TII with an alternative tool.** As noted earlier, faculty on the Midwest Central campus were asked to switch to a new plagiarism detection tool shortly before this study was conducted. The findings indicated considerable disappointment in the new tool, Safe Assign™. Although none of the faculty participants were able to point to a specific case wherein they caught an instance of plagiarism with TII and not with Safe Assign™, it was clear that they felt Safe Assign™ was not as effective or robust as TII.

Fred made this feeling clear when he stated,

With Safe Assign™ - I have got to be honest – I have had essays that I have thought might not be original and Safe Assign™ is saying it's like 7% unoriginal which means its got three words in it in the same order as somebody else. I guess it's just that sense you get because you've only read about five thousand papers in the last year.

and again when he said;

I'm not that confident with it [Safe Assign] but I guess it's better than nothing. Up in the distance ed [department] at central office they're all pretty confident that it [Safe Assign] works well so until I have real proof or something I've got to go with it.

Fred's comments were echoed, albeit with a bit less sarcasm, by Mo. Mo stated "I believe Safe Assign™ has not been as effective in detecting plagiarism as Turnitin™. That may be my bias or my mistaken assumption, but I get the feeling Safe Assign™ missed getting a few things."

Elizabeth agreed stating "Safe Assign™ doesn't really do the job and Turnitin™ is much better for what it does."

This finding was not entirely surprising as TII had been building its own database consisting of submitted papers for more than a decade. According to the TII webpage submitted papers are checked against a database that includes over 12 billion web pages, over 100 million

student papers, over 80 thousand major newspapers, magazines and scholarly journals and thousands of books including literary classics (iParadigms, n.d.b).

**Faculty training on TII.** As mentioned in Chapter 4, there was a wide variety of experiences on the topic of training and TII. Some of the faculty interview participants indicated that they received training of one sort or another. Others stated that they were simply given access to TII and had to figure out how to use the software on their own. Fortunately from an implementation standpoint, none of the faculty found learning or using TII to be particularly difficult, otherwise those faculty who received no training might not have used the tool effectively. Perhaps administrators or faculty leaders on the two campuses decided that mandatory training was not required of their faculty due to the ease of use of TII.

As stated earlier, it appeared that the Midwest Central campus did make some effort to provide faculty with training. The effort on the Midwest South campus appeared perhaps less coordinated or intentional. When asked about the kind of training she received, Nancy, a faculty member on the Midwest South campus, indicated;

They discussed Turnitin™ at our adjunct orientation. They have an orientation at the beginning of every fall semester. So they would break [the program] up into different topics like one time some one from the English department would get up and talk about this new tool that the school had. At that particular orientation they broke up into little round robin sessions and you would go to different subjects.

It is unclear if this was the only formal training offered to faculty in the use of TII, but no other interview participant indicated that they remembered any other formal training session. While offering some training and exposure to TII at the aforementioned faculty orientation would serve to reach a large number of faculty, it most likely did not allow faculty the opportunity to interact

with the software much or to ask many questions about its use or implications for the classroom. Sam stated that he “didn’t receive any formal training. I received just informal directions, not really training, and it took me a while to learn all the aspects of Turnitin™.”

On the Midwest Central campus there were also a variety of responses to the question of training in the use of TII. Charles stated emphatically when asked what sort of training he received “None. I was given a login and told to go to their website and they have instructions there when you login. Well, they did more or less – it’s sort of trail and error.” Mo, also from the Midwest Central campus, had a different experience and stated “Yes, we had formal training sessions and then we had continual assistance from our folks on campus. Any time I had a question, I would go to them first.”

This wide variety of experiences and responses may be due to the difficulty of communicating effectively with a large group of full-time and part-time faculty. It did seem clear that administrators and/or faculty on both campuses made an effort to provide some sort of training in the use of TII, however the way the faculty interview subjects experienced this varied tremendously. Some indicated they attended formal training sessions while others described their experience as an almost sink or swim situation.

Several college and university websites include training material aimed at helping faculty make use of TII (Pennsylvania State University, n.d.; University of Maryland, n.d.; University of West Florida, n.d.). The TII website itself includes a number of faculty training resources as well that would be useful for campuses to use in an intentional way. These materials could serve as a starting point for the Midwest Central and Midwest South campuses to develop their own formal training program in the use of TII and in developing web-based resources as well. It was

clear that at the very least the availability of training opportunities for faculty at these two campuses was not widely known by the faculty.

**Teaching students about plagiarism.** This theme provided perhaps the greatest range of responses from the interview participants. Some of the faculty interview participants stated that they expected students to have a fairly good grasp of what exactly constitutes plagiarism. Others described the activities they undertook in their courses to teach students specifically about plagiarism. The primary factor that appeared to divide these types of responses was the level of the course(es) the faculty member taught.

Fred, a faculty member who taught college level history courses had a fairly high expectation of his students regarding their awareness of plagiarism and how to avoid it. When asked how he taught his students about plagiarism in his courses he said “I don’t spend a lot of time on it. I do let them know that for a history paper you don’t use MLA, you use Chicago style. You know, its bibliography style.” Later Fred also stated “I have specific instructions – this is what plagiarism is – and there is a section in the syllabus that says plagiarism is this. I don’t spend too much time on that.” He also said “I really don’t spend a lot of time going through specific details of what plagiarism is because I really think they should have got some of this beforehand.”

Another interview participant who taught college level courses, Mo, indicated the same sentiment when he said “No, I do not define plagiarism in the syllabus.” These comments contrasted with those of Mary, an interview participant who taught exclusively developmental level courses. As described in Chapter 4, she made a very conscious effort to explore plagiarism with her students and to help them develop skills in paraphrasing and proper citation of sources.

There was an identifiable gap in the ways in which students at this Midwestern community college were taught about plagiarism. If it was true that there was little or no instruction in how to avoid plagiarism in college level classes (except for specific composition courses) at this community college, then it is likely that a number of students with limited awareness of the rules of proper academic citation were enrolling in classes taught by faculty who have an expectation that exceeds their students' knowledge. A quick overview of the course pre-requisites for some of these courses (such as Fred's U.S. History course) shows that completion of the college's freshman composition course was not required before enrolling. Hence, students who do not take freshman composition at the beginning of their academic career and who were not placed in developmental level writing courses may never be exposed to any formal instruction on how to avoid plagiarism.

### **Implications for Practice and Institutional Policy**

These findings suggested several implications for practice and institutional policy. First, even though the process of educating students about plagiarism was difficult as was the process of identifying plagiarism, faculty and administrators in higher education must continue their efforts to both identify and prevent plagiarism. Understanding the written thoughts of those who have gone before and then integrating those into a new understanding is an important part of the advancement of knowledge. In order for this to occur, the distinction between which intellectual ground has already been explored and that which remains untrodden is an important one. If students are allowed to incorporate the writings of others without attributing their sources, this distinction disappears and the faculty charged with evaluating student writing are faced with an impossible task. This was a sentiment shared by all the faculty interview participants, even those who stated that they did little themselves to teach students about plagiarism, and by countless

writers on the topic of plagiarism (Chao, Wilhelm & Neureuther, 2009; Howard, 2002; Soto, Anand, & McGee, 2004).

Second, as was seen in the interviews conducted for this study, faculty participants had a range of experiences in implementing and using TII. While some stated that the software was easy to use and required little training, others expressed a desire for some formal training in its use. A systematic training program developed by classroom teachers for classroom teachers would help alleviate this problem. As mentioned earlier in this chapter, there are many existing university web pages that provide information for faculty in how to make use of TII. These could serve as models for other colleges and universities who seek to develop their own faculty resources and training opportunities. It stands to reason that if an institution is willing to spend a significant amount of money on the license to use a software product like TII, it should seek to get the greatest return on its investment by making sure its faculty users are well versed in the features of the software.

Recent research studies have shown that there are effective techniques for teaching students about plagiarism (Soto et al., 2004; Chao et al., 2009). Several of these ideas and suggestions could be incorporated into the faculty training program as well as a comprehensive overview of the TII software. The TII website also provides several resources to help users understand the features of the software. Such a program could be delivered in a traditional classroom or seminar setting, but ultimately it might best be accomplished by providing resources on the college's website. This would allow faculty users of TII to access the training information at essentially any time.

Third, community college faculty should seek to work with K-12 schools to help the teachers in those institutions gain a greater understanding of the expectations colleges and

universities have for students in the area of plagiarism. As noted by Hansen (2003) and Noskin (2005) plagiarism is a significant problem in high schools. Perhaps by working with high school teachers, community college faculty can help address the plagiarism problem in high schools and help to limit its occurrence in colleges and universities.

Such a partnership could involve community college and high school English teachers sharing information on the types of assignments they typically give their students and the particulars of how they teach their students about plagiarism. Perhaps there is a disconnect between what community college faculty expect students to know and what high school teachers are sharing with their students. Community college faculty could provide their local high school colleagues with any written policies or procedures on plagiarism, such as statements in course outlines or student handbooks. This would help high school faculty gain a clear understanding of what will be expected of their students should they continue on to the community college after high school.

Fourth, as was observed in the qualitative portion of the study, none of the faculty interviewed made specific and intentional use of TII as a plagiarism teaching tool. Certainly by allowing students to submit their papers to TII and to then review the originality report, the faculty were providing students an opportunity to learn about their own writing and any instances of plagiarism it might contain. However, there are opportunities for greater use of TII as a teaching tool. Perhaps papers with specific kinds of plagiarism (e.g. failure to include quotation marks around a direct quote) could be submitted to TII. Students could also be given copies of these papers and asked to identify plagiarism violations. The TII originality report for this sample paper could then be reviewed as a way to help students better understand what does and what does not constitute plagiarism.

Fifth, according to the faculty interviews from the Midwestern Central campus, TII appeared to be a better tool than Safe Assign™ due to TII's ease of use and more robust plagiarism detection ability. While colleges and universities across the nation are struggling with reduced budgets, the cost of the subscription fee cannot be the only or even the primary determining factor in selecting a plagiarism detection tool like TII. Assuming an effective training program has been developed to help educate the faculty in the use of TII, the additional cost of the software over other services could be justified by the more robust nature of TII and by its relative ease of use.

At the least, community college faculty and administrators should be encouraged to undertake a serious evaluation of all available plagiarism detection tools. It was obvious from the faculty interviews that there are perceived and mostly like real differences in the efficacy of various plagiarism detection software packages. It would be well worth the effort for community colleges to establish benchmarks for performance and take the time and effort to review several plagiarism detection tools including TII. A small investment in a tool like TII might well produce a significant return in terms of faculty productivity.

Sixth, the Midwest Community College in this study should investigate the feasibility of instituting disciplinary bodies that include students as judges of their peers. In addition, the college should investigate instituting a college-wide honor code.

Finding a way to incorporate students into the investigation and adjudication phases of the disciplinary process would provide those students with a valuable experience in the college disciplinary process. These students also have an interest in the disciplinary process as presumably they, being students who do not or have not plagiarized, are arguably one of the

parties harmed by those students who plagiarize or otherwise violate college standards of conduct.

Incorporating an honor code into the college disciplinary process also has merit. McCabe (2005) has found substantial evidence that college honor codes and a general climate of academic integrity act as a deterrent to student misconduct. Instituting an honor code could help reduce the likelihood of students plagiarizing in the first place.

Seventh, iParadigms, the creators of TII, might reconsider the way in which TII records originality scores in order to better facilitate quantitative research using their plagiarism detection tool. As described in the study above, TII reports originality scores by quartile, rather than the individual scores. In addition, it would not be very difficult for the TII report to include additional information about the instructor for the class or the class itself. Information such as instructor age or gender would be simple to include as would information about the particular class such as department, subject matter and level (college or developmental).

To make the TII report data even more valuable to researchers, iParadigms could incorporate a function into TII that allows a faculty user to record the originality report score after deselecting any matching text the faculty determines to have been correctly cited and therefore not plagiarized. This disconnect between actual plagiarism (failure to correctly cite a source) and suggestive plagiarism (any matching text) presented a significant limitation to this study. Allowing a faculty user to first remove correctly cited matches and then record the resulting originality report score would help address this issue and make TII a more useful tool for plagiarism researchers.

Eighth and finally, community college faculty should be encouraged to develop plagiarism proof assignments (Noskin, 2005). Such assignments serve to deter instances of

plagiarism as they are designed to focus on the writing process as much as the final product. By creating these sorts of assignments, it becomes very difficult for students to plagiarize by purchasing or borrowing a paper written by someone else. These types of assignments require the student to submit multiple drafts and show a number of revisions – something that becomes very difficult to do if all the student has is a final version of a paper purchased from an on-line paper-mill.

The literature reveals several ways to approach the idea of creating plagiarism proof assignments (Noskin, 2005). Noskin (2005) described writing assignments that begin with class discussion and student preparation for an in-class essay exam. The results of this in-class writing exercise become the basis for a paper the student will eventually create. Noskin stated;

When I return their papers a few days later, they have something refreshing; a theme written by them and free from plagiarism, since it was done in class. They have a paper filled with their own ideas, ideas that have already been revised in their own heads because we have continued our conversation by bringing in sources. (p. 15)

Students then seek out other sources for inclusion in their papers and are much less likely to end up with a plagiarized paper.

Johnson (2004) also described ways to create assignments that are resistant to plagiarism. In fact, he provided 16 qualities or features of assignments that produce a low probability of student plagiarism. Some of these qualities are;

They stress higher-level thinking skills and creativity,  
They involve varied information-gathering activities,  
They are often collaborative and can produce better results than individual work, and  
They allow learners to reflect, revisit, revise, and improve their final projects. (pp. 17-21)

These types of assignments typically involve finding ways to incorporate multiple iterations of the student's writing in the assignment process. They also seek to find ways to get students engaged in the writing assignment in an environment that is difficult to cheat in, such as with an in-class writing. None of these techniques are foolproof; however they do make it more difficult for students to plagiarize, especially in cases where a student's writing is evaluated at several points in the writing process.

### **Study Limitations and Opportunities for Future Research**

As noted in Chapter 3, there were several limitations to this study. The first of these was the fact that the TII originality report actually indicates matching text, and not necessarily plagiarized text. When viewing the originality report, it is quite easy to differentiate between the instances of real plagiarism and areas of matching text that have been properly cited. Future research projects could use actual student originality reports as a determinant of plagiarism. That is, the TII originality reports scores could be used if the researcher had access to those reports and could determine what represented real plagiarism and what represented matching text that was not plagiarized.

A second limitation of this study was the fact that only 22 of the 86 faculty in the original data set responded to a request for information about the nature of the classes they taught. Specifically they were asked if they submitted all student papers in their class to TII or if they only submitted those they thought looked suspicious. Also they were asked if their classes contained a high or low expectation of academic citations. Ideally, all or nearly all of the 86 faculty in the original data set would have responded, however only a quarter did so.

A third limitation of the study involves the ages of the faculty who were interviewed in the qualitative portion of the project. While a qualitative study does not require a representative

sample of the population under examination, for this study the nine interview subjects did not include anyone one standard deviation or more below the mean age. This was due largely to the difficulty in securing the agreement of a sufficient number of subjects for the interviews. In order to arrange for the nine interviews conducted in the study, the researcher explored the possibility of interviewing approximately 35 candidates. In many cases the potential interview candidate was unsuitable for one or more reasons. For example, some had moved away from the immediate area while others were either impossible to contact or when contacted declined to participate in the interview. A future study could interview younger faculty members to help shed additional light on the issue of faculty age and suggestive plagiarism.

A fourth limitation of this study was that it was conducted at a single community college in the Midwest. This limits the generalizability of the study findings. Replication of this study at other community colleges would expand its potential for understanding the plagiarism phenomenon. Also replication at different types of higher education institutions (four-year research universities, private liberal arts college, for-profit institutions, etc.) could also strengthen our understanding of faculty related factors and student plagiarism.

A fifth limitation was the faculty related factors that were chosen for this study. These factors were chosen primarily because they were available to the researcher through the community college's human resources departments. There may be other faculty related factors such as particular instructor interventions or the nature in which plagiarism is addressed in the classroom and/or on the course syllabus. Perhaps the size of the class or a student's income level or academic ability might be found to be good predictors of student plagiarism. All of these topics are suitable for future research.

While the quantitative portion of the study did not find any significant relationships between suggestive plagiarism and the various independent variables, the broader issue of using a measure of student plagiarism other than self reports was still valid and was still in need of examination. As discussed earlier most plagiarism research depends on self reports (Whitley, 1998) and there exist some concerns with the use of self reports, especially when asking subjects to self disclose negative behaviors (Cook & Campbell, 1979).

A strong theme that arose from the interviews was the sentiment expressed by all participants that when discovering student plagiarism, the primary goal should be to help the student learn from their mistake in hopes of preventing future incidents of plagiarism. This theme could be explored further in order to better understand the nuances of the developmental versus punitive dichotomy in faculty thinking regarding student plagiarism. Presumably there is a point for most faculty where their desire to help a student learn to avoid plagiarism is eclipsed by the desire to punish repeated plagiarism behaviors.

In addition, the perspective of students needs further exploration. How do college students in courses that use TII react to knowing their writing will be assessed for possible plagiarism? What does the inclusion of TII do to the relationship between teacher and student from the student's perspective? These kinds of questions were not explored directly in this study except through the perceptions of the faculty interviewed.

## **Conclusion**

Plagiarism is not a new phenomenon. Unfortunately, it is one that appears to be a growing problem in the higher education world (Council of Writing Program Administrators, 2003; Hansen, 2003; Lathrop & Foss, 2000; Park, 2003; Wilcox, 2005b) and therefore one that continues to warrant examination. This study sought to better understand the impact several

faculty related factors had on the likelihood of student plagiarism. While the faculty related factors of campus, age, gender, full or part-time status, and years since first hired did not result in a statistically significant relationship with suggestive plagiarism, the qualitative portion of the study did identify several interesting themes.

These themes included plagiarism due to ignorance versus intentionality, student objections to the use of TII, potential for difficulty using TII, impact on teaching strategies, replacement of TII with an alternative tool, faculty training on TII, and teaching students about plagiarism. Several suggestions for institutional policy and practice were explored as were the limitations of the study and possible future areas of research.

With the continued development of information technology, plagiarism is likely here to stay. It is the task of the educator to find ways to prevent it – to develop student awareness and skills and to create learning opportunities that reduce its likelihood. It is the task of the researcher to explore the boundaries of our understanding of plagiarism and to find ways to expand those boundaries. Plagiarism is a challenge to educators at all levels and will continue to be so as we are well beyond the time Mark Twain (1935) referred to when he said “What a good thing Adam had. When he said a good thing he knew nobody had said it before.” (p. 67).

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## **APPENDIX A: INTERVIEW QUESTIONS**

The following questions constitute the semi-structured interview protocol and will be asked during the faculty interviews. Other questions may also be asked depending upon the responses of the interviewee.

1. How is TII integrated into your class(es)?
2. What kind of guidance did/do you get from others about when and how to use TII?
3. What have you found to be helpful about TII?
4. What have you found to be difficult or challenging about it?
5. What have been student reactions to use of the tool?
6. How do you educate students about plagiarism (probe on if they engage passive education [e.g., statements in syllabi] vs. active education [in-class exercises/TII tests])? How have you used TII as a component of that education?
7. Have you found actual plagiarism and if so, how do you handle it (probe on if the instructor takes a developmental vs. a disciplinary orientation)?
8. How has TII or other anti-plagiarism software changed the way you teach your course(s)?
9. What advice would you offer other instructors regarding the use of anti-plagiarism software in their courses?