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Stacey Conradson

Pedro F. Hernández-Ramos
Santa Clara University, phernandezramos@scu.edu

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Computers, The Internet, and Cheating Among Secondary School Students: Some Implications for Educators

Stacey Conradson & Pedro Hernández-Ramos
Santa Clara University

This article investigates in greater depth one particular aspect of cheating within secondary education and some implications for measuring academic achievement. More specifically, it examines how secondary students exploit the Internet for plagiarizing schoolwork, and looks at how a traditional method of educational assessment, namely paper-based report and essay writing, has been impacted by the growth of Internet usage and the proliferation of computer skills among secondary school students. One of the conclusions is that students' technology fluency is forcing educators to revisit conventional assessment methods. Different options for combating Internet plagiarism are presented, and some software tools as well as non-technology solutions are evaluated in light of the problems brought about by "cyberplagiarism."

Is student cheating on the rise in our secondary schools? Most researchers concur that the incidence of academic misconduct in our middle schools and high schools has increased significantly in recent years (Underwood and Szabo, 2003; Petress, n.d.). In fact, the preponderance of statistical and anecdotal evidence underscores several disturbing trends, indicating that cheating at the secondary level is not only occurring more frequently, but that students are using much more sophisticated methods for their transgressions. Although educators and academics disagree on the root causes of this alarming behavior, there is little dispute that the accessibility of computers, the Internet, and other electronic resources such as CD-ROM encyclopedias has made cheating quicker and easier for our current generation of technology-savvy teenagers. "Cybercheating," meaning the use of technology tools in inappropriate ways for academic work, is on the rise.

The intent of this article is not to suggest that technology use inevitably results in aberrant student behavior. Rather, the investigation of "cybercheating" provides some useful insights on a complex social and educational debate about the role schools should play in preparing students with the skills needed for the workforce of the twenty-first century. Fulton (1997) persuasively argues that schools must change traditional approaches to learning in order to help today's students acquire the skill sets required for succeeding in the workplace of the future. These advanced skills will be achieved "through the learner's interactions with content" in the "digital age" and not through "the transmission of facts" (Fulton, 1997). In other words, technological changes have rendered traditional methods of teaching and assessment in education less effective and less relevant—at least from the perspective of many students and quite a few educators as well. Shaw (2003), for example, argues that "we will have to design assessment tools that are more reflective of the way knowledge and information are used in the adult world" (p.39).

The Cyberplagiarism Problem in Secondary Schools

Cromwell (2000) claims that "Many trend watchers think cheating is epidemic, usually beginning in middle school and extending though college." Schulte (2002) reported the results of a Rutgers University study based on 4,500 high school students from 25 high schools around the country. The study found that 72 percent of the students admitted to "seriously cheating on a written work" and more than half had "copied portions of a paper from the Internet without citing the source." Donald McCabe, the founder of the Center for Academic Integrity, is quoted as saying that

"...cheating is starting younger—in elementary school in fact. And by the time students hit middle and high school, cheating is, for many, like gym class and lunch period, just part of the fabric of how things are....What's changed is technology. It's made cheating so easy. And the vast realms of information on the truly, worldwide Web are so readily available. Who could resist?" (in Schulte, 2002).

In a different article (Thomas, 2001), McCabe is quoted asserting that "High-schoolers are much more likely than college students to use the Net to cheat, and computers have redefined younger kids' concept of what constitutes cheating." McCabe also claims, based on his findings, that 15 to 20 percent of high-schoolers have bought or downloaded papers from one of the many paper mill websites to submit as their own work.

Educational Communications (1998), based on a survey of the top scholastic high school achievers selected from the annual *Who's Who Among American High School Students* "honor roll," found that four out of every five students admitted to cheating during their high school career to improve grades. This 1998 poll resulted in the highest

percentage of cheating honor students in the thirty-year history of the program. Of particular concern was the fact that 53 percent of the respondents felt cheating was “no big deal.”

There are a multitude of sources corroborating the above findings. For example, research by the Josephson Institute of Ethics (1998) is another example of a frequently quoted survey involving 20,829 middle and high school students, where 70 percent reported that they had cheated in school. It should be noted that while some in academia and elsewhere have found fault with some of the survey techniques, or have questioned the interpretation of some data, the overwhelming proportion of literature suggests that student plagiarism at the secondary level is a pervasive practice, with significant percentages of students copying directly from the Internet and other electronic sources without proper attribution. For example, in their meta-analysis of studies on cheating Athanasou & Olasehinde (2002) found that “substantial proportions of males and females engaged in cheating at high school and that substantial proportions continued cheating in college or university.”

Intentional and Unintentional Plagiarism

Dr. Jamie McKenzie, editor of the online educational journal *From Now On* (www.fno.org), claims that many students engaged in plagiarism truly do not understand that the exercise of cutting and pasting into a paper without attribution is morally wrong. “They [students] don’t think of it as cheating. They are simply collecting information and don’t understand the whole concept of intellectual property” (quoted in Hafner, 2001). Many academic experts on plagiarism concur with this point of view. In other words, students who have acquired a certain view toward intellectual property (if they recognize the concept at all) with respect to music, movies, email, jokes, photos, and other web-related content assume that there’s nothing illegal or unethical about taking or copying material from the web for the fulfillment of school assignments. Given that many teachers in secondary education often lack the familiarity and Internet-related skills that their students have, they are prone to misinterpret acts of copying as deliberate cheating. Teachers—particularly those working in middle and high schools—need to consider that their students’ use of content without proper attribution often represent inadvertent incidents of cheating.

Straw (2000) argues that educators must learn to discern “Acts of academic dishonesty committed with deliberate intent... [from]... the unintentional results of inexperience and ignorance.” He further observes that “...students are stunned to learn that the sites they’re using are created by individuals who need to be acknowledged. The structure of the Internet must be seen as a culprit in creating much of this confusion. A great deal of electronic information lacks the tangible physical presence of print sources.” If more than a century earlier Rhodes (1899) had to remind his fellow historians that “the study of history is a training in the handling of books,” we may find it necessary to alert all instructors that teaching and learning in the twenty-first century must include training in the “handling” of the rich technology-based information resources—including electronic books—available now.

Providing a simple definition of “plagiarism” is a good starting point for helping students gain a clearer understanding of acceptable uses of other authors’ writings. Pearson (2002) defines plagiarism as “Presenting someone else’s ideas or work as your own, without attribution.” Pearson urges teachers to set clear expectations about the originality of schoolwork, and to discuss the importance of doing one’s own critical thinking in terms of the learning process. She pragmatically suggests that “those who cheat are going to do it no matter what I say...my job is to help (students) think about it, and to let them make their own informed choices.”

In short, the various types of plagiarism run the gamut from students’ not knowing at all about the need to properly acknowledge their sources, to believing a source to be common knowledge—thus committing an innocent error in judgment biased in favor of their own sense of “originality”—to a student’s submission of a paper entirely composed by another author, hence, consciously executing an overt act of academic dishonesty. Educators at the secondary level need to become aware of and learn to differentiate egregious transgressions from the more innocuous cases of cheating without an explicit intent. This could be accomplished through in-service opportunities focused on this cheating, or by making widely available information specifically developed for teachers to help them cope with this challenge (e.g., Hurwitz and Hurwitz, 2004; Creech and Johnson, 1999).

Deliberate Plagiarism and the Use of Paper Mill Websites

The proliferation of websites offering term paper services has not only unleashed a fury of controversy in academic circles, but has given rise to new ways of promoting and facilitating student cheating, especially at the high school level. In fact, one source estimates that 60 percent of all papers downloaded for purposes of plagiarism are acts committed by high school students (Plagiarism and the Web, 2002). Other researchers suggest that, due to the generally poor quality of papers found on “paper mill” sites, many of the submissions would not be considered acceptable work at the college level.

In examining their offerings, a sampling of paper mill sites provides a range of online services from digital “Cliff Notes” or lecture notes, to free and “for fee” essays and term papers, as well as editing and custom design services for college-quality papers which command fees of up to \$30/per page. Since a racketeering lawsuit filed by Boston University threatened to shut down a list of these sites by name (the suit was later struck down by the courts), most sites now publish a disclaimer that their offerings are intended solely for “research purposes”—thus inferring that their content is not supposed to be used with an intent to cheat and/or plagiarize. These warnings are obviously not monitored, nor are

any enforcement measures taken.

To get a rough idea of the extent to which these web businesses influence or facilitate student plagiarism, it is useful to look at the magnitude of web traffic they generate. Paul Roberts, the founder of Cheater.com, for instance, claimed that in the late 1990s his firm signed up 80 to 100 members every day, and the site received roughly 13,000 daily hits (Clayton, 1997). Kenny Sahr, who launched the website School Sucks (www.schoolsucks.com), asserts his site attracted about 10,000 unique visitors per day (Glasner, 2002). Sahr quips that "...besides casinos or porn [the paper mill sites are the only ones] making money on the Internet" now. When asked whether his business encourages cheating, Sahr remarked that his site is "a stupid place to plagiarize from" (Glasner, 2002). As a shameless, self-proclaimed industry spokesman, Sahr admits to stirring the pot and putting audiences, especially teachers, on the defensive:

"What worries me is that educators are worried about School Sucks. A teacher who's giving original and creative assignments, who's reading the students' writing and knows what it's like, has nothing to fear from School Sucks" (Cromwell, 2000).

The tagline at Sahr's website is "Download your Workload." The reality is that such messages fly directly in the face of values such as academic integrity and individual accomplishment. Judging by the number of paper mill sites currently in business, and the growth of paper mill Internet addresses (or URLs), one must conclude that, as long as these sites are attracting visitors, whether educators like it or not these enterprising publishers are here to stay.

There are three major types of web sites used by students interested in "downloading their workload." The first are lecture note sites, the second are term paper and essay sites, and the third are editorial services sites. The first two categories have some "free" offerings (in exchange for opening an "account" where private information including an email address must be provided), such as SparkNotes (www.sparknotes.com), now owned by Barnes & Noble. The cost for papers bought from these publishers runs from as little as \$5/per page up to a minimum per paper charge of \$500 for highly specialized topics. The price of a paper bought at one of these vendors might fall into a range of \$30 to \$100, plus delivery charges in most cases, which is a fee range many secondary students would find within their budgets.

Table 1. Selected sample of web sites offering lecture notes, term papers, essays, and editorial services.

Lecture Note Web Sites	Term Paper & Essay Web Sites	Edit Service Sites
www.pinkmonkey.com www.sparknotes.com www.novelguide.com www.givemenotes.com www.schoolpaper.com	www.cheathouse.com www.lazystudents.com www.geniuspapers.com www.researchcentral.com www.a1-termpaper.com www.allpapers.com www.papersinn.com www.research-assistance.com www.12000papers.com www.ezwrite.com www.planetpapers.com www.bignerds.com www.chuckiii.com www.freeessay.com www.realpapers.com www.NetCheats.com	www.cyberedit.com www.termpapers.net

In surfing these sites one discovers a myriad of services offered. In an attempt to differentiate one site from another, some of the more savvy marketers advertise deliberate misspellings and grammatical mistakes in their papers so as to avoid arousing teachers' suspicions. Other sites provide detailed instructions for paraphrasing so as to escape detection by one of the search engines designed explicitly to uncover student plagiarism. Clearly, the founders and owners of the paper mill businesses maintain a watchful eye on the legal and technical issues potentially impacting their market, and have thus far managed to stay a step ahead of those who want to shut them down.

Reversing the Trend: Some Practical Solutions

There is a wide array of options available to educators designed to deter students from committing plagiarism and/or cheating in their writing assignments. There are three general categories of techniques that teachers and administrators may deploy to combat this particular aspect of student cheating, including: 1) the application of commercial, technology-based tools for detecting plagiarized schoolwork, 2) the establishment of academic policies for reducing cheating behaviors, and 3) the re-evaluation and redesign of traditional methods of educational assessment.

Commercial Tools for the Detection of Plagiarized Content

With the proliferation of web-based content and the online paper mill businesses, technology savvy teachers and administrators have fought back by seeking electronic methods for catching offenders. In response to educators' needs,

commercial offerings for detecting web-based cheating have evolved. Currently, the available tools range from free, mainstream search engines such as Google or AltaVista, to the deployment of services such as TurnItIn.com, a sophisticated offering that does text string matching against approximately 1.5 billion web pages. Some of the more popular detection services, in addition to TurnItIn, include IntegriGuard, WordCheck Software, and Essay Verification Engine (Eve 2.2). Fees for these services, although differently structured, typically include a monthly flat rate or an annual minimum service charge, with a nominal fee per document. (It bears mentioning that not all public secondary schools are in a position to afford this type of specialized service.)

Once a school, district, or an individual instructor signs up for an anti-plagiarism service, their students must submit electronic copies of their work, which are then uploaded to the respective service. The software engine in these services uses algorithms to match up identical text strings from the student's paper with content sources found on the web or in databases of other students' papers and essays. TurnItIn, for example, maintains a huge repository of the student papers that are sent to the service. New submissions are compared with its existing database and then added to the repository. Once submissions are reviewed, scores are returned to the instructors indicating "original" content.

John Barrie, the founder of TurnItIn, estimates that in about 85 percent of the cases when students are caught plagiarizing it is because they cut and paste directly from web pages; and another 13 to 14 percent of the occurrences of plagiarism are due to students copying from other students (Reagan, 2002). Barrie claims that less than one percent of the time does plagiarized work come from a paper mill source. However, it is reasonable to assume that if students are told their papers will be electronically analyzed, the vast majority will take measures to avoid turning in plagiarized web content, knowing there is a high probability of being caught and disciplined.

Are these technology-based tools effective deterrents? At Bullard High School, a pilot user of TurnItIn, teacher Sophia Smith claimed that after TurnItIn was implemented "the plagiarism rate in my class went from around 20 percent down to zero between the first and second assignment" (Atkins and Nelson, 2001). Barrie, the founder, asserts that TurnItIn has monitored assignments from "hundreds of high schools" and that roughly 20 percent of papers sent to his service contain some portion of plagiarized content. Compared to similar surveys, this percentage may be slightly inflated. After all, Barrie's claims may be less conservative due to a vested interest in growing his business.

Despite their self-proclaimed successes, some plagiarism experts meet these technology tools with skepticism. Although many educators concede that commercial tools are effective in discouraging some cheaters, the anti-plagiarism services remain problematic for several reasons. Once a teacher catches a student, there is frequently a reluctance to exercise punitive measures, usually because schools lack clear directives on how to handle these awkward situations; also, teachers and schools are skittish about the potential legal liability of accusing students of cheating. (For example, Gross (2003) makes reference to a psychologist working in an affluent district where "some [parents] threaten to sue over any disciplinary measure that might mar a college transcript.") Some educators feel that the use of such tools sends the wrong message to their students and that these technologies engender an atmosphere of mistrust. Other public schools balk at the cost. Still others contend that the scores derived include too many "false positives." In other words, not all software engines are calibrated to identify proper attribution. This article, for instance, relies heavily on cited quotations, and could, in theory, trigger a false plagiarism score! Lastly, some educators believe that there are better, alternative methods to address the cheating problem, and shun the anti-plagiarism technology services.

Setting Clear Policies For Academic Integrity

The media and educators alike have given the plagiarism issues at our schools a heightened visibility. As a result, many schools have designed and published integrity policies and honor codes explicitly covering Internet usage, or, else have modified older, more traditional policy statements. Carroll and Appleton (2001) contend that a "balanced institutional response" that includes "enhanced teaching and learning strategies against a backdrop of a clear, fair and effective disciplinary procedure" is the best way for schools to ensure against plagiaristic practices. For the secondary grades, schools and individual teachers should publish clear definitions of what constitutes plagiarism, how to avoid it, and what the consequences will be for students. Many schools encourage teachers to give lessons on the differences between copying and paraphrasing, and how to provide proper attribution. Some examples of "Honor Codes" and "Cheating Policies" can be found online for both middle schools and high schools, including at the websites of the following institutions: El Toro High School (Lake Forest, CA; <http://eths.svUSD.org/pol.html#ethics>), Langley High School (McLean, VA; <http://www.fcps.k12.va.us/LangleyHS/saxon/honor.html>), H.E. Huntington Middle School (San Marino, CA; <http://www.san-marino.k12.ca.us/~heh/BinderReminder/discipline.html>), and the Webb School (Knoxville, TN; <https://www.webbschool.org/today/academics/upper/philosophy.asp>).

Lathrop and Foss (2000) and McCabe and Klebe Treviño (2002) assert that honor codes, where students are expected to assume responsibility for their own actions and commit to integrity pledges, help inculcate anti-cheating attitudes in the school culture, and thereby lessen the incidence of cheating. Based on the results of a third party study, Lathrop and Foss (2000) reported that "Honor codes appeared to be a major influence in reducing cheating among students," while McCabe and Klebe Treviño (2002) found that in college campuses, "The impact of honor codes, both traditional and modified, is surprisingly strong on many campuses, suggesting that an ethical appeal to students—rooted in a sense of community responsibility— can help reduce cheating." Many K-12 schools now also require students (and sometimes, their parents as well) to sign an "Acceptable Use" agreement covering computers, the Internet, and other electronic

resources at school that also spells out consequences (up to and including expulsion) for infringements ranging from inappropriate use to plagiarism and other forms of academic dishonesty. Such written policies, and their proper communication within schools, helps students understand that the institution will deal with academic dishonesty with the seriousness it deserves.

While most students are willing to state in writing that they will abide by the rules of their school's honor code, the overwhelming majority of students will not "tattletale" on a fellow student who breaks the code. It appears that students steadfastly draw the line at policies attempting to get them to report on one another. Even when students are put at a disadvantage grade-wise, the research underscores the reluctance of students to "rat."

In sum, the most important aspect of a school's honor code seems to be the role that students themselves play in developing and carrying out the policies (Gross, 2003). McCabe (2001) reports that "the level of serious cheating on written assignments is 25 to 33 percent lower" when students are stakeholders in the honor code processes. Thus, where students are participating on school enforcement boards and levying their own sanctions, honor code systems have far greater influence on reducing academic misconduct.

Re-examining Traditional Assessment Methods

To help educators resolve the ethical dilemmas posed by plagiarism and Internet usage, it is becoming necessary to design new ways of assessing learning and/or skill attainment for secondary education. Traditional modes of assessment, specifically term papers and essays, represent valid indicators of academic achievement in a pre-computer era when access to information was largely limited to interpersonal and print sources and there were no electronic writing tools (e.g., word processors, spell checkers, thesauruses, CD-ROM encyclopedias, the World Wide Web). Given the dynamics of today's workplace and our educational environment, it becomes less clear that these scholastic assessments are still as meaningful and/or relevant as they once were, especially with respect to the acquisition of information literacy skills.

Fulton (1997) looked into the future and made some predictions about the prerequisite skills that our secondary students will need to participate successfully in the global economy over the next decade. She argues that, while the need to hone critical thinking abilities will not go away, the approach to learning will change significantly, suggesting that "advanced skills of comprehension, reasoning, composition, and experimentation" will be learned through "experience and (the creation) of mental structures...which organize and synthesize the information and experiences which the individual encounters in the world." Moreover, she claims, "the technology pull of the Internet will force the issue of developing broader information literacy skills." Students, in other words, will need to be far more discerning about the "undigested" information they access on the Internet, and capable of "making critical judgments about its value, reliability, and validity." Lastly, Fulton (1997) describes the profile of the future workers as technology-savvy and collaborative problem-solvers who are also "effective communicators using a variety of appropriate technologies/media."

Assessment indicators such as the traditional essay and term paper fall short of measuring these types of skills that our students require for the digital economy. Term papers represent academic exercises geared toward individual performance. Essays are typically based on information from authenticated, traditional information sources such as textbooks and library materials. Hence, these assignments do not indicate how well students have learned to work collaboratively to solve problems; nor do they measure the students' ability to quickly delve through virtual avalanches of information, such as found on the web, and make critical distinctions between what is not and what is useful.

Consequently, many educators today find themselves in the midst of a sharpening pedagogical conflict. On the one hand, moving away from traditional assessment methods in favor of more authentic forms of assessment may help mitigate some of the undesirable consequences of technology and Internet usage, such as plagiarism, and help students become better prepared for the technological fluency demands of the future workplace. However, pressures originating in (among other sources) mandated curricula, standardized testing requirements, parental expectations, and general inertia make it unlikely that most educators would abandon term paper or essay writing in the near future.

Recognizing the implicit difficulties facing educators caught in this dilemma, and, more specifically, focusing on ways to reduce plagiarism, several authors (e.g., McKenzie, 1998; Minkel, 2002; McCullen, 2003) have made pragmatic recommendations for secondary school teachers to incorporate into their classroom practice. The following represents a brief summary of some suggestions on how to design school assignments and assessments to discourage (or even prevent) cheating and/or plagiarism from electronic or other sources:

- Avoid assigning the same or very commonly used essay topics every year to the same classes.
- Familiarize oneself with the quality and skill levels of the student's writing before assigning a term paper. Short in-class assignments can accomplish this goal.
- Do not use open-ended subjects as assignments. Be very specific in the design of the assignment.
- Know what's available online prior to introducing the subject matter of the composition to the class.
- Let students know that *you* know about online sources for term papers and the like and put them on notice that you'll be watching for transgressions such as plagiarism.
- Schedule progress reports on students' research and writing projects. Require outlines, bibliographies, and even drafts prior to submission of the final written product.

- Assign several smaller papers instead of long, heavily weighted end-of-term projects.
- Require oral presentations based on original student-produced materials.
- Use peer groups to comment on drafts and final papers.
- Allow for collaborative projects in written assignments. Change the assessment criteria to accommodate a grading scheme that allows for individual assessment based on contributions within the group.
- Devise different formats such as scripts, journals, timelines, comparative ideas, interviews, and other creative approaches for assignments.
- Change the perspective of the narration to first person (e.g., a historical witness or a newspaper reporter).
- Use web portfolios or other technology-driven formats such as presentations or digital movies.
- Allow alternative media such as art projects, where students turn in a storyboard or a comic strip instead of a paper.
- Engage students in online discussions using private or secure systems (to guard students' privacy), specifying the levels and types of participation required (e.g., at least three original postings of 200 words or more in reply to a teacher's or peer's posting within a one-week period).
- Involve students in the development of assessment rubrics that lay out clear expectations for their work.

An outstanding resource for examples and case studies on the use of these alternative strategies is the George Lucas Educational Foundation's website (www.gleef.org), in particular the sections on Assessment, Project-Based Learning, Technology Integration, and Digital Divide.

Summary and Conclusions

This article has considered assertions and reviewed some evidence that the incidence of student plagiarism has had a significant increase at the secondary school level. The Internet and the development of computer competencies among secondary school students have facilitated a practice of "cutting and pasting" web-based text and other electronic resources without proper attribution. Descriptions of representative websites used for the purposes of plagiarism and of some technologies designed to combat the problem have been provided. A brief review of some non-technical methods for deterring inappropriate uses of materials from the web has been presented, including a look at honor codes for maintaining academic integrity, and assessment formats designed for teachers to discourage plagiarism. Lastly, a contention has been made that traditional assessment methods in secondary education need to be re-examined and redesigned for the digital economy of the near future—and in some measure, the here and now.

The tension between teachers and students, between those who assess and those being assessed, will continue as long as attitudes toward the assessment process continue to emphasize individual performance in what students perceive to be irrelevant tasks and products created for an audience of one—the teacher. The prevalence of student cheating on term papers beginning so early in the current education system suggests that teaching strategies and the social and cultural values have been deeply influenced by technology, particularly the ease with which people can now access vast amounts of information. The value of writing a paper for students' academic, intellectual, cognitive, social, and even moral development did not go away with the increased availability of the Internet and other electronic resources. However, the practice of assigning writing tasks with high-stakes to students who have been (or think that they have been) ill-prepared to do well in them raises valid issues of fairness and accuracy in assessment.

The fact that papers may have served the academic community well for several hundred years does not mean that the value of this practice is guaranteed in the future, along with standardized tests based on multiple-choice questions and other forms of "traditional" assessment (Wiggins and McTighe, 1998). The high incidence of cheating serves also as an invitation to examine systematically the teaching and assessment practices in elementary, middle, and high schools to consider whether subtle or dramatic shifts in the teaching of Language Arts may have contributed to this problem. Are students being asked to write less than before? Are teachers paying the same levels of attention to students' writing and giving detailed, quality feedback? Are schools engaging students in meaningful conversations about intellectual property, authorship, and academic integrity? To the extent that the answers to these questions are negative, the problem of cheating moves beyond the students engaged in the practice to their teachers, their schools, and their communities.

In other words, "cybercheating" happens not just because students have access to the Internet or CD-ROM encyclopedias, but also because the high-stakes consequences of the educational system's investment in assessment puts enormous pressures on students to "do well" in papers and tests that they can't relate to their lives and the futures they envision for themselves. This does not mean that, for example, students should not be presented with the opportunity to reflect on the meaning of Hamlet—only that perhaps a term paper may not be the best way to motivate the student to read, consider, ponder, analyze, compare, contrast, synthesize, and other tasks in relation to Shakespeare's masterpiece. For teachers, the motivating challenge should not be figuring out how to "catch" students who plagiarize, but how to frame the assignment in such a way that students won't see the need to plagiarize and cheat. This is the third solution outlined above, and it's easy to see that it's also the one that would take the longest to implement fully. A technology-based solution or the publication of policies that carry serious negative consequences for those caught cheating can be important first steps for institutions where the third option is not viable (at least in the short-term). However, no one should assume that reliance on the first two solutions (technology or policy) will make it possible to ignore the need to examine the core teaching and assessment practices eventually, perhaps leading to major changes in what work is

demand of students and how it is evaluated.

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Contact:

Pedro Hernández-Ramos, Ph.D.
Assistant Professor
Department of Education
Santa Clara University
500 El Camino Real
Bannan Hall 226
Santa Clara, CA 95053

Email: phernandezramos@scu.edu

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