# Students' Use of Technology in Learning Course Material: Is it Cheating?

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## ABSTRACT

*This paper presents the results of a four-year study examining business students' perceptions of academic integrity and the role of technology in e-learning. This study is an extension of previous research on academic integrity in the online environment (Cole, Shelley & Swartz, 2013; Cole & Swartz, 2013; Shelley, Cole & Swartz, 2010). Of the 553 students who participated in the study, more than a third did not believe that academic integrity applied equally online and in the classroom. Independent-samples t-tests showed statistically significant differences based on gender, but not by age group or level of study. There were 200 responses to what made the two learning environments different. Students pointed to the "real world" where accessing all available resources to solve a problem was the norm, suggesting that instructors should recognize that and adapt their expectations of what is and is not acceptable behavior in the courses they teach.*

*Keywords: Academic Integrity, Instructional Design, Learning Behaviors, Online Learning, Technology*

## INTRODUCTION

In the last decade, there have been a number of studies of academic dishonesty (Ghaffari, 2009; McCabe, Trevino & Butterfield, 2001), the prevalence of plagiarism in academia (Thomas & Sassi, 2011) and the frustration instructors and administrators face in trying to foster a culture of academic integrity in their schools (Kidwell, Wozniak & Laurel, 2003; McCabe & Pavela, 2000). Faculty members have been surveyed (McNabb & Olmstead, 2009). Students have been surveyed (Cole, Shelley & Swartz, 2013; Miller, Shoptaugh & Wooldridge, 2011; Thakkar & Weisfeld-Spolter, 2012). In a broader discussion of the components of academic integrity, Hineman (2002) considered the intersection of ethics and academic integrity with technology, specifically with regard to the Internet and the challenges posed by student use and misuse.

Studies of students' use of technology in the classroom and online has shown a growing reliance on the internet and other Web 2.0 technologies to master course material (Cole, Swartz & Shelley, 2013). Huang and Nakazawa (2010) found that certain Web 2.0 technologies assist student learning by facilitating access to others in the course, including the instructor.

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Some might argue that this is but the beginning as new technologies emerge and become integrated into the learning environment (Baggett & Williams, 2012; Greenhow, Robelia & Hughes, 2009; Kerner & Gunderson, 2012; Otte, Gold, Gorges, Smith & Stein, 2012).

How does technology impact academic integrity in online courses and in the classroom? Conflicting results have been reported when online learning platforms have been compared with traditional classroom settings. While online learning had been said to be ripe for cheating, Grijalva, Kerkvliet and Nowell (2006) found no evidence that academic dishonesty was any more pervasive online than it was in the classroom. McNabb and Olmstead's (2009) study of faculty beliefs about academic integrity online and in the classroom had similar findings. Faculty members surveyed said that they believed that there was no difference in the amount or nature of academic dishonesty in the two environments.

Eshet, Peled, and Grinautski (2012), whose focus was on student motivation, asserted that students in classroom courses have more motivation to cheat than students in online courses. In their study of nursing students enrolled in online and classroom-based programs, Hart and Morgan (2010) found higher levels of cheating reported by the traditional RN-BSN students than by those enrolled in the online program. The authors concluded that, at least from their study, concerns about cheating being more prevalent online than on ground could not be supported. The widely-reported cheating scandal at Harvard in 2012 adds to the evidence that academic integrity on campus and in the classroom is under siege (Christakis & Christakis, 2012; Perez-Pena, 2012).

Cheating by students in online programs may not be more prevalent than cheating by students in the classroom. But, the types of cheating and access to available resources, coupled with the difficulty in monitoring off-site, online activity does heighten concern regarding student activity in that environment. Sharing information on exams that are not proctored is often cited as an issue that is difficult to address (Hollister & Berenson, 2009; Rowe, 2004). Concluding that online exams were an invitation to cheat, Harmon and Lambrinos (2008) reported on the results of their study of several economics exams, some proctored and some not. In instances that exams were not proctored or monitored, cheating occurred.

Other issues, including failure to credit another's work, notably where research is retrieved from the internet, and making one's own work available to others have been presented as occurring more often in the online environment than in the traditional classroom setting (Hinman, 2002). However, even here, studies have been inconclusive (Stuber-McEwen, Wisely & Hoggart, 2009).

Albers (2007) addressed what instructors might do to prevent cheating, including but not limited to on-site proctoring and, where that is not feasible, webcam surveillance and fingerprint authentication. Yet, the question remains of whether these stratagems stop cheating.

Academic dishonesty is not confined to students, as a recent report of alleged plagiarism by a longtime university law professor would indicate (Green & Wenger, 2013). However, when it comes to students who report their own cheating most often, business school students rank highest with regard to academic dishonesty. In a study of 412 business students, Baetz, Zivcakova, Wood, Nosko, De Pasquale, and Archer (2011) reported that only 7.5 per cent said that they had never cheated. Mangan (2006) reported that 56 percent of graduate business students surveyed admitted to cheating as compared with 47 percent of graduate students in other fields. McCabe, Butterfield, and Trevino (2006) found that graduate business students cheated more than their counterparts in other disciplines.

This research has focused largely on business students at one university in Southwestern Pennsylvania. Because technology is continually changing the instructional landscape, researchers wanted to understand how the integration of technology into learning affected students' appreciation of certain behaviors traditionally related to academic integrity. The

emphasis has been on student behavior in the online environment, because it is expanding at a rate much faster than traditional campus-based programs (Allen & Seaman, 2013).

Both graduate and undergraduate students have been asked whether they think that academic integrity applies equally in the online learning environment and in the classroom, and if not, why not. Students were asked which of a selected group of behaviors they considered to be acceptable in each learning environment. Lastly, students were asked how instructors might help create and maintain a culture of academic integrity, particularly with regard to online education.

Looking at ways to prevent cheating and plagiarism, as well as to instill an appreciation of academic integrity in higher education is not a new challenge. As more institutions of higher education move from offering a few online courses to making all of their degree programs accessible as online programs, the concern is how well do educators ensure academic integrity while using online learning platforms (Braun, 2008; Campbell, 2006; Grijalva, Nowell, & Kerkvliet, 2006; Wyatt, 2005). That concern informed this study.

What is academic integrity? Definitions vary, but the core premise is intellectual honesty. It is the professional code serving academia, encompassing students, instructors, researchers, and the institution itself. The International Center for Academic Integrity identifies five values that the term, "academic integrity" embodies: honesty, fairness, respect, responsibility, and trust. To provide a common understanding of what was meant by "academic integrity," researchers listed the five values as the tenets of academic integrity (RQ1) and asked students if they thought that these precepts applied equally online and in the classroom.

Over the course of four years, researchers surveyed graduate and undergraduate students majoring in business, asking a series of questions on how they viewed the precepts of academic integrity in their online courses as compared with their on ground courses.

## RESEARCH QUESTIONS

Researchers developed four research questions that focused on issues of academic integrity. The interest on how students viewed academic integrity was the result of an earlier study that investigated student satisfaction with online instruction and student attitudes toward what constitutes acceptable behavior in online learning (Cole, Shelley & Swartz, 2013).

The study's results raised concerns about what constituted academic integrity in the online learning environment. The following questions were formed from responses to that study's open-ended questions on acceptable behavior in a classroom setting and in an online environment.

1. Is academic integrity the same in the online environment as it is in a classroom setting?
2. If academic integrity in the online environment is different from academic integrity in the classroom setting, why is it different?
3. Is there a difference in acceptable learning behaviors between the online and classroom environments?
4. Can instructors maintain learning behaviors consistent with the precepts of academic integrity in the online environment?

## METHOD

Researchers used a Web-based survey created in Vovici. Following a pilot study in spring 2010 that included graduate students in business, educational technology and nonprofit management, survey participation was solicited by e-mail from students in eight graduate and eleven undergraduate business law classes. A mixed-method analysis was used to evaluate responses to the selected questions. For the first research question, results were transferred from Vovici and combined in SPSS for analysis. Key word analysis was used for the second research question. Responses to the third question were tabulated in Vovici. Results for the final question are descriptive. The survey was anonymous in that tracking was not performed.

## Sample and Participant Selection

The sample included graduate students from instructional technology and nonprofit management, undergraduate business majors, and Master's of Business Administration (MBA) students. The study compared responses to the four research questions that were posed in three separate surveys. The first survey was conducted in the spring 2010 term. Participants were graduate students in the MBA, M.S. Instructional Technology, and M.S. Nonprofit Management programs at Robert Morris University. The first survey was designated as a "pilot study" to determine what, if any, changes to the survey instrument might be warranted. No changes were indicated. As a result, participants in the spring 2010 survey were included in the analysis. The second sample was composed of undergraduate students enrolled in Legal Environment of Business (BLAW 1050) taught in the fall 2010 term and graduate students enrolled in Legal Issues of Executive Management (MBAD 6063) which was taught in the summer 2010 and spring 2011 terms. The third sample was composed of undergraduates in BLAW 1050 taught in the fall 2011, fall 2012, and spring 2013 terms and graduate students in MBAD 6063, taught in the spring 2012 and spring 2013 terms. Both the graduate and undergraduate business courses chosen for the study were taught by the same instructor to eliminate the need to adjust for variances in instruction.

Thirty-three students participated in the spring 2010 survey, a response rate of 58%. One hundred sixty-four students participated in the second study, a response rate of 92%. Three hundred fifty-six students participated in the third study, a response rate of 97%. Combined, the total number of participants was 553 of 603 enrolled students for a response rate of 92%.

Twelve males and 21 females participated in the first survey. One hundred and three males and 61 females responded to the survey in the second study group. Two hundred and seventeen males and 135 females responded to the survey in the third study group for a total of 332 males (60.5%) and 217 females (39.5%) who participated in the surveys. Not all participants responded to each question.

To group respondents by age, researchers relied on the four categories identified by Simon (Recursos Humanos, 2010):

- Baby Boomers (1946-1960),
- Generation X (1961-1979),
- Generation Y (born after 1979) and,
- Traditional Workers (born before 1946)

Because of the limited response from students identifying themselves as belonging to the Baby Boomer or Traditional Worker categories, responses from participants from Generation X and Generation Y composed the comparison sample.

In the first survey, 22 respondents (66.6%) self-identified as members of "Generation Y" (born after 1979). Eleven respondents (33.3%) classified themselves as members of "Generation X" (born between 1961 and 1979). In the second study group, 136 respondents (86%) self-identified as "Generation Y". Twenty-two respondents self-identified as "Generation X" (14%). In the third study group, 303 respondents (86%) self-identified as "Generation Y". Thirty-nine respondents self-identified as "Generation X" (11%). The total number of respondents who self-identified as belonging to "Generation Y" was 461 (86.5%). Seventy-two respondents self-identified as "Generation X" (13.5%). The total number of respondents belonging to either "Generation X" or "Generation Y" was 533. The remaining participants self-identified as belonging to the Baby Boomer generation (7) or classified themselves as "Other" (9). One respondent self-identified as belonging to "Traditional Workers" (born before 1946).

Two hundred sixty graduate students (48%) participated in the surveys. Two hundred eighty-one undergraduate students (52%) participated for a total of 541 respondents. Some respondents did not identify themselves clearly as being either graduate or undergraduate students. Researchers compared responses from the undergraduate and graduate student

samples to the research questions as well as by age group and gender.

Students in each of the business classes were offered extra credit for taking the survey. Credit was given based on notification to the instructor by the student. The same instructor taught each of the 19 courses in the second and third study groups as well as the one business class included in the initial survey.

## Procedure

Responses to four identical questions from three surveys, *Designing Online Courses*, *Students' Perceptions of Academic Integrity* and *Enhancing Online Learning with Technology*, formed the basis for the analysis of students' perceptions of academic integrity and the study's investigation into what constitutes "cheating" (please contact the authors to request a copy of the survey instrument). Each survey was developed by the same researchers with a particular focus (satisfaction with online instruction; views of academic integrity; use of technology to improve learning) and formed part of an ongoing study of these issues. While the number of questions did vary with the survey, this study relied solely on responses to the same four questions on academic integrity.

The first survey conducted in the spring 2010 term was composed of 12 questions; the second survey, administered in the summer 2010, fall 2010 and spring 2011 terms was composed of 13 questions; and the last survey, administered in the fall 2011, spring 2012, fall 2012 and spring 2013 terms was composed of 12 questions.

There were four questions designed to elicit respondents' views of academic integrity in the online learning environment as compared with the face-to-face, classroom environment. The first question asked if the student thought the tenets of academic integrity applied equally in the online environment and in the classroom setting. If the student responded "no" to the first question, the student was asked to elaborate on the basis for the difference. This second, follow-up question was open-ended. The third question on academic integrity asked whether certain activities, such as using notes, consulting a text, and "googling" during an exam without express permission to do so were permissible in either or both the classroom and online. Students were also asked if having another person take an exam in his or her place was an acceptable practice and whether sharing an exam, paper, or project with others was acceptable. A fourth question, which was open-ended, asked for recommendations for improving online instruction while maintaining academic integrity.

Each survey also had questions on participants' level of experience with online learning, and whether participants were taking a graduate or undergraduate course. Demographic questions seeking information on gender and age were included in each survey.

The initial survey instrument was approved by the University's Institutional Review Board in 2010. Subsequent modifications to the survey were minor and did not require separate approvals in 2011/2012 or 2012/2013. The same script was used seeking participation in each of the surveys. Participation was solicited via e-mail from the instructor. Each e-mail included the link to the Web-based survey developed in Vovici.

Data from the completed surveys were transferred from Vovici into SPSS. Independent samples t-tests were completed on the first question asking if participants felt that the precepts of academic integrity applied equally to taking online courses and to taking courses taught in a classroom. Responses from the undergraduate and graduate student samples, the Generation X and Generation Y samples, and from the gender samples were compared to determine if there were any statistically significant differences with regard to views of academic integrity in the online environment. Responses were tabulated in Vovici on the third question, asking whether certain behaviors were acceptable in one or the other, in both, or in neither learning environment. The two open-ended questions were analyzed using key words to form categories which were then grouped under themes. The first open-ended question asked participants to elaborate on why they thought the tenets of academic integrity applied differently in the online environment as opposed to the classroom

setting. The second open-ended question asked respondents to suggest what instructors might do to maximize student learning in online courses while maintaining academic integrity.

## RESULTS

In order to put the responses to the questions on academic integrity into perspective, researchers asked respondents to identify their experience with online learning. Students were asked they had taken or were taking one or more fully online graduate courses, partially online graduate courses, fully online undergraduate courses, and/or partially online undergraduate courses. Responses to each of the questions were combined. There were 216 responses. Some students had taken both undergraduate and graduate level fully online and/or partially online courses. There were 93 instances where respondents said they had taken or were taking fully online courses (65 graduate and 28 undergraduate level courses). There were 123 instances where respondents said they had taken or were taking partially online courses (73 graduate and 50 undergraduate level courses). The question asking for the respondent's level of experience with online or partially online was phrased differently in the final surveys. In the final surveys (Fall of 2011- Spring of 2013) researchers asked how many fully or partially online courses the student had taken. Eighty-eight said they had taken one course, 154 respondents said they had taken two to four courses, and 56 said they had taken between five and ten online or partially

online courses. Twenty respondents said they had taken more than ten courses. Thirty-seven students said they had not taken any online or partially online courses.

**RQ1:** Is academic integrity the same in the online environment as it is in a classroom setting?

Of the total 553 responses to the three surveys, 549 responded to the question, "Do you think that the precepts of academic integrity (honesty, fairness, respect, responsibility and trust) are applicable to the same degree in the online environment as in the classroom setting when taking an exam, writing a paper, developing a project, etc.?" Three hundred fifty-eight participants (65%) answered "yes"; 191 respondents (35%) answered "no".

The 549 participants who responded to the first question also noted their gender. Of these, 332 (60.5%) were male; 217 (39.5%) were female. Five hundred thirty-three participants who responded to the first question self- identified as belonging to "Generation X" (72 or 13.5%) or to "Generation Y" (461 or 86.5%). Of the 541 students who were classified as graduate or undergraduate students, 260 (48%) were graduate students; 281 (52%) were undergraduate students.

Independent samples t-tests were run on the first question asking if there were a difference in the applicability of the tenets of academic integrity depending on the course platform, online or in the classroom. There was a statistically significant difference between males and females at .009. The difference between members of "Generation X" and "Generation Y" was close to significance at .055. There were no statistically significant differences between graduate and undergraduate students on the question. Females and members of Generation Y were more likely than males and members of Generation X to respond "no" to whether the tenets of academic integrity applied equally online and in the classroom.

**RQ2:** If academic integrity in the online environment is different from academic integrity in the classroom setting, why is it different?

The second question was an open-ended question designed as a follow-up for those students who responded "no" to the first question asking if participants thought that the tenets of academic integrity (honesty, fairness, respect, responsibility, and trust) applied equally in the online and classroom environments. There

were 200 individual responses to the question asking what constituted the difference between online and classroom learning that prompted the student to respond "no" to that question. It would appear that some who said that the tenets of academic integrity did apply equally to both learning environments also offered reasons why some might think otherwise.

For the most part, respondents felt that sharing papers and projects could be treated the same online and on ground. Each could be shared without violating academic integrity. Exams were viewed differently. As to why students acted differently online versus in the classroom with regard to taking exams, responses clustered around two major themes:

1. Ease of access to resources (texts, internet, and other people) – cited by 127 respondents (63.5%) and
2. The inability of the instructor to monitor online behavior – cited by 35 respondents (17.5%).

Themes were chosen from repeated appearances of key words, such as "access," "real life," "availability," "easy," "lack of contact" with instructor, and failure to "see" the student.

Some students felt that trust was lost in online courses because there was no face-to-face interaction with the instructor. Others said that the online environment implies consent to share information and to access available resources. One respondent suggested that the issue could be addressed by providing open access to resources in both environments. Several respondents said that the reason for the difference in the application of academic integrity online was that in this environment, students must teach themselves. Many respondents pointed to "real life" as the rationale for open access to resources and sharing information. For example, "I observe employees everyday referencing materials for answers. It is more important that the concept of work is understood…you would not be required to solve complex problems in the workforce without the use of helpful materials."

There were other respondents who expressed a more cynical understanding of the difference in applying academic integrity online as opposed to in the classroom:

- "When taking an online course teacher should know that it is going to be 'open book'"
- "…test online, it seems reasonable to assume that students will use the internet [sic], books, or notes while taking a test"
- "You're not confined when taking an online course. Getting a good grade is the only concern; people will go to whatever extent they need to in order to accomplish that."
- "You have the internet [sic] at your fingertips, more help than a teacher could ever be when it comes to actually getting a good grade, and I think that's what we students truly care about anymore…"
- "…for one, we obviously have resources we can use. We want the best grade possible, and even in real life, if someone in a job does not know the answer to a question, they look it up. I treat my online courses more like a real job, where if a question arises I do not know, I research to find it. This way I get the answer right and learn the right answer while doing it."
- "[use a book] that is how the professional world works. Not how fast you can answer a question or that you memorized 50 definitions, but that you understand the concept and can find the accurate answer…"
- And lastly, "professors need to learn to adapt to the new environment"

**RQ3:** Is there a difference in acceptable learning behaviors between the online and classroom environments?

Researchers compared results on the third question asking whether using notes, consulting a text, "googling" during an exam without the instructor's express permission, and having someone else take an exam in his or her place, or sharing an exam, paper or project with

others were acceptable practices in either, both, or neither the classroom or the online environment.

Thirty-nine percent of the students responding said that using notes or consulting a text during an exam *without* the instructor's permission was acceptable in both the online and classroom settings. With regard to accessing internet resources during an exam, having another take the test for you, and sharing one's work with another for use as his/her own *without* the instructor's permission, the majority of the respondents felt that these practices were not acceptable in either the classroom or online. Table 1 presents the results.

**RQ4:** Can instructors maintain learning behaviors consistent with the precepts of academic integrity in the online environment?

There were 580 responses to the open-ended question asking for students' suggestions on how instructors could improve online instruction while maintaining academic integrity. Of these, 306 focused on the issue of maintaining academic integrity. Recommendations for maintaining academic integrity included:

- Establish trust, enhance student-instructor interaction
- Make expectations clear
- Use timed tests, discussion threads, papers, essay questions
- Randomize questions
- Lock out Internet use during exams, use webcams, Turnitin
- Allow use of resources – "reflective of real life"
- Use signed agreements
- Promote group learning – "students are sometimes the best teachers of other students"

There were 40 students who replied that nothing could be done. Thirteen respondents said that there was no problem.

## DISCUSSION

Results were interesting, if not only as a cause for reconsideration of what did constitute academic integrity in today's technologically-enhanced learning environment.

Despite skepticism that online learning has proven to be effective and at the same time, saves money (Bowen, 2013), online education appears to be here to stay (Allen & Seaman, 2013). The recent entry of MOOCs (Massive Open Online Courses) and their apparent acceptance by some of America's most prestigious universities serves to underscore the point. How can educators create and maintain a culture of academic integrity that is integral to earning a

*Table 1. Acceptable practices without the instructor's express permission*

| Acceptable | Online | In Class | Both | Neither |
|---|---|---|---|---|
| Using notes during an exam | 28% (156) | 3% (18) | 39% (223) | 30% (168) |
| Consulting a text during an exam | 28.5% (159) | 2% (12) | 39% (118) | 48% (267) |
| "Googling" / accessing internet resources during an exam | 27% (147) | 1% (6) | 9% (49) | 63% (350) |
| Having another person take an exam in your place | 2.5% (14) | .4% (2) | 2% (12) | 95% (522) |
| Sharing an exam, paper or completed project with another for use as his/her own | 1.5% (8) | .5% (3) | 5% (29) | 93% (509) |

degree? What is "cheating" in the "real world"? Should instructors and universities revisit what is and is not acceptable behavior in learning course material, in producing papers and completing projects?

As the recent indictments of educators in the Atlanta public school system has shown (Winerip, 2013), cheating is not just a student issue, nor is it primarily an online issue, as the Harvard cheating scandal illustrates (Christakis & Christakis, 2012).

Study results indicate that the main reasons for why the tenets of academic integrity apply differently online than it does in the classroom are:

1. The ease of access to resources and by implication, acceptance that learning can occur by using what is available. The argument is made that available resources should be used by students to learn to solve problems as they would in the workplace.
2. The inability of the instructor to monitor behavior. The argument here is a different one. Where the first is a rationale or a justification for using all available resources to learn; the second is an assertion that there is nothing that can be done about it – "it" being accessing all available resources. Is accessing all available resources "cheating"? Perhaps it is not cheating. Perhaps as one respondent pointed out, instructors need to adjust to a new reality.

Why is academic integrity different in the online environment? One student said:

*You have the internet [sic] at your fingertips, more help than a teacher could ever be when it comes to actually getting a good grade, and I think that's what we students truly care about anymore…getting a good grade is more important than learning anything anymore…because when you get to the work place, they teach you what you want to know, your diploma is just your foot in the door for the most part. (Study II)*

It is possible that a prospective employer would not agree with the student's assessment, but the assessment does reflect the student's perception of what matters.

Another student responded:

*Understand that in the real world the ability to track down existing information is a key skill. Information is so available these days that the standard of memorizing information rather than understanding the concepts is antiquated. True it's difficult to gauge a students [sic] performance in an untraditional environment, it would move things to a discussion group rather than a cram your brain and vomit the information on the test the next day practice of traditional students. (Study II)*

With regard to the final question on academic integrity asking if instructors could maintain academic integrity in their online courses, several respondents did say that it was the responsibility of the instructor to implement preventive measures and to follow up on transgressions when they did occur. There were a number of suggestions on what might be used as preventive measures. Some recommendations were more practical than others. Overall, respondents' suggestions for creating an environment where cheating is made more difficult were consistent with the literature, that is, use randomized, timed exams with essay questions, webcams, Turnitin, and proctored settings.

Among her recommendations for what instructors could do to facilitate a culture of academic integrity when designing online courses, Kleinman (2005) suggested that instructors begin each course with what she called a "course expectations agreement" setting forth mutual expectations. We would suggest that this is also the place to raise the issue of what constitutes academic integrity. In such an "expectations agreement," the instructor could define what resources and under what conditions technology could be used for which parts of the course. We might go further to suggest that restrictions on the use of Web-based resources in both online

and classroom courses, including exams be liberalized. Instructors would need to define what is and is not acceptable. As a start, that might mean compiling a list of reliable sites; providing an explanation of what constitutes credible information sources, and defining and providing examples of properly cited and credited source material.

Of interest in Kleinman's (2005) examples of what constitutes academic dishonesty, were copying material without citing the source, cheating or helping another student on an exam, and distorting information. Somewhat surprisingly, in this study, some students, albeit a small number responded that having others take the exam for them was an acceptable practice (in an online course, 2.5%; in both an online and in the classroom, 2%). In another example, sharing an exam, paper or project with another student to allow that student to use the exam, paper or project as his or her own, 1.5% responded that such behavior was acceptable in the online environment. Five percent said it was acceptable in both the online and classroom settings!

Bender (2003) suggests that one way to guard against violations of academic integrity in the online environment is for instructors to take responsibility for knowing a student's work. Although she was writing about plagiarism, her comments are relevant to much of online instruction. Instructors' use of threaded discussions in online and hybrid courses is not unusual today. Its use is, she suggests, one way to become familiar with how the student thinks and writes.

In their study of business students, Baetz et al. (2011) found that gender was a significant factor in what students viewed as academic dishonesty. However, their results were different than those in this study. They found that females were less likely to be dishonest than males. In this study, the females view of what was acceptable behavior in the classroom and online was more expansive than that of their male counterparts. While this may be a difference rooted in how the question was posed, of actions versus views, the difference was still interesting. One would expect that the two would be more consistent.

Wotring and Bol (2011) found that age made a difference in how issues of academic dishonesty were viewed. Their study of community college students, as did this study of college and graduate business students, found that Millennial (Generation Y) students viewed fewer activities as cheating than did older students.

The responses to these questions on academic integrity were interesting and provocative. Students' perspectives on the use of resources in exams, sharing work with others and using material not expressly allowed by the instructor were unexpected. There seemed to be an acceptance of 21st century technology as a legitimate and in some cases, necessary, part of the educational tool kit. If the goal of higher education is to instill in students the critical thinking skills necessary to tackle and solve problems worth solving, perhaps we need to understand and use the technology that is available to instructors, to students as learners, and to professionals in the workplace. The onus may be on educators, rather than on students to "stop the cheating." In order to "stop the cheating" might mean redefining what constitutes "cheating".

## Limitations

As noted earlier, the studies to date have been focused largely on undergraduate and graduate level business students at one private nonprofit university in Southwestern Pennsylvania. While growing, the university's experience with online instruction is recent. The first fully online courses were initiated in 1999. Since that time, the university has added more than 250 online and partially online courses. Current offerings include eight undergraduate and twelve graduate degree programs online, and ten online certificate programs.

With regard to the strong response rate for each of the surveys, that could be attributed in part to having offered "extra credit" for taking the survey. The "extra credit" incentive applied to the graduate and undergraduate business courses.

## CONCLUSION AND RECOMMENDATIONS

Are students using technology, specifically, the Internet inappropriately when taking exams, writing papers, doing projects? Results from this study would indicate that students view accessing the Internet and otherwise using Web-based resources as legitimate learning tools, not cheating.

As one student remarked, professors need to accept the fact that students are accessing the resources they need to learn the material being taught in the course because that is what would be expected in the "real world". That said, perhaps, we as instructors could turn this "new reality" into a positive learning experience. How, you might ask? Instructors might develop measurements for how well students are using technology to enhance their learning. Educators might design course assignments to take advantage of resources available on the Internet (beyond Wikipedia). Also, instructors might restructure exams in a way that acknowledges a need to measure different skills (other than recitation of text material) and to reflect the 21st century work environment.

Finally, instructors and institutions may need to reevaluate how the tenets of academic integrity, that is, honesty, fairness, respect, responsibility, and trust are perceived by students and by instructors, to acknowledge the realities of a cyber-world. It would seem that there are different views of how learning occurs. Should that prove to be the case, it would suggest that adjustments need to be made in how on ground as well as online courses are designed going forward.

Copies of the separate survey instruments may be obtained from the authors.

## REFERENCES


Albers, K. (2007). Poll: Tougher catching cheating with online test takers, educators say. *Naplesnews.com*. Retrieved May 12, 2010 from http://www.naplesnews.com/news/2007/jul/15/tougher_catch_co...

Allen, I. E., & Seaman, J. (2013). *Changing course: Ten years of tracking online education in the United States*. Babson Survey Research Group and Quahog Research group, LLC. Retrieved April 9, 2013, from http://www.onlinelearningsurvey.com/reports/changingcourse.pdf

Baetz, M., Zivcakova, L., & Wood, E., Nosko, De Pasquale, D., & Archer, K. (2011). Encouraging active classroom discussion of academic integrity and misconduct in higher education business contexts. *Journal of Academic Ethics*, *9*, 217–234. doi:10.1007/s10805-011-9141-4

Baggett, S. B., & Williams, M. (2012, January-March). Student behaviors and opinions regarding the use of social media, mobile technologies, and library research. *Virginia Libraries*, 19-22.

Bender, T. (2003). *Discussion-based online teaching to enhance online learning: Theory, practice and assessment*. Sterling, VA: Stylus Publishing.

Bowen, W. G. (2013, March 25). Walk deliberately, don't run, toward online education. *The Chronicle of Higher Education*. Retrieved March 28, 2013, from http://chronicle.com/article/Walk-Deleberately-Dont-Run/138109

Braun, T. (2008). Making a choice: The perceptions and attitudes of online graduate students. *Journal of Technology and Teacher Education*, *16*(1), 63–92.

Campbell, T. (2006). Evolution and online instruction: Using a grounded metaphor to explore the advantageous and less advantageous characteristics of online instruction. *Bulletin of Science, Technology & Society*, *26*, 378–387. doi:10.1177/0270467606293296

Christakis, E., & Christakis, N. A. (2012). *Harvard cheating scandal: Is academic dishonesty on the rise?* Retrieved from http://ideas.time.com/2012/09/04/harvard-cheating-scandal-

Cole, M. T., Shelley, D. J., & Swartz, L. B. (2013). Academic integrity and student satisfaction in an online environment. In H. H. Yang, & S. Wang (Eds.), *Cases on online communities and beyond* (pp. 1–19). Hershey, PA: IGI Global.

Cole, M. T., & Swartz, L. B. (2013). Understanding academic integrity in the online learning environment: A survey of graduate and undergraduate business students. In *Proceedings of the 20th Annual ASBBS Conference* (pp. 738-746).

Cole, M. T., Swartz, L. B., & Shelley, D. J. (2013). Enhancing online learning with technology: A survey of graduate and undergraduate business students on their use of social media in course work. In *Proceedings of the 11th Hawaiian International Conference on Education (HICE 2013)* (pp. 3745-3809).

Eshet, Y., Peled, Y., & Grinautski, K. (2012). I did not know its prohibited- Academic dishonesty in online courses. In *Proceedings of the 6th International Conference on Application of Information and Communication Technologies (AICT2012)*.

Ghaffari, M. (2009). Instant gratification and culture of academic disintegrity: Implications of trinity paradigm of intelligence in developing a culture of integrity. *The International Journal of Interdisciplinary Social Sciences*, *3*(10), 89–101.

Green, E. L., & Wenger, Y. (2013, March 28). Townson professor investigated over allegations of plagiarism. *The Baltimore Sun*. Retrieved March 29, 2013, from http://www.baltimoresun.com/news/Maryland/education/bs-md-towson

Greenhow, C., Robelia, B., & Hughes, J. E. (2009). Learning, teaching, and scholarship in a digital age: Web 2.0 and classroom research: What path should we take now? *Educational Researcher*, *38*(4), 246–259. doi:10.3102/0013189X09336671

Grijalva, T. C., Kerkvliet, J., & Nowell, C. (2006). Academic honesty and online courses. *College Student Journal*, *40*(1), 180–185.

Harmon, O. R., & Lambrinos, J. (2008). Are online exams an invitation to cheat? *The Journal of Economic Education*, 116–125. doi:10.3200/JECE.39.2.116-125

Hart, L., & Morgan, L. (2010). Academic integrity in an online registered nurse to baccalaureate in nursing program. *Journal of Continuing Education in Nursing*, *41*(11), 498–505. doi:10.3928/00220124-20100701-03 PMID:20672759

Hinman, L. M. (2002). Academic integrity and the world wide web. *Computers & Society*, 33–42. doi:10.1145/511134.511139

Hollister, K. K., & Berenson, M. L. (2009). Proctored versus unproctored online exams: Studying the impact of exam environment on student performance. *Decision Sciences Journal of Innovative Education*, *7*(1), 271–294. doi:10.1111/j.1540-4609.2008.00220.x

Huang, W. D., & Nakazawa, K. (2010, September). An empirical analysis of how learners interact in wiki in a graduate level online course. *Interactive Learning Environments*, *18*(3), 233–244. doi:10.1080/10494820.2010.500520

*International Center for Academic Integrity*. (n.d.). Retrieved from http://www.academicintegrity.org/icai/home.php

Kerner, N. K., & Gunderson, B. (2012). Integration of technology into undergraduate education via cross-disciplinary pollination. *Sloan-C*. Retrieved July 11, 2012, from http://sloanconsortium.org/effective_practices/integration-technology-undergraduate-education

Kidwell, L. A., Wozniak, K., & Laurel, J. P. (2003). Student reports and faculty perceptions of academic dishonesty. *Teaching Business Ethics*, *7*, 205–214. doi:10.1023/A:1025008818338

Kleinman, S. (2005). Strategies for encouraging active learning, interaction, and academic integrity in online courses. *Communication Teacher*, *19*(1), 13–18. doi:10.1080/1740462042000339212

Mangan, K. (2006). Survey finds widespread cheating in mba programs. *The Chronicle of Higher Education*, *53*(6), A44.

McCabe, D., & Pavela, G. (2000). Some good news about academic integrity. *Change*, 32–38. doi:10.1080/00091380009605738

McCabe, D. L., Butterfield, K. D., & Trevino, L. K. (2006). Academic dishonesty in graduate business programs: Prevalence, causes, and proposed action. *Academy of Management & Learning*, *5*(3), 294–305. doi:10.5465/AMLE.2006.22697018

McCabe, D. L., Trevino, L. K., & Butterfield, K. D. (2001). Cheating in academic institutions: A decade of research. *Ethics & Behavior*, *11*(3), 219–232. doi:10.1207/S15327019EB1103_2

McNabb, L., & Olmstead, A. (2009). Communities of integrity in online courses: Faculty member beliefs and strategies. *Journal of Online Learning and Teaching*, *5*(2), 208–221.

Miller, A., Shoptaugh, C., & Wooldridge, J. (2011).. . *Journal of Experimental Education*, *79*, 169–184. doi:10.1080/00220970903567830

Otte, G., Gold, M., Gorges, B., Smith, M., & Stein, C. (2012). The CUNY academic commons: Social network as hatchery. *Sloan-C*. Retrieved July 11, 2012, from http://sloanconsortium.org/effective_practices/cuny-academic-commons

Perez-Pena, R. (2012, August 31). Harvard students in cheating scandal say collaboration was accepted. *The New York Times.* Retrieved April 8, 2013, from http://www.nytimes.com/2012/09/01/education/students-of-harvard-cheating-scandal-say-group-work-was-accepted.html

Recursos Humanos. (2010). Dueling age groups in today's workforce: From baby boomers to generations X and Y. *Universia Knowledge @ Wharton.* Retrieved from http://www.wharton.universia.net/

Rowe, N. (2004). Cheating in online student assessment: Beyond plagiarism. *Online Journal of Distance Learning Administration, VII*(II).

Shelley, D. J., Cole, M. T., & Swartz, L. B. (2010). Students' perceptions of academic integrity in the online learning environment. In *Proceedings of E-Learn 2010-World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education* (pp. 2165-2175).

Sloan Consortium. (2013). *New study: Over 6.7 million students learning online.* Retrieved April 7, 2013, from http://sloanconsortium.org/news_press/january2013_new-study-over-67-million-students-learning-online

Stuber-McEwen, D., Wiseley, P., & Hoggart, S. (2009). *Point, click, and cheat: Frequency and type of academic dishonesty in the virtual classroom.* Retrieved March 28, 2010, from http://www.westga.edu/-distance/ojdla/fall123/stuber123.html

Thakkar, M., & Weisfeld-Spolter, S. (2012). A qualitative analysis of college students' perceptions of academic integrity on campus. *Academy of Educational Leadership Journal, 16*, 81–88.

Thomas, E. E., & Sassi, K. (2011). An ethical dilemma: Talking about plagiarism and academic integrity in the digital age. *English Journal, 100*(6), 47–53.

Winerip, M. (2013, March 29). Ex-schools chief in Atlanta is indicted in testing scandal. *The New York Times,* Retrieved April 2, 2013, from http://www.nytimes.com/2013/03/30/us/former-school-chief-in-atlanta

Worting, K. E., & Bol, L. (2011). *Generational differences among community college students in their evaluation of academic cheating.* Community College Journal of Research and Practice, 35, 724–735.

Wyatt, G. (2005). Satisfaction, academic rigor and interaction: Perceptions of online instruction. *Education, 125*(3), 460–468.

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