Using Online Games to Fight Plagiarism: A Spoonful of Sugar Helps the Medicine Go Down

By Mary J. Snyder Broussard and Jessica Urick Oberlin

While the recent literature on plagiarism is plentiful, it remains incomplete. Most cases of plagiarism appear to be “accidental,” stemming not from a desire to deceive, but from an honest ignorance or confusion (Barry, 2006; Drinan & Gallant, 2008). Students have good reason to be confused; it is difficult to find a definition of plagiarism that faculty and administrators can agree upon because standards of practice vary across disciplines and cultures. To make matters worse, many professors do not address plagiarism in class because they assume students arrive at college more prepared than they actually are. Students are left being responsible not to cross an obscure line that they have never been taught to recognize.

While the dictionary definition of plagiarism is easily understood, a working knowledge of plagiarism is more difficult. Plagiarism may be committed through ignorance as a result of an inability to paraphrase or to cite correctly. Many students do not understand how to create original writing while using other authors’ sources. Anne Hudgens, the director of campus life at Colorado State University, described this as a “skill deficit (Larez, 2004, 12)” and many scholarly writers encourage professors to acculturate their students into academia by encouraging the development of these skills (Lampert, 2008; MacDonald & Carroll, 2006). Students should come to value citation not to avoid getting into trouble, but as “an ideal of integrity and reciprocity (Eodice, 2008, p. 12).”

Lycoming College subscribes to a plagiarism detection service called Turnitin which is administered through the library. The librarian responsible for assisting professors with this software has had an opportunity to see examples of plagiarism from many disciplines and perceived a need for additional methods of plagiarism education on campus. She felt the first step was to find out what incoming college students felt was right and wrong in regards to plagiarism through a survey of first-time freshmen. The second step was to unveil an online educational game called Goblin Threat (http://www.lycoming.edu/library/instruction/plagiarismgame.html) as a new approach to plagiarism education.

Literature Review

Current college students have grown up in a participatory culture where copying and repackaging information on the Web is not only acceptable, but a way of life (Abilock, 2009). Barbrook (2002) refers to this group of students as the “Napster Generation” (p. 279). With such a background, it is no wonder that students do not see plagiarism as a serious ethical violation. Wood & Warnken (2004) observed that most cases of academic dishonesty at their university dealt with differences in values of the students from the institutions.

The quantity of professional literature on student plagiarism testifies to the ongoing nature of the problem. The literature is divided into three categories: plagiarism detection, plagiarism prevention, and surveys of students and faculty. The older literature tends to focus on detection of plagiarism after it has occurred. The modern literature on plagiarism detection focuses on the strengths and weaknesses of popular detection software such as Turnitin or how to use Google phrase searching to track originality if a professor does not have access to such services (Badke, 2007). Nearly all of these articles stress that while technology can do a lot of detective work, nothing replaces
the need for human interpretation of these services' originality reports (Maurer, Kappe, & Zaka, 2006; McKeever, 2006; Warn, 2006).

More and more literature is focusing on plagiarism prevention through education, process-based assignment design, and institutional policies. Robillard (2008), an English composition instructor, frames plagiarism as something to be studied within the context of authorship and American culture. Barry (2006) and Landau, Druen, and Arcuri (2002) tested the effectiveness of in-class paraphrasing and citation exercises and found these to be valuable in providing students a working knowledge of plagiarism avoidance. Several articles address the use of online plagiarism education materials. Madray (2008) created separate online materials for faculty and students as part of her comprehensive plagiarism initiative. Jackson (2006) discusses a tutorial that focused on plagiarism and citation which was created in 2003. Post-tests showed the tutorial was effective for definitions of plagiarism, penalties, and pieces of a citation. Students continued to struggle with defining paraphrasing, when direct quotations are appropriate, and identifying what needs to be cited. They were still unable to identify poor paraphrases.

Schirmer (2008) argues that traditional research papers focus too much on the end result: the paper. More emphasis should be placed on teaching how to write a research paper, which can be done through process-based assignment design. Perhaps the most comprehensive introduction to process-based assignment design is Hurlbert, Savage, and Smith (2003). Breaking the research paper down into incremental steps forces students to focus on the process of writing a research paper, rather than just the end result. This makes intentional plagiarism very difficult, decreases unintentional plagiarism due to procrastination, and ultimately enhances student learning. Other articles focus on a particular type of process-based assignment such as Walden and Peacock’s (2006) i-Map, a creative take on a research journal assignment. Scimmarella (2009) provides further suggestions for assignment design including annotated bibliographies, photocopies of sources, clear instructions, providing students specific topics to chose from, providing suggested resources, oral reports on the research process, meta-learning essays, and situational assignments.

Brown and Howell (2001) found that educational policy statements were more effective than warning policies. MacDonald and Carroll (2006) provide a survey of several British and Australian universities that have adopted new institutional plagiarism policies, though it is too soon to see the effects of the new policies. They continue to provide seven suggestions that institutions should consider when developing new policies, while stressing that each institution needs to adapt these policies for their community while basing all changes on assessment.

Drinan and Gallant (2008) argue that librarians should play a key role in the fight against plagiarism because they are centrally located on campus. Librarians already teach students ethical information skills and can often observe how students work on research assignments. Furthermore, they can work with faculty across academic disciplines and administrators (Abilock, 2009). Librarians can assist in a number of ways, including participating in plagiarism education through workshops, bibliographic instruction, and online tutorials; assist professors in detecting plagiarism through online programs such as Turnitin; and partner with professors to develop effective assignments that discourage plagiarism.

Survey

The Goblin Threat game, which will be described later, was developed over a period of several months. As the game development came to a conclusion near the beginning of a new academic year, the librarian decided it would be a good time to administer a survey on what our incoming students really knew about plagiarism, rather than the assumptions she had made based on her work with these students in class, at the reference desk, and as the campus administrator of Turnitin. In the fall of 2009, the librarian sent an online survey to the 388 new first-time freshmen. Respondents who provided their e-mail address were entered into a drawing for a $25 campus bookstore gift certificate. One hundred
nine surveys were started, 80 of which were complete. The survey was launched during the first week of class and closed in the second week of class in an effort to assess these students’ preparation prior to arriving at college.

The goal of this survey was to find out what current freshmen know about plagiarism and what they think is right and wrong. The survey did not ask if they have ever knowingly committed plagiarism. Students were asked to give a brief definition of plagiarism. They were then given 16 short scenarios and asked to rank how ethical the behavior is on a seven-point Likert scale, with one being “completely unethical” and seven being “completely ethical.” For each of these scenarios, respondents were given a place for comments if they felt explanations were necessary. They were then asked about their previous plagiarism education, how to use information ethically when writing a research paper, if they had read the academic honesty statement in the Lycoming College student handbook, and who they would turn to if they had questions.

The New Oxford American Dictionary’s definition of plagiarism is “the practice of taking someone else’s work or ideas and passing them off as one’s own” (p. 1296). While the rest of the data analysis for the survey will only analyze the 80 completed surveys, content analysis was performed on all 85 definitions respondents provided from the 109 surveys that were started. Overall, the definitions were quite good, showing that all students have a solid basic understanding of the definition of plagiarism. Of the 85 definitions, 77 (90.6%) include the idea of taking someone else’s work, and another seven (8.2%) specify copying exact words. Fifty-six (65.9%) mention claiming that work as one’s own. Approximately one third (34%) mention lack of citation or credit. When analyzing the vocabulary used to describe exactly what is being copied from original sources, 56 (65.9%) respondents used the word “work,” 21 (24.7%) used “words” or “writing,” 23 (27.1%) used “ideas” or “thoughts,” and 5 (5.9%) used the word “something.” There were a small number of other words used, such as “intellectual property,” “material,” and “works of art.” It is unclear from the choice of words used if a majority of students have a clear understanding that plagiarism includes taking credit for others’ ideas, not just their exact words, or that plagiarism can occur in students’ presentations and forms of art as well as written assignments.

Of particular interest in respondents’ definitions is the additional information many definitions included beyond what is described in the dictionary. There were a small number of comments within the definitions of plagiarism that seem to indicate confusion between plagiarism and copyright. Four definitions included a statement about not having the consent or permission from the original author, another said it was plagiarism to copy work that was “labeled as copy written,” and yet another that mentioned it was a problem to copy published work. While plagiarism and copyright each involve the concept of intellectual property, it is important that students realize they can easily plagiarize unpublished works such as fellow students’ papers with or without permission from the original author. In addition, four included comments about plagiarism for personal gain. This fits in with the literature stating that those who commit blatant plagiarism are not necessarily lazy, but may feel their own writing is deficient (Muldoon, 2009).

Analyzing the median answers of the 16 Likert scale questions, the students performed surprisingly well on the survey. See Appendix 1 for student responses. Respondents were consistently aware that buying a paper online is highly unethical, as is making up citations, using excerpts without quotation marks, and that they cannot copy Web resources without citation just because the copyright is not obvious. They know it is perfectly ethical to ask tutors, parents, and librarians for research and writing advice.

While many other median answers showed impressive results, there is often a significant minority who did not answer a question correctly. Comments showed there remains a significant amount of confusion on these issues. While two thirds (66.3%) of students realize that it is unethical to turn in a paper for a new course when they have already received credit for it in a previous course.
(self-plagiarism), 18.8% felt this was ethical behavior. A further study of the comments shows that students feel that if it is their work, it cannot be plagiarism. One student wrote, “If it’s your own you should be allowed to reuse the information and work you already did.” Students continue to be confused about the use of common knowledge in their research papers. Only 65% felt that using common facts without citation was ethical. Of those students who included comments, they felt it was better to find something you could cite or said they were guilty of doing this but knew it was wrong. This is less problematic than other issues regarding plagiarism, but it still shows an area where we can improve in our provision of education. Seventeen point five percent of respondents felt it was unethical to base their papers on research that others had conducted even if they rephrased and properly cited their sources. One student correctly commented, “This is the exact opposite to plagiarizing,” while several others felt it depended on the circumstances. As librarians and professors are trying to teach students to paraphrase and cite their sources in research papers, the fact that nearly one fifth of students feel this is unethical is startling.

The next part of the survey asks students about their preparation. All students reported having at least some discussion of plagiarism during college or high school. A surprising number of students said that plagiarism had been discussed in college (64 out of the 75 respondents who answered that question). Perhaps this refers to professors going over the plagiarism policy in their syllabi in the first week of class. When asked to comment on their preparation, a common response was “Every teacher has outlined what plagiarism means and how they will not tolerate it.” Some criticized teachers and librarians for focusing on the definition and punishments for plagiarism, and yet not providing helpful information on how to avoid plagiarism. Just over half of the respondents (55%) reported having read the academic dishonesty policy in the student handbook.

Eighty-four percent of respondents reported having someone they would be willing to approach if they had questions about plagiarism. They were then asked who they would turn to. The largest group (45) were high school teachers or college professors, the next largest group (18) was librarians. Surprisingly, eight respondents mentioned asking their resident assistant, more than tutors (six), parents (four), another student (four), authority at school (four), or looking it up on the Internet (one).

While several weaknesses in the survey were revealed, the results begin to shed some light on what students know and how they feel towards plagiarism. Based on her experience, the librarian had assumed students were ignorant in areas where nearly all survey respondents answered correctly. No students are being completely unprepared when it comes to plagiarism. However, they may be getting more frequent lectures on the punishments for plagiarism than helpful tips on how to avoid it. The most significant overall result is that while students know the basics, there is still a significant minority of students who are confused on many issues. Because the students scored more highly than anticipated and the respondents were disproportionately female (71%), the results may be tainted by self-selection, where stronger students were more willing to commit the time to completing the survey. Future administrations of this survey will strive for a more representative group by asking professors to administer the survey in class during the first week of the semester, and further discussed in focus groups.

**Goblin Threat**

While the game was nearly complete by the time the survey results became available, the results affirmed that continued efforts are needed to reach all students. We want to ensure all students have a thorough education when it comes to plagiarism. The Snowden Library at Lycoming College already had an online tutorial with an interactive review quiz hosted on its Web site. However, we desired a more interactive and engaging activity to teach about a topic that everyone dreads. It was decided that the amount of time necessary to create an online educational game on plagiarism would pay off as it could be offered to faculty in all disciplines and at all levels as a tool for starting this important conversation.
Studies are beginning to show that digital game-based learning can be an effective way to educate students. Online games allow for a highly interactive learning environment with continuous feedback, and a chance to practice new skills in a low-risk situation (Adcock, 2008; Gee, 2003). Games can promote intrinsic motivation and a positive attitude toward learning (Bourgonjon, Valcke, Soetaert, & Schellens, 2010; Edery & Molick, 2008; Gee, 2003; Kickmeier-Rust & Albert, 2010). Games “can easily be made fascinating enough to put over the dullest facts” (Mood & Sprecht, 1954, as cited in Salen, 2008, p. 2), such as plagiarism.

Inspiration for the game came from a number of point-and-click casual games such as Dream Chronicles and Escape Artist. The Casual Games Association defines a casual game as “developed for the general public and families, [they] are non-violent video games that are fun and easy to learn and play.” The game was intended to be relatively short in order to maintain student motivation with a heavy focus on the educational content rather than a rich story or realistic graphics.

Goblin Threat was built using Macromedia Flash and placed on the library Web site. Flash is a powerful program that enables the production of highly interactive Web objects. Disadvantages to Flash documents include an inability to save progress without advanced programming knowledge, requiring the player to restart the game if they accidentally hit the refresh button in their Internet browser, and non-compliance with screen-reading software for students with visual disabilities. The graphics were created within Flash using local photographs when possible. Google Images provided inspiration for other graphics. Sound files came from the Free Sound Project, a collection of sound effects available under the Creative Commons license. All non-local photographs and sound effects are attributed on a credits Web page associated with the game.

The story of Goblin Threat is that goblins have invaded the campus and are trying to undermine its academic integrity. Players have to go through a series of rooms, find a number of hidden goblins, and eliminate each one by correctly answering one question on plagiarism or academic dishonesty. Once each room is cleared of goblins, players can continue to the next room. Progress is tracked on the lower part of the game window by informing players how many goblins are left in that room and how many rooms have yet to be cleared of goblins. Students have an unlimited number of attempts to correctly answer each question, and feedback is provided whenever a student attempts to answer a question. The last room is the secret dungeon, which serves as a final review. Eliminating the last goblin leads to an avalanche that blocks the goblins’ access to the college. The game ends with a certificate of completion so that professors can require the game as homework. A player cannot get to the final screen without completing the game. The current version of the game requires players to enter their names on the first screen, and these names are included on the certificate at the end. It is therefore difficult for a student to complete the game and print off multiple copies for friends.

A serendipitous opportunity arose as the librarian approached writing the questions. A Lycoming College graduate who had several years’ experience as a high school English teacher asked to intern at the Snowden Library as part of her studies to obtain a Master of Library Science degree. During this project, she obtained a position as a high school media specialist. Due to her classroom experience, the intern offered more practice writing quiz questions, feedback, and instructions. In addition, she was able to make valuable creative suggestions to enhance the details of the game play. Neither the librarian nor the intern felt that all multiple-choice/true-or-false questions were the most effective teaching method or the most fun strategy for game players. However, in an online format, game developers are limited to what a computer can evaluate. They decided to mix multiple-choice questions with matching questions where there can be multiple right answers and “hot spot” questions that require the player to identify the correct object on the screen. Many of the questions, particularly the matching questions, used graphics to tie the question into the game. For example, one question has possible answers written on Post-It notes and students have to sort the correct and incorrect answers
on a bulletin board. Most of the questions were presented as scenarios so that students would be encouraged to imagine themselves in a meaningful situation that required a decision.

The game was posted on the Information Literacy Instruction (ILI) listerv towards the end of its development and made public on the library’s Web site and promoted to the campus faculty. The page quickly became one of the most-viewed pages of the library’s Web site. As the game did not ask any questions that were specific to Lycoming’s policies, it could be used by students at other colleges, universities, or high schools. The intern who helped design the questions introduced it to her high school students as she showed them how to do research papers. These seemed particularly appropriate as many of the issues of plagiarism in higher education involve students’ preparation or lack of preparation in high school. All of the classroom teachers she was working with were interested in her teaching their students about plagiarism and citation, but only some were interested in the game. She observed a significant difference between the students who had played the game in comparison to those who received a presentation on the same topic. The students showed more diligence in keeping track of their information sources, citing them properly, and using the help tools she had created for this purpose. Teachers who did not have students play the game complained more of students’ lack of works cited pages, improper citations, and even blatant plagiarism. The students were enthusiastic about the game, one even asked if she would create additional games for their senior year. She would like to adjust the questions to be more relevant to her students. With the full Flash program and files, it is easy to adapt the questions.

Feedback on Goblin Threat came in the form of e-mails and a brief online survey linked to the end of the game for the first few weeks after it was made public. The feedback provided by e-mail was overwhelmingly positive. Most of these came from librarians at other institutions who learned about this resource on the ILI listerv. Such feedback included “Your plagiarism game as shared on the ILI listserv is absolutely fabulous!” and, “Your game is so much more interesting than normal plagiarism tutorials!” A number of librarians and teachers requested permission to link to this game from their Web sites or use in orientation or instruction sessions. Several librarians and faculty identified minor glitches or made suggestions for improvement that were easily incorporated into the game before it was promoted to students.

Those who provided feedback through the online survey included much praise as well as some criticism. Eighty-eight players responded to the survey in varying degrees of detail. Of those, 66 were students (of which 43 were Lycoming students, 23 of which did not designate where they were students), eight were faculty/staff at Lycoming or elsewhere, and 14 provided no information as to their status or location. Of all respondents, 39.8% reported taking less than 10 minutes to complete the game, and another 51.1% took between 10-20 minutes. As this game is aimed at students, the most informative feedback came from those who indicated they were students. Thirty-nine point four percent reported taking less than 10 minutes to complete the game, with another 54.5% taking between 10 and 20 minutes. Eighty-three percent reported having found the game educational, with only 6.1% saying it was not educational. Twenty-five point eight percent used the words “fun,” “entertaining,” or “interesting” to describe the game. Four commented they preferred this method of learning to a traditional lecture on plagiarism. The most common criticism is that a number of students (nine) found the goblins hard to find or catch, several of these respondents felt that searching for the goblins was a waste of time. Two felt the game was juvenile, and two criticized the inability to change an answer if they knew they had already completed part of it incorrectly. One was insightful enough to point out that it would be best to “reinforce what was learned with a short discussion.”

The feedback shows this is a good tool to deliver plagiarism education to undergraduate students. As a vast majority of students can complete the game in less than 20 minutes, professors can easily add it as an additional homework assignment without overwhelming their students. It would be most successful if faculty are encouraged to follow this homework
assignment with a brief discussion in class. Most students have a positive attitude towards the game and report finding it educational. Due to the fairly significant number of students who struggled finding or catching the goblins, the traditional tutorial will continue to be available and professors encouraged to offer students a choice between the game or the tutorial. This fits in with at least one prominent author who warns that game-based learning is not for everyone and players should be provided with a choice of more traditional learning tools (Prensky, 2001).

Conclusion

In order to be effective, the fight against plagiarism must come from many places on campus and must begin with a solid understanding of what students already know. Faculty must discourage plagiarism through education and creative assignment design. The institution must have effective policies and procedures in place to ensure students have the necessary knowledge to succeed and to effectively deal with students who are accused of blatant and unintentional plagiarism. Writing tutors should receive special training on paraphrasing, citation, and plagiarism. Non-academic support staff should be trained on these processes and referring students to the correct people. The library can play an important role by including ethical information use in information literacy sessions; educating the faculty and administration about plagiarism; encouraging good assignment design among faculty; offering citation help in paper, online, and in-person; and providing online educational resources that meet the needs of students.

The survey and the Goblin Threat game are just a part of Lycoming College’s fight against plagiarism. The survey provides our staff and faculty with a glimpse into the minds of our incoming freshmen in regards to what they truly know about plagiarism. The game was created to appeal to undergraduate students who have grown up with casual online games. Games take a fair amount of time and skill to create, but for important or particularly dreaded topics that are useful to a wide range of disciplines, the effort can pay off. Goblin Threat has been well-received by our faculty and students and has been surprisingly popular outside of our campus community. It provides students with a foundational knowledge of plagiarism, which can be built on by faculty through practice exercises and well-crafted assignments.

References


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Authors

Mary J. Snyder Broussard
Assistant Professor and Instructional Services Librarian, Coordinator of Reference and Assessment
Snowden Library
Lycoming College
700 College Place
Williamsport, PA 17701
broussm@lycoming.edu
(570) 321-4068

Jessica Urick Oberlin
High School Librarian
Warrior Run School District
4800 Susquehanna Trail
Turbotville, PA 17772
570-649-5166 X112
jurick@wrdefenders.org
## Appendix 1

<table>
<thead>
<tr>
<th>Activity</th>
<th>Median answer</th>
<th>Percentage of respondents who chose 1-3 (unethical)</th>
<th>Percentage of respondents who chose 5-7 (ethical)</th>
<th>Percentage of respondents who did not answer</th>
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<tbody>
<tr>
<td>1. Turning in a paper that you wrote last semester for credit in this semester’s course</td>
<td>2</td>
<td>66.3%</td>
<td>18.8%</td>
<td>0%</td>
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<tr>
<td>2. Asking a writing tutor’s advice on how you can improve your rough draft</td>
<td>7</td>
<td>0%</td>
<td>100%</td>
<td>0%</td>
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<tr>
<td>3. Buying a research paper through an online service because you don’t have time to write one yourself</td>
<td>1</td>
<td>97.5%</td>
<td>1.3%</td>
<td>1.3%</td>
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<td>4. Basing your paper on research that other people conducted. You have rephrased the information in your own words and documented your resources</td>
<td>7</td>
<td>17.5%</td>
<td>75%</td>
<td>0%</td>
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<tr>
<td>5. Asking your mother for advice on how you can</td>
<td>7</td>
<td>1.3%</td>
<td>95%</td>
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<td><strong>improve your rough draft</strong></td>
<td>6</td>
<td>16.3%</td>
<td>75%</td>
<td>1.3%</td>
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<td><strong>6. Having a friend review your rough draft and the friend makes corrections to improve it</strong></td>
<td>1</td>
<td>87.5%</td>
<td>1.3%</td>
<td>1.3%</td>
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<td><strong>7. Copying uncopyrighted material from the Internet</strong></td>
<td>1</td>
<td>90%</td>
<td>3.8%</td>
<td>2.5%</td>
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<tr>
<td><strong>8. Making up citations for a research paper because you can’t tell from your notes which information came from which source</strong></td>
<td>6</td>
<td>11.3%</td>
<td>77.5%</td>
<td>0%</td>
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<tr>
<td><strong>9. Building on research from a previous class for a new research paper</strong></td>
<td>7</td>
<td>0%</td>
<td>100%</td>
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<td><strong>10. Asking a librarian for help finding information sources</strong></td>
<td>7</td>
<td>1.3%</td>
<td>95%</td>
<td>0%</td>
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<tr>
<td><strong>11. Asking a friend for help finding information sources</strong></td>
<td>6</td>
<td>21.3%</td>
<td>65%</td>
<td>0%</td>
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<tr>
<td><strong>12. Including common facts and knowledge in your paper without citation</strong></td>
<td>2</td>
<td>81.3%</td>
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<td><strong>13. Using another student’s ideas for your research project</strong></td>
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<td>14. Lending another student one of your papers, so that he or she can see what a good paper looks like</td>
<td>4</td>
<td>41.3%</td>
<td>46.3%</td>
<td>0%</td>
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<tr>
<td>15. Using excerpts from someone else’s paper without quotation marks</td>
<td>1</td>
<td>97.5%</td>
<td>1.3%</td>
<td>1.3%</td>
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<tr>
<td>16. Citing a reference that you did not read (as cited in a source you did read)</td>
<td>3</td>
<td>53.8%</td>
<td>21.3%</td>
<td>6.3%</td>
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</table>