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Helen A. Soter  
*University of West Florida*

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## Learning How to Learn: Incorporating Metacognition in the Business Writing Classroom

Helen Soter, Instructor, University of West Florida

In my business writing classes at the University of West Florida, I have taught in computer rooms and also in standard classrooms without technology. This mixture of teaching with and without technology has made me aware of particular issues about the use of technology when writing: first, students have a false sense of their own writing abilities; second, students think that using technology improves their ability to write; and third, with the increased use of technological devices such as computers and smart phones, students' writing skills, particularly when it comes to spelling, have diminished over the years. Technology is rapidly advancing in the business world, so it is more realistic to have students do in-class writing assignments on a computer; however, there is significant value in incorporating handwritten in-class assignments because of how the brain works during the process of writing with pen or pencil. The key to blending both computer-generated and handwritten work during the classroom sessions is to make students aware of their own writing capabilities and weaknesses so that they may become more proactive learners.

The majority of the writing that is done in my class takes place in the classroom as either in-class writings (emails, letters, and memos), group work (when they work together to practice writing different types of business messages), or assessments (quizzes and exams). Only a few assignments are done outside of the classroom: the research paper, resumes, and rewrite opportunities. The purpose of the in-class writings is not only to ensure that the students are doing their own work but to also point out to students that these writings indicate their true writing ability that is not artificially manipulated by spell checkers and auto-format features. Students typically do not like these in-class writing assignments and often make the comment that they do much better when they work at home on a computer. I work with them throughout the semester to show them how the in-class writing, especially if it is written out by hand, is their "real" writing which shows a need for improvement. I also point out that in the

business world, they will not have the luxury of taking much of their work home; in fact, they will usually have to compose many messages throughout the day and at a quick pace that often does not allow time to thoroughly edit the message or to get feedback from a colleague. By the end of the semester, many students realize what their true writing abilities are and what they need to do to keep improving those skills.

Simkin, Crews, and Groves (2012) conducted a study “to determine how students perceived their own writing abilities” (p. 94). Students completed a questionnaire that asked about the importance of writing in their future careers and their beliefs in their own writing skills. The majority of students viewed the importance of writing as “very important,” and they rated themselves as “competent” writers (p. 86). The students were then assessed in three ways: a grammar and punctuation test, a vocabulary test, and a writing assignment. The results of these assessments were 66% on the grammar/punctuation test, 50% on the vocabulary test, and a surprisingly high 82% on the writing assignment, although the authors noted that this portion of the assignment could be high because it was a take-home assignment with “no controls over outside help” (p. 92). The authors conclude that “students are unaware of their own writing deficiencies, and that their perceptions of their writing abilities were inflated” (Simkin et al., 2012, p. 94). If students, then, have an inflated perception of their own writing abilities, then it is important for them to become aware of their deficiencies before they graduate from business schools and enter the work force.

When teaching business writing, an instructor should use a variety of assessments in order to point out particular deficiencies in students’ writing. These assessments need to blend computer-generated work (business letters, memos, or emails to mimic what is done in the office setting) with handwritten exercises (writing sentences on the board or answering short essay questions) that help students learn through the act of writing by hand. Once students gain a better understanding of their own writing abilities, then the instructor can point them to particular resources such as writing labs or

tutoring centers. This awareness of what it takes to learn, “thinking about thinking, or knowing about knowing” is called *metacognition* (Weinstein, Meyer, Husman, McKeachie, & King, 2011, p. 295).

Developing metacognitive skills gives students more control over their own education, enabling them to develop study habits that are suited to their own individual needs.

Ideally, the time to make students aware of metacognition is well before the student enters college. In an attempt to make sure students are prepared for college, one of the major changes to education in recent years is the implementation of the Common Core State Standards (CCSS; O’Neill, Adler-Kassner, Fleischer, & Hall, 2012). Ironically, there was an “absence of the voices of college writing teachers and researchers from the committees” that developed the CCSS standards; therefore, a task force was created so that a voice from the college level could be provided (O’Neill et al., 2012, p. 522). One of the “eight habits of mind essential for success in college writing” noted in the “Executive Summary” of the *Framework for Success in Postsecondary Writing* is metacognition (as cited in O’Neill et al., 2012, p. 525). The results of this *Framework* remains to be seen; nevertheless, metacognition can take place at any point in the student’s educational process, so it is crucial that business writing instructors understand metacognition since we are usually the last instructors at the undergraduate level to focus on developing the student’s writing skills. We should also consider how the increasing use in technology could be leading to misperceptions the student may have about his or her writing skills, and these misperceptions can interfere negatively with the metacognitive process.

In my own classes, I became aware of my students’ attitudes regarding spelling deficiencies when I would have them write out sentences in front of the class during practice sessions. Sometimes I would have them use the whiteboard; and at those time, they were not always aware of their spelling errors after writing out the sentences on the board. At other times, I allowed them to use the computer and projector; and it was on these occasions that they became aware of spelling errors as the computer immediately underlined in red the misspelled word. When that happened, I watched them mindlessly

click the word with the mouse and go to the first word that appeared on the list—regardless of whether or not it was the correct word. These students did not consider these spelling deficiencies to be a problem because the computer can correct those problems for you. I would question them further and ask them how they would know if they used *to* or *too* correctly because the computer would not mark errors like that. Only then did they see the problem with over-reliance of computers to make corrections to their writing.

Instructors should make students aware of the fact that technological advances in “writing tools” do not lead to improved writing skills or better communication. Students need to be aware of the benefits of writing by hand versus writing with a computer. Business majors in particular do not value handwritten exercises since written business communication today takes place electronically. Letters and memos are never written by hand, and email is the most common form of written communication in businesses today. There is value, however, in handwritten exercises since different parts of the brain are activated when writing by hand. Mangen and Velay (2010) explain the importance of *haptics*, “a combination of tactile perception associated with active movements (i.e. voluntary movements generated by central motor commands which, in turn, induced proprioceptive feedback),” in the teaching of writing (p. 385). When writing by hand, the brain is focused on not only the physical act of writing but also on the shape of the characters of each letter. The simultaneous focus on the tactile perception and the cognitive process of forming the letters can lead to better retention during the learning activity. In contrast, the act of typing does not require the creation of a recognizable character but simply locating the specific keys on the keyboard; thus, the cognitive process is altered enough that learning could be negatively impacted. Another difference is that when writing by hand, only one hand is used whereas typing involves the use of both hands simultaneously; while this difference may seem inconsequential, the brain processes these actions differently and may have an impact on cognitive skills. The authors suggest that “word processing software provides a number of features all of which

might radically alter the process of writing for professional as well as for beginning writers” (Mangen & Velay, 2010, p. 286).

Another aspect to consider regarding today’s business student is the fact that they prefer to read, not just write, with an electronic device. Mangen, Walgermo, and Brønnick (2013) concluded in their research that reading from printed material led to better reading comprehension than reading from electronic devices. They note that one of the factors that may have impacted the reading comprehension included “scrolling” which “is inevitable [when reading on a screen] unless the text is within the screen size” (Mangen et al., 2013, p.65). This physical action can negatively affect the ability to recall where information appeared in a particular text. Another factor noted by the authors was the differences at metacognitive levels, with metacognition indicating good reading comprehension (Mangen et al., 2013). Good reading skills are linked to good writing skills so the negative impact that electronic devices can have with regard to business writing should be considered, and more research needs to be done in this area.

Like many instructors, I ban personal electronic devices, such as smartphones, in the classroom. Students must have a hard copy textbook, not an e-book, and the book is needed to do the written work during the class session. One type of assignment that I have recently incorporated into my class is the open-book quiz. While an open-book quiz may seem like a too-easy assignment, it is an effective way to get students to actually read from the textbook. In order to answer the quiz questions, students have to spend time going through the chapter in order to locate the particular section needed to find the answer. They also have to use correct citation techniques to paraphrase or directly quote from the book; and since the quiz answers must be handwritten, students cannot rely on autoformat features built into word processing programs—sadly, another skill being lost through use of computer-generated writing: the ability to cite sources correctly. The use of the open-book quiz as an effective learning strategy is supported by Weinstein et al. (2011):

The simplest forms of learning strategies involve repetition or review, such as reading over a difficult section of text or repeating an equation or rule. A bit more complexity is added when we try to paraphrase or summarize in our own words the material we are studying. (299)

Thus, the open-book quiz can have multiple purposes: get students to read the text, write what they read, and cite the material correctly. The students then have a better ability to recall this information at a later time when applying the knowledge to a writing assignment.

There is no argument that using technology when writing makes it easier to plagiarize, but educators often make the assumption that students are deliberately plagiarizing or cheating. In my experience with business writing classes, I have found that the majority of students simply do not know how or when to cite sources. When I note areas of their papers that are plagiarized, the most common response I hear from students is that they used their own words rather than direct quotes, so they did not believe a citation was necessary. When I discuss the issue further, they typically respond with “But I’ve always done that on all of my papers and no one has ever told me it was wrong.” In fact, many claim that they have always gotten good grades on these papers. One of the reasons why students have the misconception that paraphrasing does not require a citation could be that the use of plagiarism tools such as Turnitin are increasing in use, and instructors frequently have students submit their own assignments into Turnitin before submitting the work. Consequently, the student then learns that rewording a quote will decrease the percentage of plagiarism that is detected by Turnitin, and the student falsely believes that the lower percentage means that their papers are now okay. In one study, Davis (2011) interviews colleagues who say that they often use antiplagiarism software or online tutorials as a way to decrease plagiarism. When using the online tutorials, students usually must take a quiz or complete some sort of assignment, and the instructor needs only to verify that the assignment was completed. Both the antiplagiarism software and online plagiarism tutorials decrease the need for instructor observation or feedback regarding plagiarism (Davis, 2011). Unfortunately, what happens is

that the lack of feedback from the instructor and the lower percentage of plagiarism noted by the software leads students to believe that the work is now their own simply because they reworded it. Instructors should not assume that the software will note instances of uncited paraphrases or that students will learn proper citation technique with the use of software and online tutorials alone. The use of the open-book quiz can be a fairly simple and quick way to discover whether or not students know how to cite sources when directly quoting or paraphrasing. If the students are not citing properly, or worse yet, not citing at all, then the instructor can use examples from the quizzes as lessons on proper citation technique.

There is another way to use the open-book quiz and that is to teach the “art” of note taking. Writing down the answers to an open-book quiz can be considered a form of note taking, especially when the purpose is to help students learn specific material from the textbook. Much of the research done on computer-generated versus handwritten notes of lectures tends to focus on whether or not the computer is a distraction; and as expected, the “research tends to support the professors’ view, finding that students using laptops are not on task during lectures” (as cited in Mueller & Oppenheimer, 2014). There is, however, another problem with computer-generated note taking: it can have a negative effect on the metacognitive process. Mueller and Oppenheimer’s (2014) study shows that students who use laptops to take notes end up taking far more notes verbatim from the lecture than students writing longhand; however, more notes do not lead to better test performance. The research shows that students taking notes by hand tend to perform better on tests, perhaps because the act of typing out lectures verbatim is a mindless activity that interferes with the ability to learn the material that is being transcribed (Mueller and Oppenheimer). The studies of Mueller and Oppenheimer (2014) can be compared to the studies of Mangen and Velay (2010) in that both indicate writing by hand activates areas of the brain that enable retention and recall of new information. These same areas of the brain do



not appear to be activated during the act of typing so that the use of technology in the classroom does not necessarily enhance learning.

Making students aware of the brain activity that takes place during the act of handwriting is part of the metacognitive process. Students need to understand the value of handwritten exercises in order to gain as much knowledge about the writing process as possible. In addition to making students aware of metacognition, instructors also need to be aware of metacognition in order to make adjustments to their courses in order to improve the learning process. Wen (2012) conducted a study of two universities, one in the United States and one in Taiwan, to determine the university instructor's knowledge of metacognition and techniques used to develop the students' metacognitive skills. The instructors who participated in this study demonstrated an awareness of metacognition, and a few applied metacognition into their own teaching rather than focusing solely on developing just the students' metacognitive skills. Wen (2012) concludes that more instructors need to incorporate metacognitive strategies into their own teaching in order to benefit the students' learning process.

Business writing instructors need to be aware of developing the students' metacognitive skills as well as developing their own metacognitive strategies as teachers. While the business world is becoming more dependent on technological writing tools, students need to be aware that these tools do not make communication more effective. Instructors should incorporate a variety of teaching techniques that engage all areas of the brain, including the "old-fashioned" use of pencil and paper. Since hand written exercises are not artificially manipulated with spell-check features and citation tools, they are an excellent indicator a student's true writing skills. Several studies on haptics have also shown how using the hands in the act of writing aids in retention of material learned during the physical act of writing. Therefore, handwritten assignments should not be phased out of the classroom as the use of technology increases since these types of assignments are an excellent way to make students aware of metacognition.

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