

Social Media and Distracted Studying

Kristina Bosket

SUNY Broome Community College

Abstract

This study will examine whether task switching while studying has a negative effect on a participant's ability to retain information. The participant will study lists of words in two separate phases, one while concentrating and the other browsing social media. The participant's brain waves and their ability to recall the words will be recorded to determine whether task switching is detrimental to studying. If their brain waves change and they recall fewer words during phase two, this will show that task switching has a negative impact on a student's studying outcomes. If this experiment is successful, it can provide information to students who are looking to achieve higher grade point averages.

Social Media and Distracted Studying

Using social media while studying greatly reduces a student's ability to retain information. These tasks are two types of incoming visual stimuli to the brain which require the student to think. When doing both simultaneously or switching between the two, a student is unable to fully interpret all of the incoming information because reaction time in the brain slows down when it is divided by two similar tasks. If two tasks require the same kind of attention, performance on both tasks will suffer (Just, Carpenter, Keller, Emery, Zajac, & Thulborn, 2001).

The last decade of research on multitasking has uncovered clear evidence that human information processing is insufficient for attending to multiple input streams and for performing simultaneous tasks (Junco & Cotton, 2011). Time spent on Facebook is a strong negative predictor of overall college GPA. Specifically, large increases in time spent on Facebook relate to lower overall GPAs (Junco, 2012). Despite this evidence, many students continue to task switch while studying. A study performed by CourseSmart and Wakefield Research queried five hundred college students and found that thirty-eight percent of them were not able to go more than ten minutes without checking their technological devices (Kessler, 2011). Accessing social media while studying has a negative impact on overall grade point averages (Rosen, Carrier, & Cheever, 2013).

The majority of today's society assumes that because this generation has been brought up on technology, they are more capable of multitasking. Students believe that they can effectively tackle both their status updates and college assignments together. However, we can only multitask that which is automated, and where thinking does not play a role (Kirschner & Karpinski, 2010). Studying and using social media both require a significant amount of cognitive ability. It has been broadly shown that such rapid switching behavior, when compared to

carrying out tasks serially, leads to poorer learning results in students and poorer performance of tasks (American Psychological Association, 2006). By trying to switch back and forth between studying and using social media, students are causing a cognitive overload in their brains. Meaningful learning requires that a substantial amount of cognitive processing happen in either the visual or auditory channels (Chun, Golomb, & Turk-Browne, 2011). Students are not allowing their brains enough time or attention to make sense of what they are studying. Active attention and processing are required for information to be transferred from short-term to long-term memory (Bellur, Nowak, & Hull, 2015).

Social media also appeal to a student's emotional connections and can cause them to continue to think about a specific post or picture they saw even after they switch back to studying. Meaning that even after they switch, they are still not fully involved with what they are studying. Emotions increase the theta brain wave activity, too much of the theta waves can cause inattentiveness. When individuals are constantly engaged in multiple tasks, they are only partially engaged with each task as they switch back and forth. This in turn results in less attention to information and poor performance and learning outcomes (Bailey & Konstan, 2006).

Furthermore, the more times a student switches between tasks, the less information they retain. Because chronic media multitaskers are always switching attention from one task to another, they are less capable of filtering out irrelevant stimuli or attending to the relevant information, which in turn hampers their learning and performance on a given task. They also have trouble focusing their attention, and they are more susceptible to distractions even when the stimulus is irrelevant (Ophir, Nass, & Wagner, 2009).

A study was conducted by Naveh-Benjamin & Guez, (2000) in which subjects were read a list of twelve words over sixty seconds. One group listened at full attention while the other

group was distracted by doing math problems on a computer. The distracted group's ability to recall the words was decreased by 13.3%. Therefore, I believe that by switching between social media and a series of unknown medical terms, a student's ability to remember the terms will be decreased by thirteen percent and their theta brain waves will show an increase compared to when they are paying full attention due to the emotional stimulation from social media.

Method

Participant

The participant in this experiment will be a student of the SUNY Broome Psychology 110 section 04 course of spring, 2016. The subject can be either male or female between the ages of 18 and 35. The subject must have an active social media account.

Materials and Apparatus

For this study to be conducted, I will need the Biopac MP40 to monitor the participant's brain activity. I will also need a chair for the person to sit in, a smart phone for the subject to check their social media, a stop watch to keep track of time, a pen and paper to record data, and two lists with thirty-one similar words on each of them for the participant to study.

Procedure

Before the study is conducted, I will require informed consent from the participant. I will explain the steps of the experiment and receive their permission before we continue. The next step will be to sit the participant down and attach the Biopac MP40 to them, then record their brain waves while they are at rest. After this, I will begin phase one of the experiment by giving the subject the first list of words to study for 10 minutes. When the time is up I will take the list back, ask them to recite as many words as they can remember, and record the results with a pen and paper. I will give them a 5-minute rest to allow them to destress and let their brain return to

rest. Next, phase two of the experiment will begin. I will give them a different list of words to study, they will again have 10 minutes, however, they must study the words and browse through their social media site simultaneously throughout the phase. When the time is up, I will take the list, the subject will be asked to recite as many words as they can remember and the results will be noted. I will continue to monitor their brain waves throughout the entire experiment. When we are finished I will unhook them from the Biopac MP40. The final step will be to debrief the person and ensure that he or she is okay before allowing them to leave the experiment.

Method of Analysis

After conducting the experiment, the participant's brain waves with and without task switching will be compared. The differences in their brain waves will be analyzed to determine whether or not social media affected their brain activity while studying. I will expect to see an increase in theta brain waves throughout the second phase because they are having an emotional response to their social media page. The results from their reading lists will also be examined to establish whether task switching had an effect on their ability to retain the words. I will expect their recall ability to decrease by approximately 4 words, which is 13% of the 31 words. Together, the results will act as a construct for measuring the impact that task switching has on studying. If the participant's recall ability decreased by 13% during phase two and their theta brain waves increase then this will show that task switching has a negative impact on a student's ability to retain information while studying, thus supporting my hypothesis.

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