

The school bell rings amongst the sounds of high-pitched chattering of a suburban high school. Lucy, a young freshman, was the type of student to arrive to class five minutes early, already starting the assigned homework for the day. Hardworking and persistent, Lucy always achieved high grades in her studies. However, her infatuation for social media began to affect how well she was doing in class.

Every day, Lucy scrolled through her social media feeds for hours on end. Even if she had an exam the next morning, she would stay up late at night, hooked to the colorful apps of her phone. With no willpower to study anymore, her grades started to decline. She had trouble concentrating in class, and her schoolwork reflected her lack of motivation. Lucy's addiction to social media provides insight on brain plasticity and the effect social media exposure has on it. Brain plasticity refers to the brain's way of changing and adapting to new experiences, where it grows new networks of functional change from learning (Cherry, 2022). National statistics show that the average person spends roughly 3 hours on social media every day, and teenagers spend about 8 hours of phone screen time (Georgiev, 2023). By studying the correlation between excessive exposure to social media on brain plasticity we can possibly discern the real negative effects of mindlessly scrolling on attention and memory deficits.

Most high school students hone their ability to memorize facts quickly and efficiently in an effort to retain the most important information from a lesson. However, when social media excessively consumes a person's thoughts, they try using their multitasking skills to accomplish all the requirements social media demands. Studies have shown that multitasking leads to a decrease in concentration and reduction of absorption in experiences, causing memories to fade (Tamir et al, 2018). Similarly, social media has introduced the use of shorthand typing, where statements like "LOL" take place of "laughing out loud." These quick mnemonics are labeled "crutch" and are harmful in offloading relevant information and then forgetting the important information (Tamir et al, 2018). Memory has shown to have a negative relationship with social media, as it hinders people's abilities to remember information.

However, memory is not the sole victim of social media, as attention decreases just as easily from social media influence. A study was performed to determine the correlation between social media and psychological distress of attention control, where it was concluded that social media has a positive relationship with lower levels of

attention control (Mahalingham et al., 2021). Using social media provides people access to control how long they want to pay attention to a certain video, picture, or text message. The brain then translates this control and applies it to other aspects of life, like being in a class where the information could be presented in a boring way. The brain can stop paying attention and focus on other things because the brain is already conditioned to be in control of how little time a person must spend on something. The figure below shows a decrease in memory consistent through the study, as well as an increase in mind wandering. As social media allows people control to swipe as fast away from a certain screen image, the brain shortens its attention span for all life events.

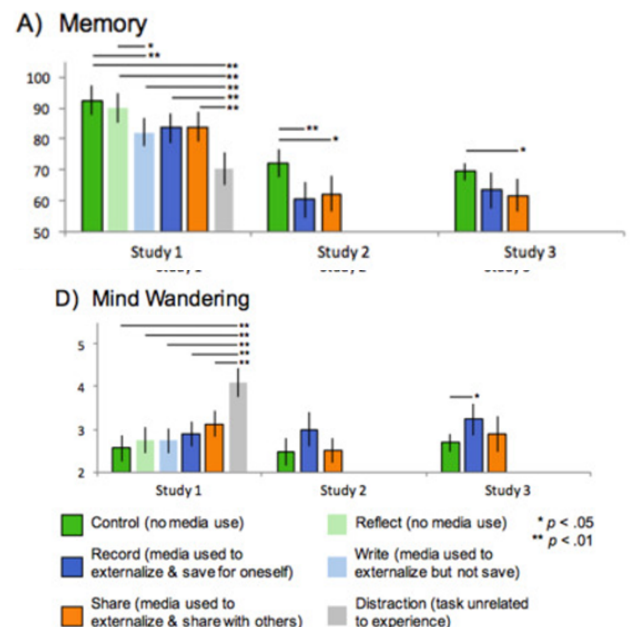


Figure 1. The figure above shows the correlation between social media use and Memory and mind wandering. Given three studies, a positive control of no media use, and two experimental of recording and sharing, it can be noted that there is a discrepancy between the three groups in memory and mind wandering. There is a decrease in memory for both experimental groups and an increase in mind wandering in recording group generally and in one case for sharing as well.

Social media platforms continue to enthrall millions of people, but it is important to note the detrimental effects it could have on brain plasticity. Social media has proven to be a useful tool to remain connected, however excessive screen time has detrimental effects on the brain, but consider just the mechanisms behind social medias affect on memory and how to mitigate the outcome.



References

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