Effects of Social Media on Reaction Times

Katherine H. Pavelka
College of Saint Benedict and Saint John’s University

Abstract

Social media is distracting more people than ever before. As a result, this study will look to confirm that the use of Instagram will significantly decrease reaction times while performing other tasks. Using an independent groups design, with posttest only experiment, participants were assigned to conditions through block randomization. The control group was only tested on their reaction time using their dominant hand to catch a meter stick. The experimental group was tested the same as the control group on their reaction time, but they were asked to scroll through Instagram with their nondominant hand at the same time. There were 20 participants, 16 were female, and 4 were male, each condition had 10 participants. Participants were a convenience sample from a small midwestern liberal arts college. The mean reaction time for the control group is 23.15 seconds (SD=4.55), while the mean reaction time for the experimental group is 29.4 seconds (SD=2.50). There was statistical significance between the two groups (t(18)=3.80, p=0.001, d=1.70). The 95% confidence interval ranged from -9.70 (LL) to -2.80 (UL). My hypothesis is supported by the results of my study. When using Instagram people had slower reaction times than those not on social media.

Method

Participants

• There were 20 participants in total
• 16 were female and 4 were male
• Each condition had 10 participants
• Participants were a convenience sample from a small midwestern liberal arts college.

Materials

• Meter Stick
• Cell phone with Instagram

Procedure

I conducted an independent groups design, with posttest only experiment. Participants were assigned to conditions through block randomization. The control group was only tested on their reaction time using their dominant hand to catch a meter stick. The experimental group was tested the same as the control group on their reaction time, but they were asked to scroll through Instagram with their nondominant hand at the same time.

I recorded the length it took people to grab the meter stick after I dropped it. I then calculated the reaction time in seconds with \( t = \sqrt{\frac{2s}{a}} \), where \( t \) = time in secs, \( s \) = distance in m, and \( a \) = acceleration due to gravity.

Results

• The mean reaction time for the control group is 0.216 seconds (SD=0.022)
• The mean reaction time for the experimental group is 0.244 seconds (SD=0.010)
• There was statistical significance between the two groups (t(18)=3.68, p=0.002, d=1.64).
• The 95% confidence interval ranged from -0.044 (LL) to -0.012 (UL).

Discussion

On average the experimental group had slower reaction times than the control group with a large effect size. This suggests that when using social media like Instagram, a person’s reaction time will significantly decrease. Due to the not having a lot of the results from my study could be due to a random result. My study has good statistical validity because there were no outliers that needed to be trimmed and no obvious restriction of range. There is no external validity because random sampling was not used. The construct validity is good because my study was reasonably designed, and my variables were accurately measured. I used the same measuring techniques between both groups and ensured consistency for all participants. I have good internal validity because there were two separate groups for the control and experimental group. This ensures that the control group was not affected by anything in the experimental condition.

My hypothesis is supported by the results of my study. When using Instagram people had slower reaction times than those not on social media. Like in previous research when using social media decreases peoples’ reaction times and focus on other tasks such as driving and academic performance. In the future if I would like to repeat this study with a larger sample to improve the power of my results. Likewise, I would like to specifically focus on reaction times differences between college age students and high school age students to see if age effects reaction times when distracted.

References