

# Relationship between Social Media and Middle Schoolers Cognitive Development

Our study seeks to investigate the relationship between social media use in seventh-graders and their cognitive ability, specifically visual attention span and retention.



28% of Middle School Students preferred Snapchat



27% of Middle School Students preferred YouTube



22% of Middle School Students preferred Instagram

(Márton, Want, Petty, and Wilkins, 2018)

During the COVID-19 pandemic, classrooms across the world changed as teachers use online methods to guide students through the learning process. Younger and younger ages are using social media which has already shown negative impacts academically and mentally on teenagers. As educators, we are worried about the impact of social media on middle schoolers ability to learn through technological means.

Kaitlin Anderson

Larisa Gray

Katie Magera

Ben Rathke

Karina Robinson

## Social Media

At least 62% of 11 year olds post pictures, read posts and comment on Snapchat, YouTube, and Instagram using hand-held devices. But these apps are constructed to create an online environment just for the user, changing how the user interacts with the world, including how these young people learn.

## Attention Span

Children continue key stages of their social and cognitive development through middle school. With more social media access on hand-held devices, switching between unrelated tasks while engaging in school related activities has been shown to lead to lower academic performance, higher perceived mental stress/fatigue, and lower cognitive abilities.

Media use for learning was becoming commonplace in both formal and informal (self-directed) learning before COVID-19 because of accessible devices, like mobile phones, that are so popular among younger age groups.

The psychological allure of technology has been shown to change the learning approach, allowing the learner to change the task. Users can change the task to a more personalized and less challenging one given the flexibility of the mobile device.

## Retention

The retention of cognitive information is based upon initial acquisition and long term retention of the information. Students will not retain information unless they are able to listen, speak, read, write and process the information presented to them in a classroom setting.

Information extracted from linguistic material is retained at about 50% with less information retained from only visual materials. But a video provides visual and linguistic information therefore the information is likely to be retained as the information is being processed.

## Instructional Videos

Distance Learning is a planned teaching/learning experience that uses a wide spectrum of technologies to reach learners at a distance including compressed videos. But as social media usage has grown and is designed to draw people in, this technology has created separation anxiety, generational trauma issues as well as mood swings in young children

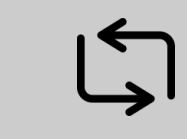
The current pandemic has led children and families to maneuver instructional videos, competing with Tik-Tok and Instagram for their children's attention, and encouraging them to stay motivated with their studies. Students learn best through visuals and interactive learning.

It is important to find engaging, encouraging, informative educational videos that will have a lasting impact on students no matter their age.



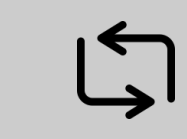
### Research Question

How does average time spent on social media per day relate to the visual attention span and retention of middle schoolers in Weld County watching an instructional video?



### Hypothesis

We hypothesize that retention and visual attention span will decrease in relation to average time spent on social media.



Weld County Middle School Students

## Participants

Participants in this study will be Colorado seventh grade students with and without cell phones. A random sample will be collected from science classrooms in five different Weld County middle schools. All seventh graders will be given a permission slip for parents to consent to the study, students will be randomly selected from the returned permission slips.

With 20-25 participants from each middle school, our sample size will be 100-125 students.



### Instrumentation

Visual attention span collected with eye-tracking software:

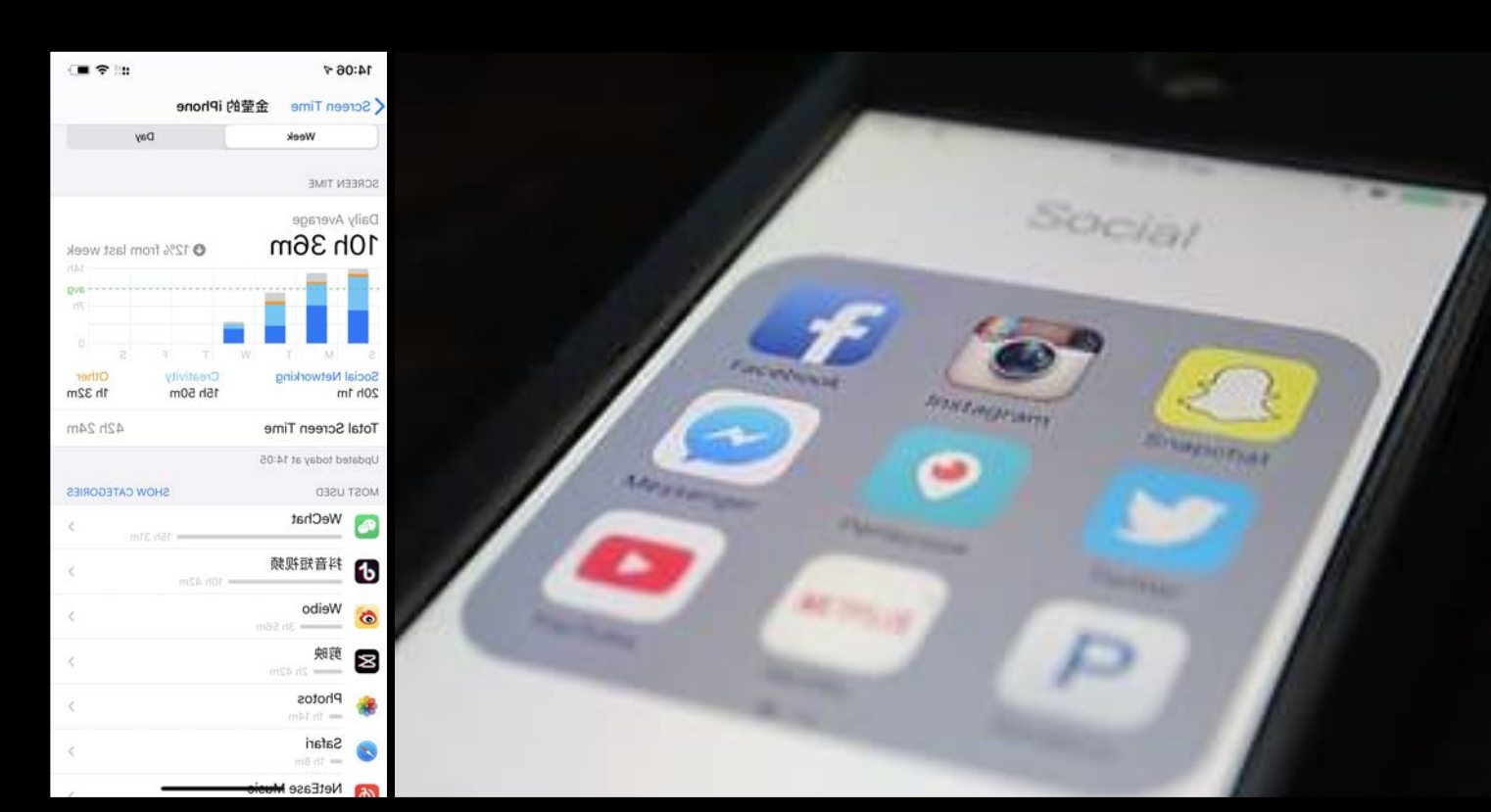
- Looks away from the video
- Looks at their phone
- Picks up their phone

Retention collected with pretest & post-test design



### Setting & Controls

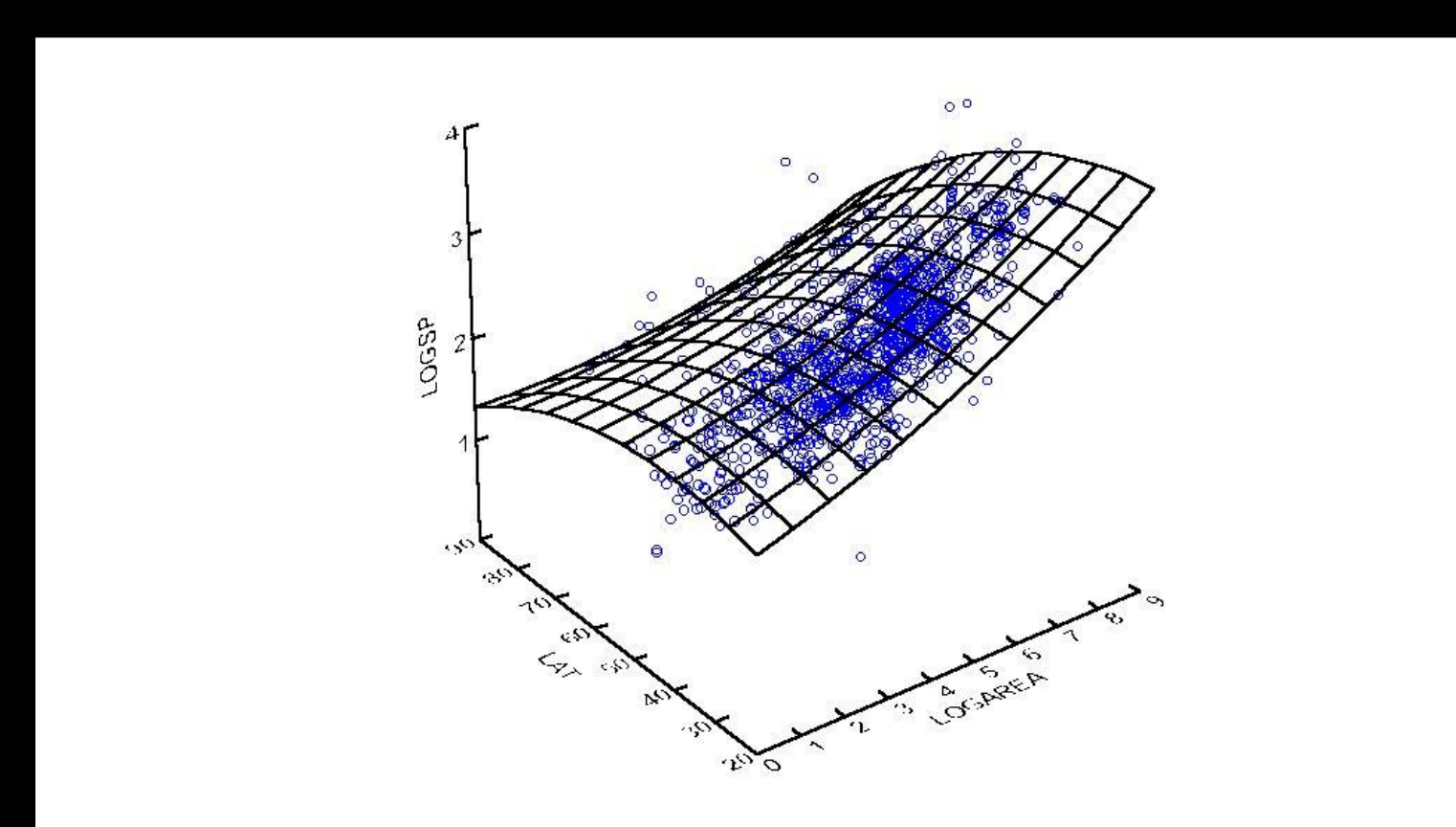
Data collected in a school computer lab with a recorded script guiding students through the entire process. Students will be asked to set their phones on the table with the screen up.



### Collecting Data

During the recorded script students will be instructed to:

- Enter personal information
- Take pre-test
- Watch astronomy video
- Take post-test
- Record phones 'screen time' report



### Data Analysis

Correlation analysis will be conducted to determine any relationships, while a multivariate regression will determine the strength and direction of the identified relationships.

Due to the alarming increase in daily time spent on social media for seventh graders around the country, it is vital that we understand the potential negative effects it has on their ability to retain information.

This case study will hopefully prove how social media is negatively affecting seventh graders in regards to learning with technology that dominates the current classroom.



Scan Me to see the proposal in its entirety!

Scan Me to see the references!

