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4-12-2024

The Effect of Different Timing Schedules on Learning in Individuals With and Without ADHD

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Recommended Citation

Repository citation: Casper, Carmen; Swanson, Chloe; De Koker, Ethan; Tocco, Lauren; McCloskey, Emily; and VanAntwerpen, Isabelle, "The Effect of Different Timing Schedules on Learning in Individuals With and Without ADHD" (2024). *23rd Annual A. Paul and Carol C. Schaap Celebration of Undergraduate Research and Creative Activity (2024)*. Paper 14.

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The Effects of Different Learning Schedules

Carmen Casper, Chloe Swanson, Ethan De Koker, Lauren Tocco, Emily McCloskey,
Isabelle VanAntwerpen
Faculty Mentor: Dr. Lauren Slone



Introduction

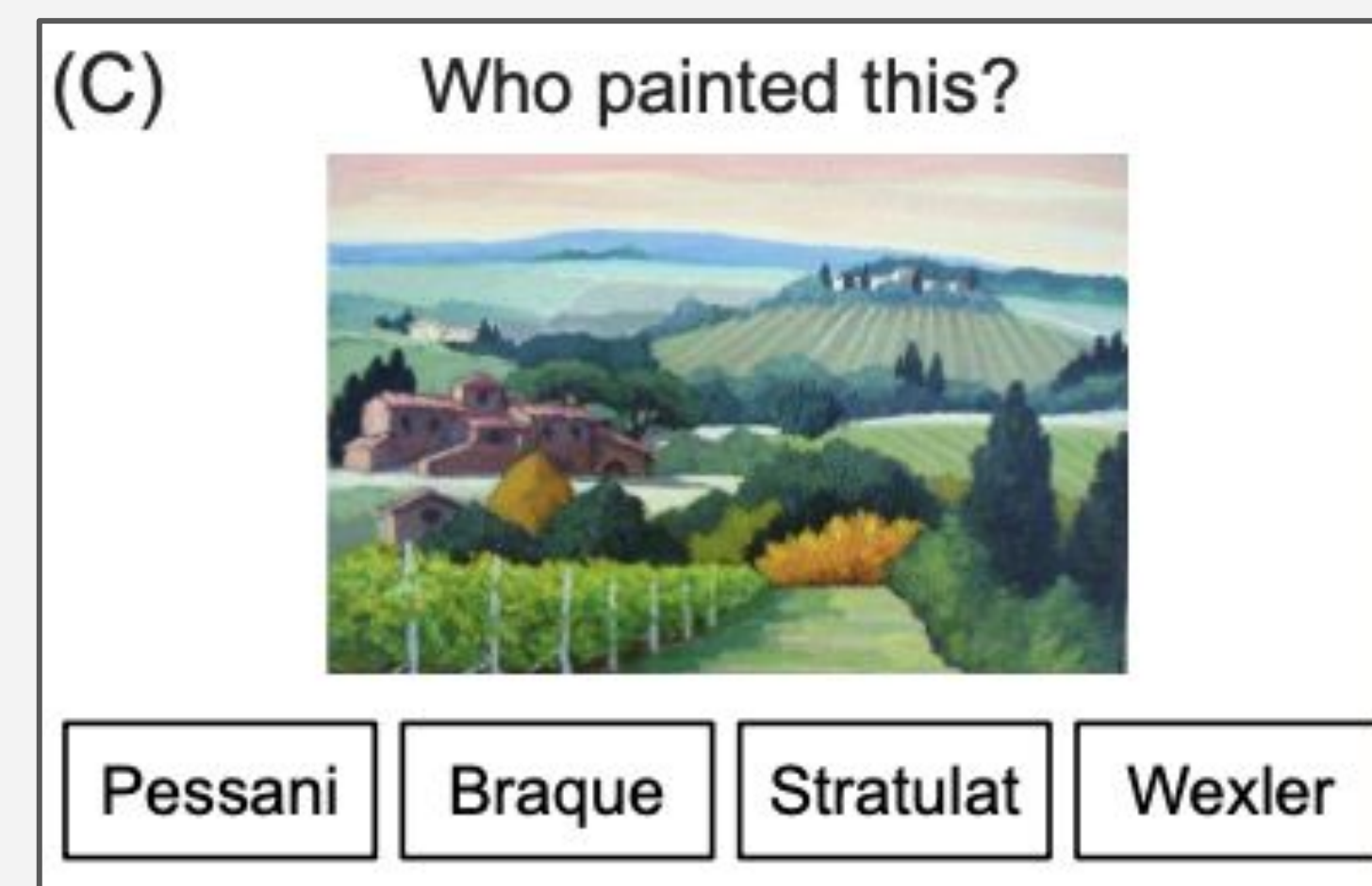
- Encoding and retrieval are two key parts of learning, typically accomplished with massing or spacing.
- Massing and spacing can both benefit learning in the short/long-term.¹
 - These benefits have not been widely researched in individuals with ADHD
- Important to understand because individuals with ADHD can have difficulties with encoding/retrieval.²

Research Question:

How do people with symptoms of ADHD learn best?

Methods

- 84 participants with 2 sessions
- 4 different artists and 12 paintings from each artist
- Eye-tracking software



Three Conditions:
Massed, Clustered, Interleaved

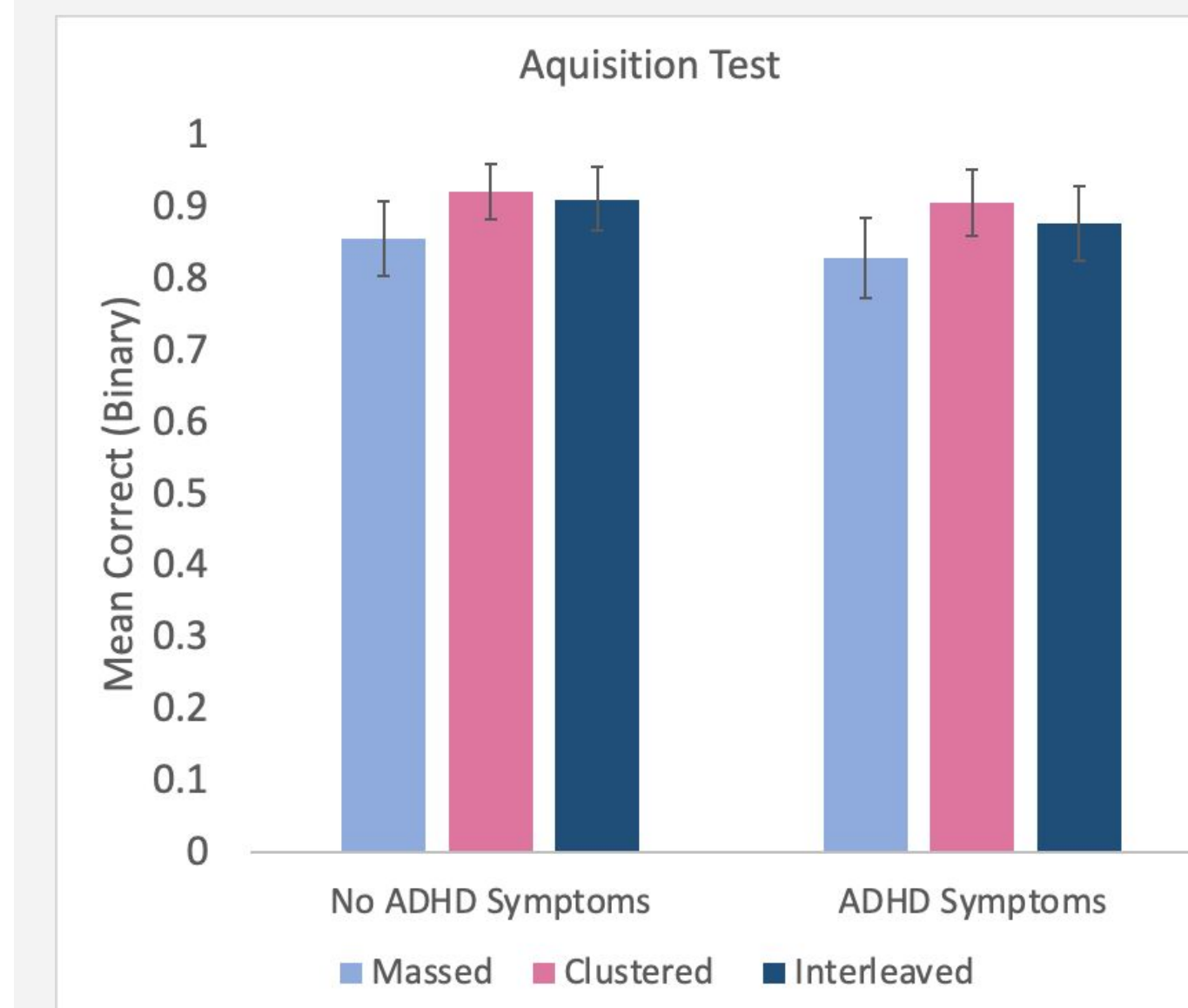
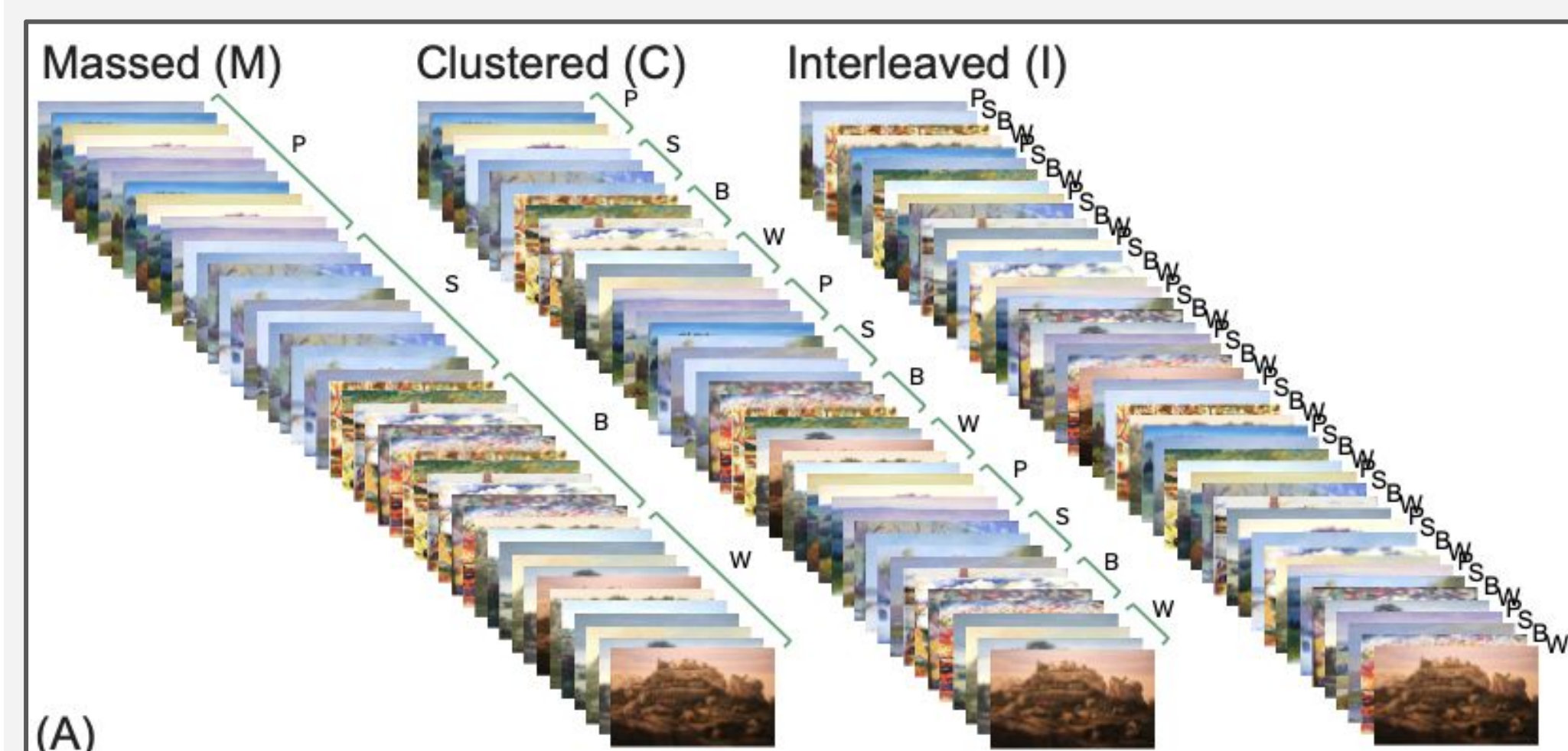


Figure 1. Performance immediately after the viewed condition; C = I > M

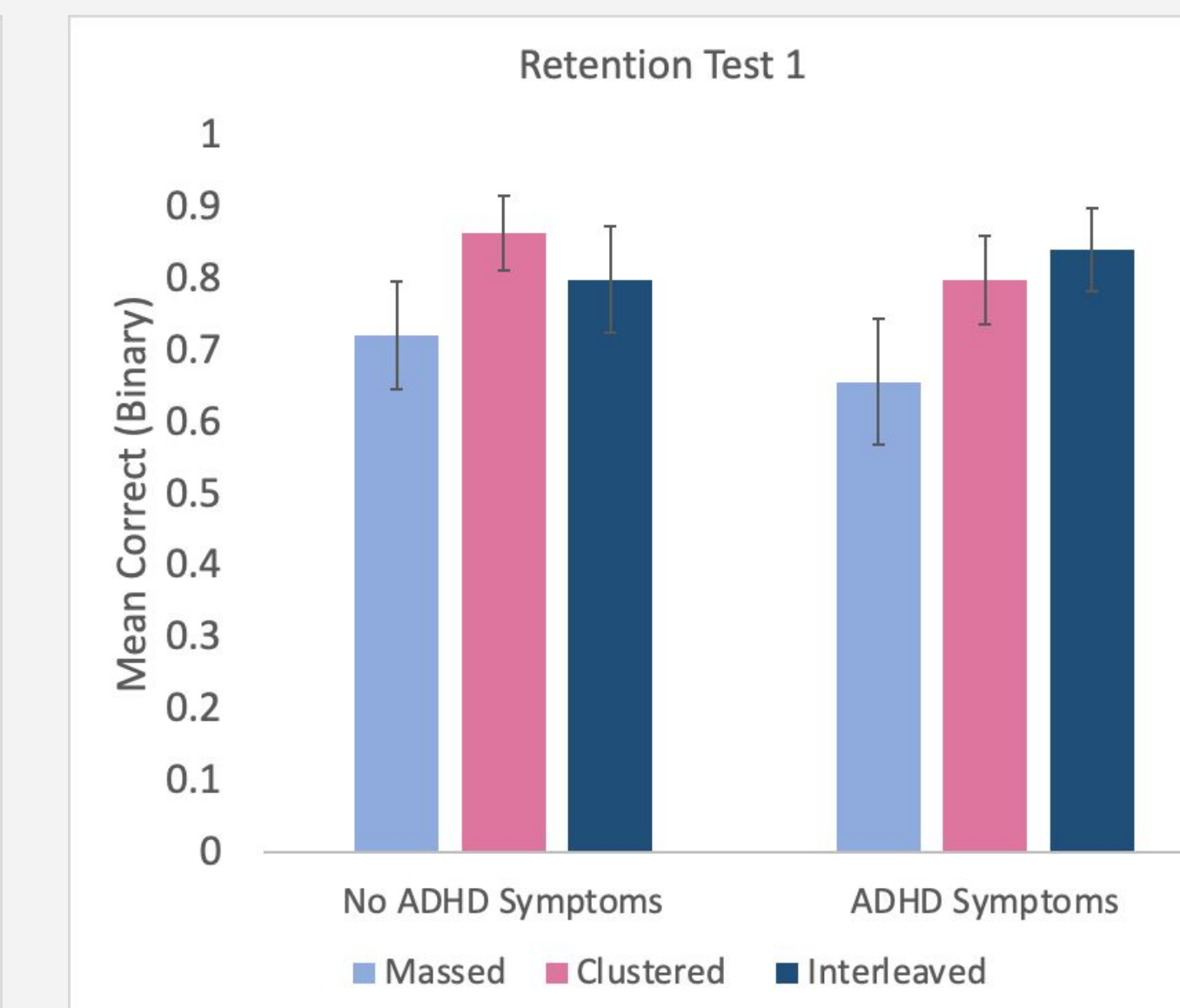


Figure 2. Performance immediately after all three conditions; C = I > M

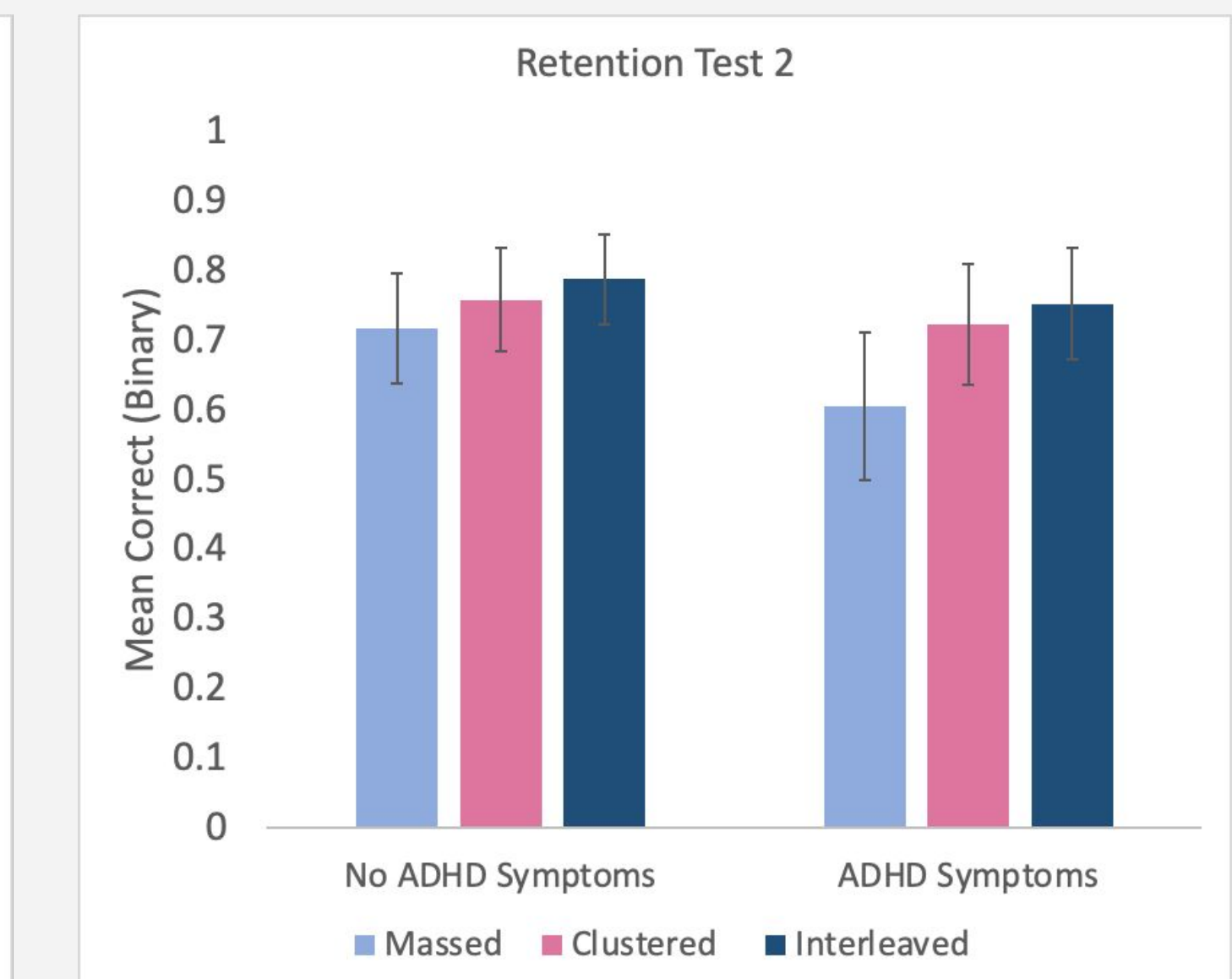


Figure 3. Performance immediately after all three conditions; C = I > M

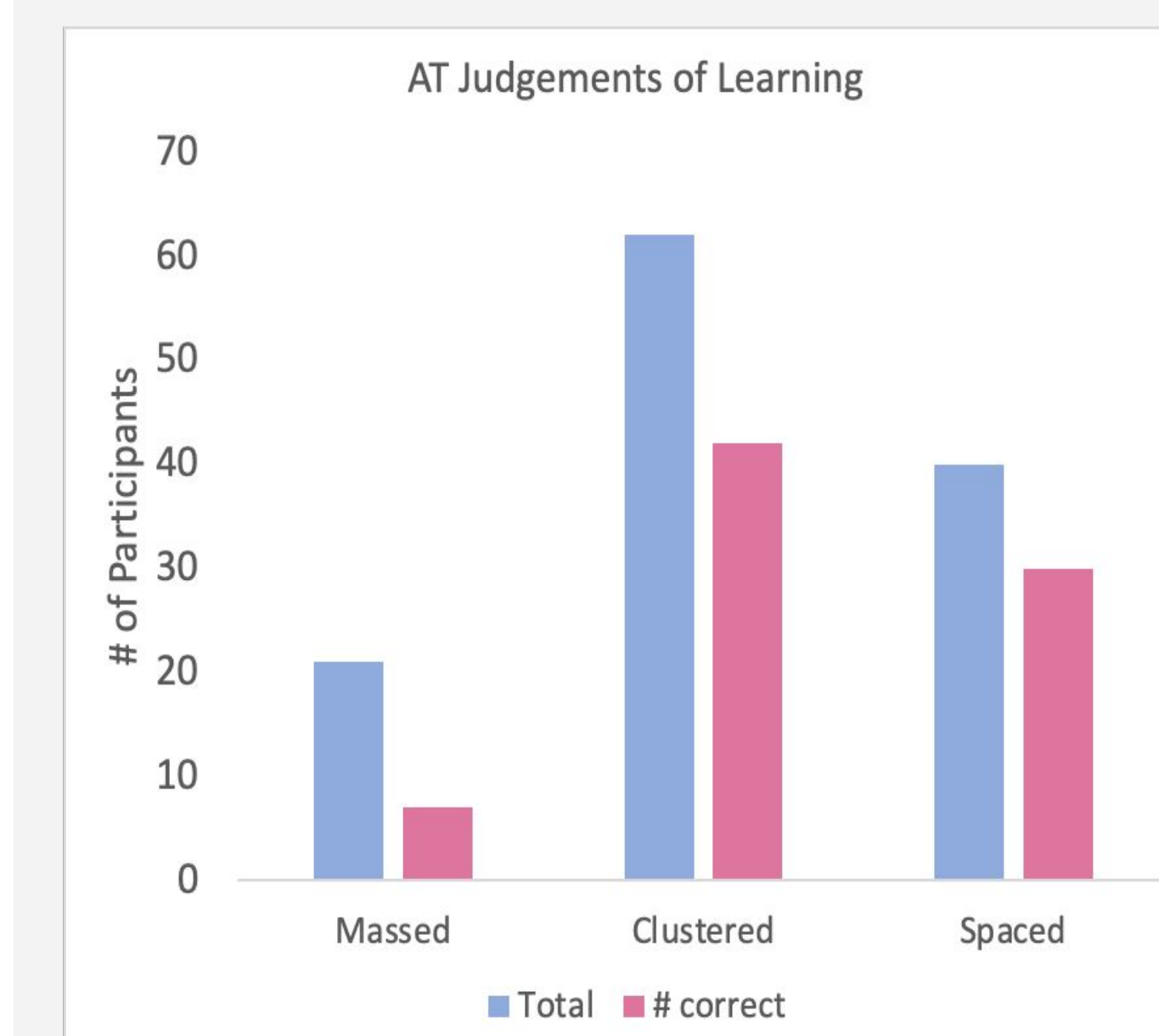


Figure 4. Percent difference of looking time between conditions. Error bars represent the 95% CIs.

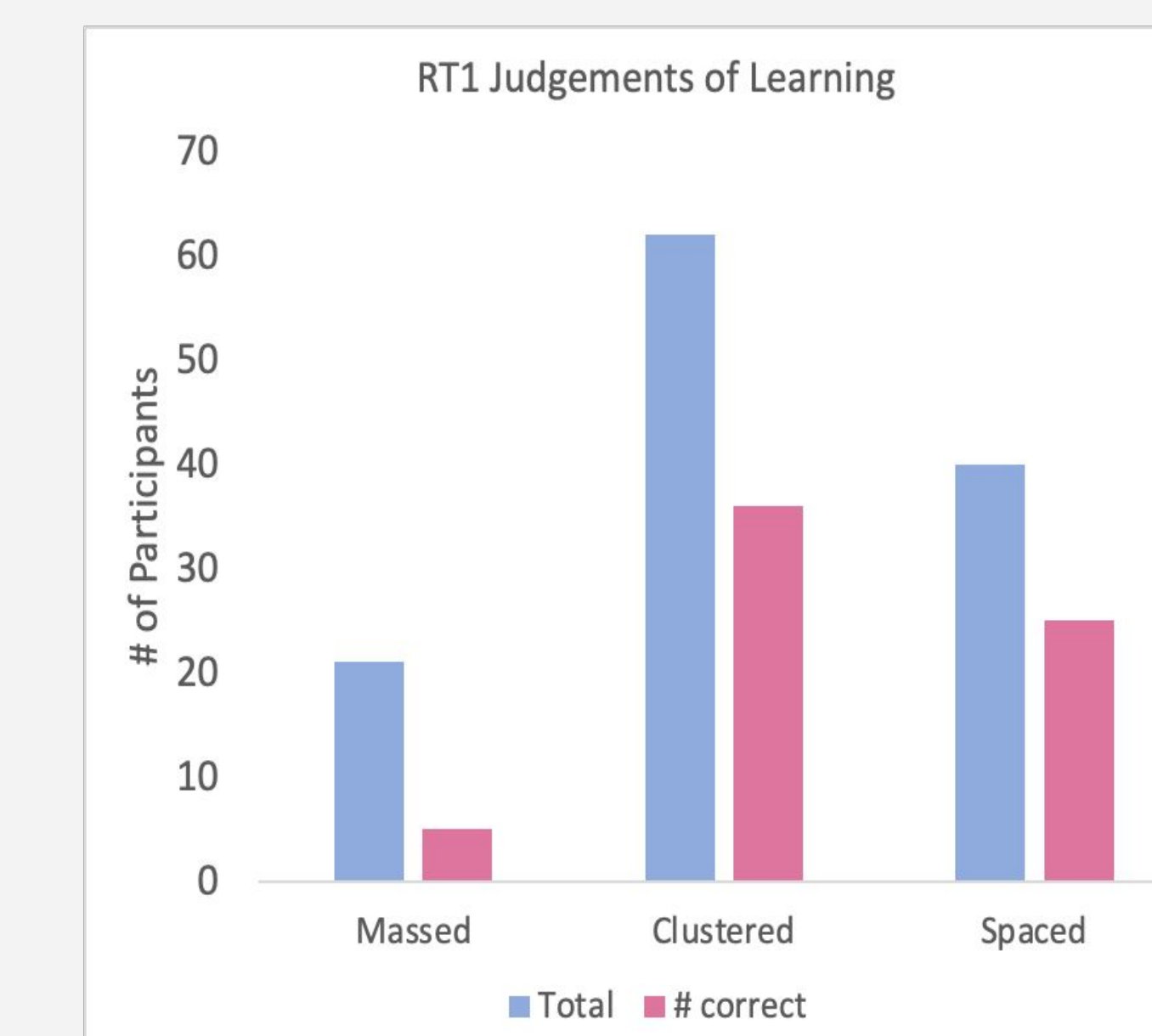
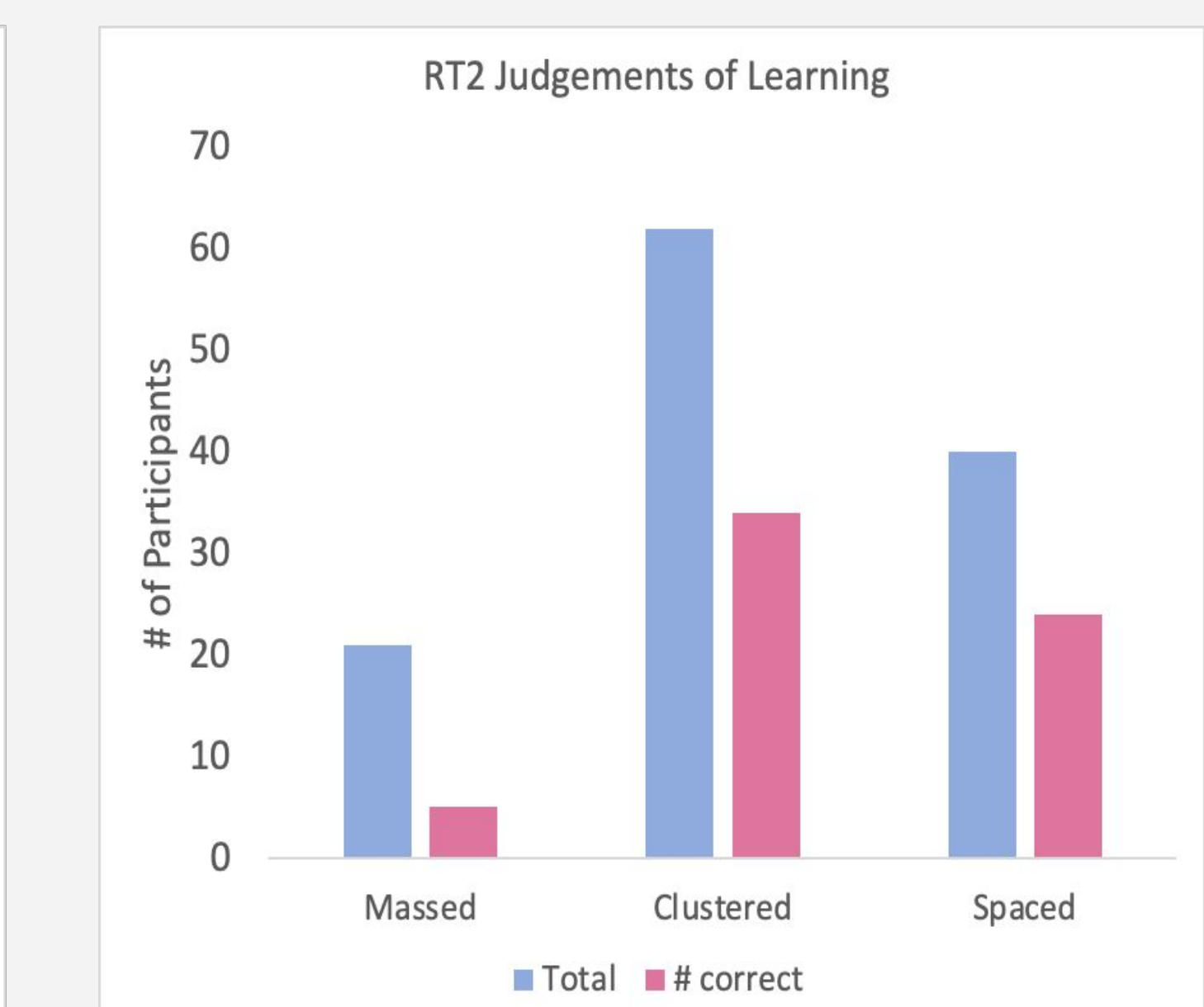


Figure 5. Percent looking time to targets vs. to distractors in both conditions. Error bars represent the 95% CIs.



Hypothesis #1:

Clustering will be more beneficial with learning than spaced/massing

1a) Performance of participants without ADHD may be better than those with ADHD

1b) Timing Condition * ADHD-symptom group

Hypothesis #2:

Participants will judge clustering to be the most effective method of learning compared to spaced and massing.

Discussion

- Clustered and Spaced performed equally well, both better than Massed learning.
- Participants who thought that their performance in the clustered condition would be better overall, performed the best in clustered.
- **Limitations:** no official diagnosis in the ADHD-symptom group
- **Future research:** Utilizing more complex stimuli (high vs. low similarity) to avoid ceiling effect → more conclusively determine if one condition supports more effective learning.

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