

Does retrieval practice protect memory against test anxiety?

Background

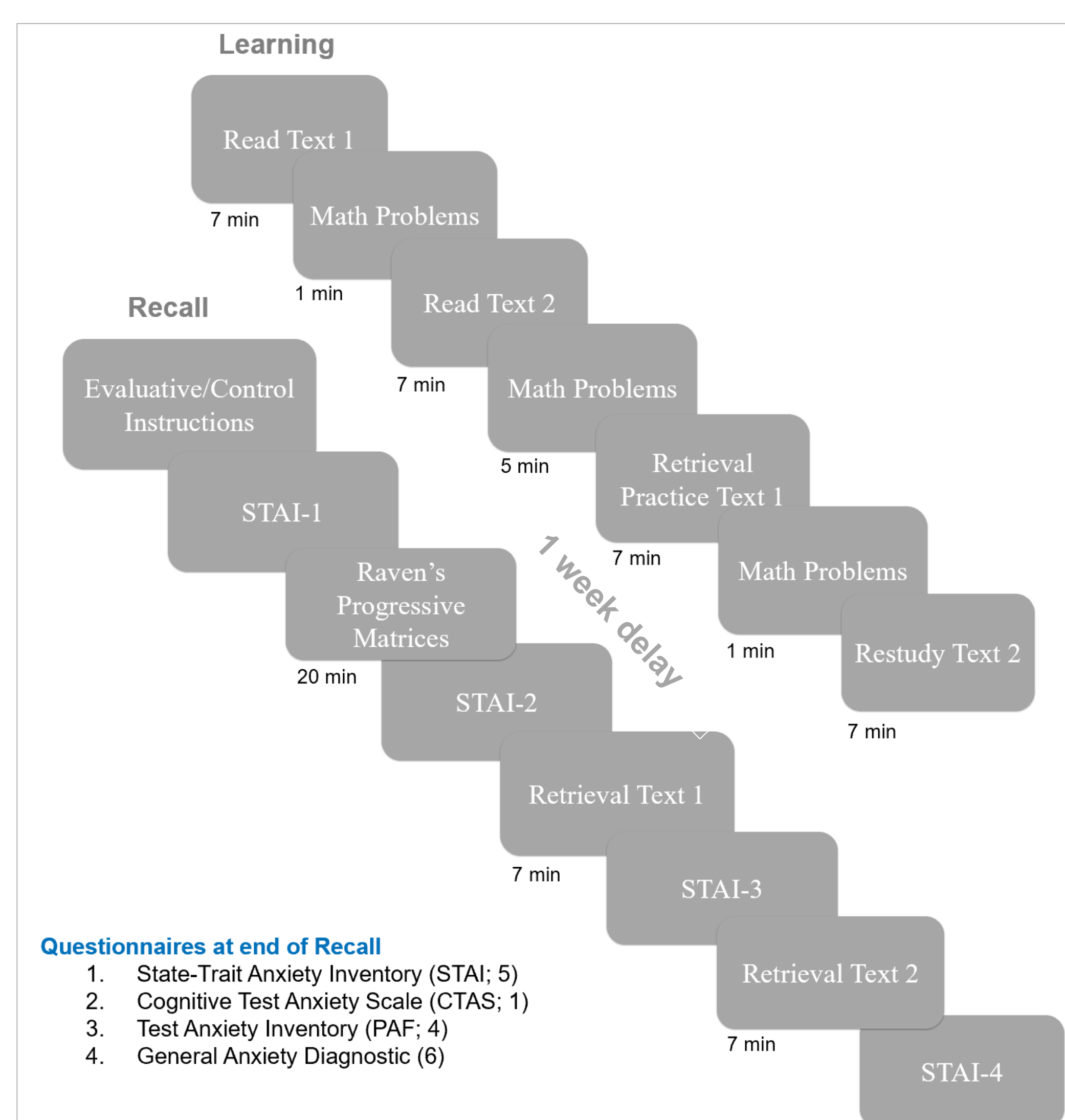
- Test anxiety, the stress felt during evaluative or testing situations, **decreases** memory **retrieval** (1,3).
- **Retrieval practice** enhances retrieval, also known as the testing effect. (2)
- Retrieval practice might **protect** memory against acute stress (7).
- Currently, it is unknown whether retrieval practice protects memory during **evaluative situations**.
- This study examines whether learning with retrieval practice versus restudy is helpful in an evaluative vs. non-evaluative setting at recall.

Hypotheses

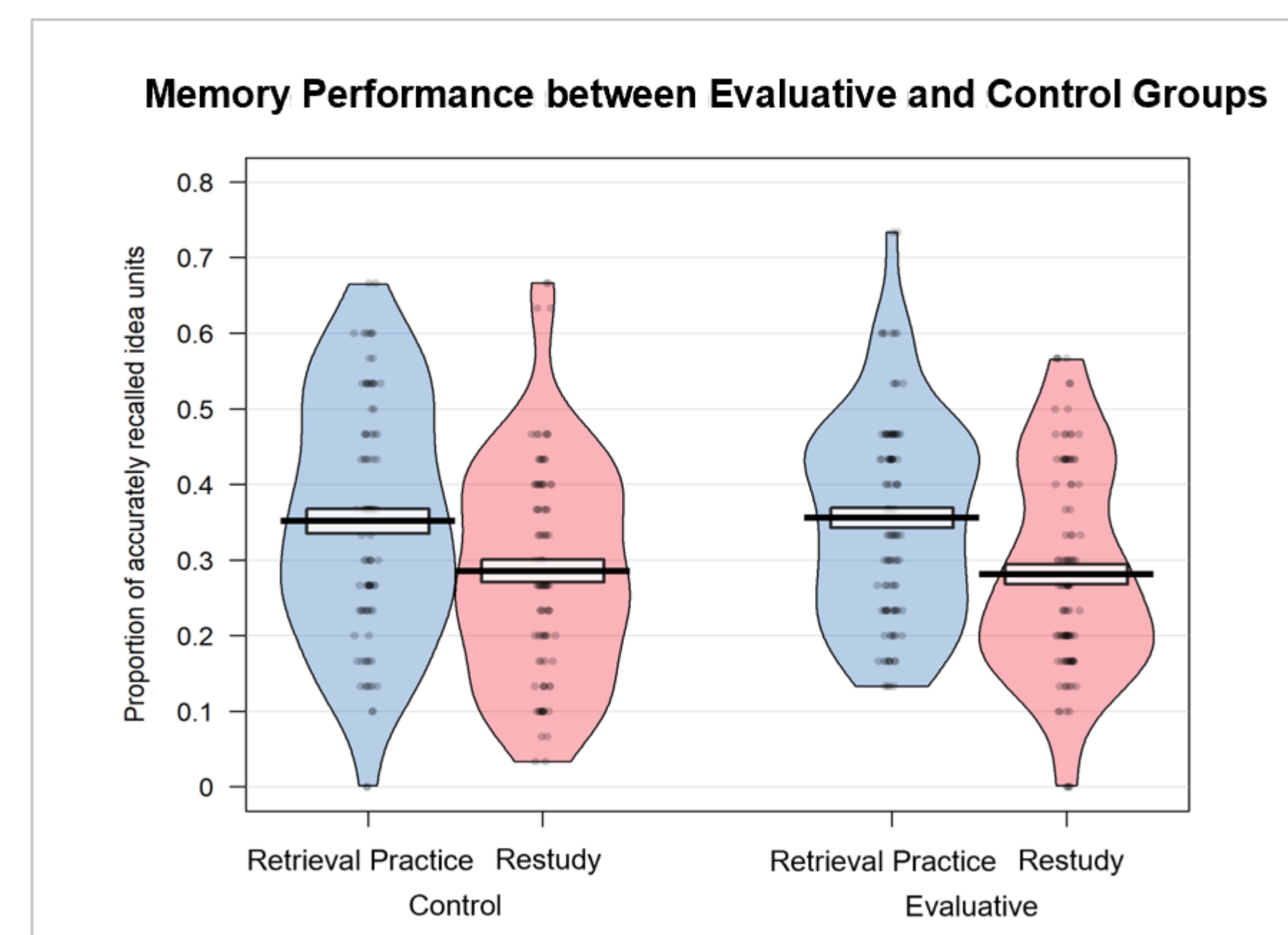
1. We expect to replicate the testing effect (2).
2. Participants in the evaluative group would self report higher state anxiety after instruction reading.
3. Memory should be better for the text learned with retrieval practice versus restudy in the evaluative group compared to the control (7).

Methods

- Online study
- 2x2 mixed design
 - Independent variables
 - Between-subjects variable = **Instruction** (evaluative vs. control)
 - In the **evaluative** group, the Raven Progressive Matrices were instructed as IQ Test, and the memory task as a test.
 - In the **control** group, the Raven Progressive Matrices were instructed as a Puzzle Task, and the memory task as a task.
 - Within-subject variable = **Strategy** (retrieval practice vs. restudy)
 - Co-variables = Test anxiety, trait anxiety, and anxiety disorder
 - Dependent variable = Memory performance (i.e., proportion of accurately recalled idea units)
- $N = 89$ (evaluative group = 43, control group = 46)

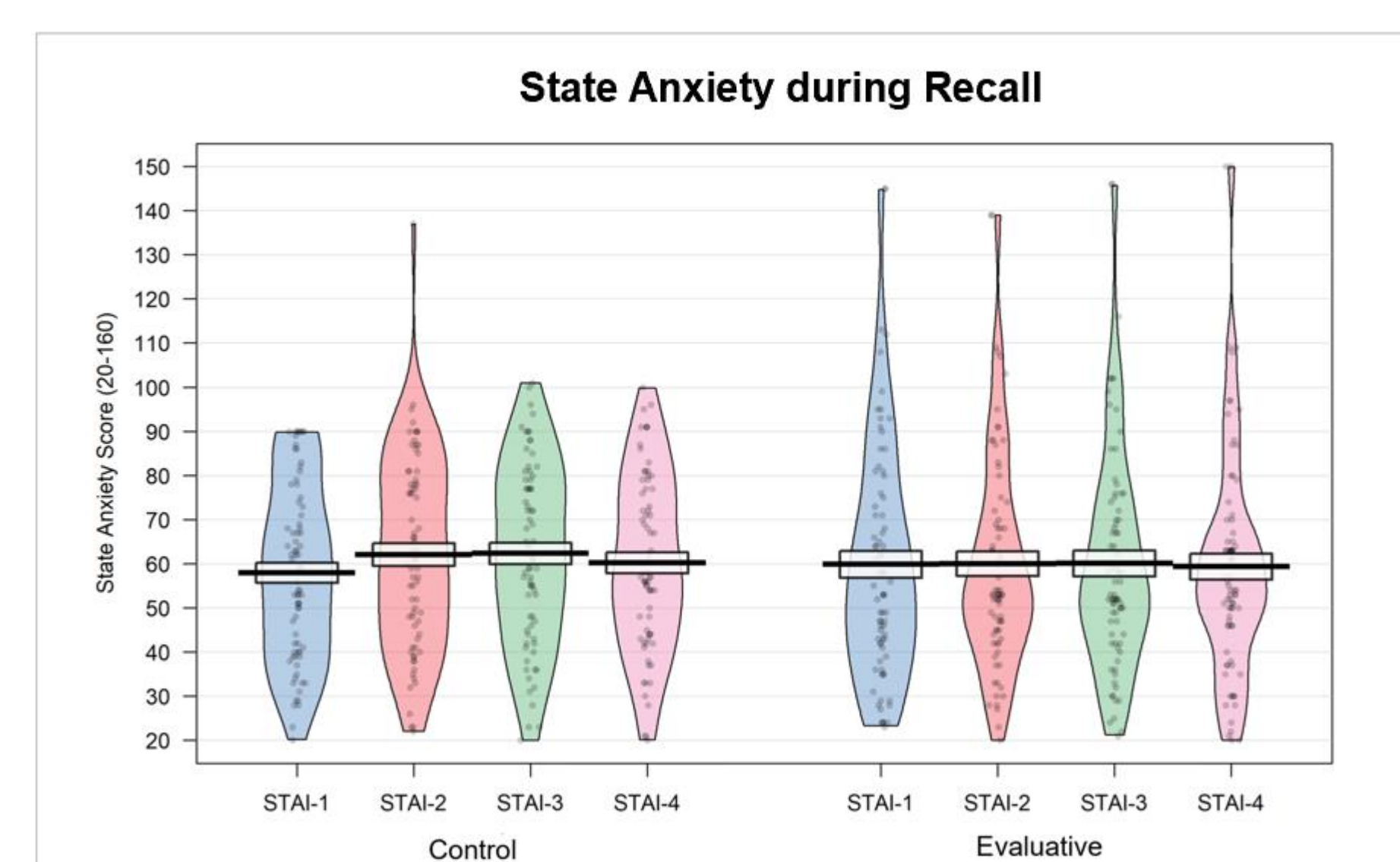


Results



Main effect of strategy. Participants had better memory for the text learned with retrieval practice than the text learned with restudy.

The pattern of results is the same in extreme groups (i.e. those in the evaluative group who scored high on state anxiety and those in the control group who scored low).



Main effect of task. Participants in the control group had higher state anxiety scores after completing the Raven task (STAI-2) compared to the evaluative group.

All scores are on average in the low range.

Effects of Test Anxiety, Trait anxiety, and Anxiety Disorder

- When test anxiety was measured with CTAS, the covariate of test anxiety was not significantly related to memory performance.
- When test anxiety was measured with PAF, the covariate of test anxiety was significantly related to memory performance.
- The covariates of trait anxiety and anxiety disorder were not significantly related to memory performance.

Conclusion

- The **testing effect** is replicated in an online setting.
- The **instruction manipulation** did not induce state anxiety in the **evaluative** group.
- When controlling for test anxiety, trait anxiety, and anxiety disorder, the same pattern of results was observed.

References

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