Does a Computer-paced task adjusted to participants capacities reduce strategies and increase prediction of cognitive abilities?

**Working Memory span task = memorising items + processing stimuli**

Lepine, Barrouillet, & Camos (2005):
WM span is much more predictive of cognitive abilities with Computer-paced than with Participant-paced processing.

(Stimuli presented at predetermined rate) (Participant control the presentation rate of stimuli)

St Clair-Thompson (2007):
WM span is much more predictive of cognitive abilities with Experimenter-paced than with Participant-paced processing.

(experimenter launch stimuli when participant ended processing)

**Conclusion:** As Participant-paced leaves additional time to implement strategies, strategies do not contribute to relation between WM and cognitive abilities.

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**Material & procedure**

**Counting span Task:**
- Remember consonants (increasing length from 2 to 9 letters)
- Count red dots on each slide. 2 conditions (within subject)

**Counting Task:**
- Report the number of red dots using keyboard.

Sample of the 60 slides:
- 5 red, 10 green
- 6 red, 12 green
- 7 red, 14 green
- 8 red, 16 green
- 9 red, 18 green

For each participant, the average time to count red dots on slides of a kind were calculated.

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**Results**

Participants: 38 undergraduate students

<table>
<thead>
<tr>
<th>Cognitive abilities</th>
<th>Participant-paced</th>
<th>Adjusted Computer-paced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verbal</td>
<td>14.39 ± 4.92</td>
<td>13.96 ± 4.92</td>
</tr>
<tr>
<td>(.43*)</td>
<td>(.24)</td>
<td></td>
</tr>
<tr>
<td>Numerical</td>
<td>8.95 ± 3.69</td>
<td>8.62 ± 3.69</td>
</tr>
<tr>
<td>(.40*)</td>
<td>(.29)</td>
<td></td>
</tr>
<tr>
<td>Abstract</td>
<td>9.58 ± 3.25</td>
<td>9.25 ± 3.25</td>
</tr>
<tr>
<td>(.38*)</td>
<td>(.25)</td>
<td></td>
</tr>
</tbody>
</table>

Memory score:

* p < .05

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**Conclusion**

Participant-paced seems to be a stronger predictor of cognitive abilities …

... inconsistent with data from:
- Lepine et al. (2005)
- St Clair-Thompson (2007)

- Oral processing
- Silent processing

Computer-paced predicted cognitive abilities
Participant-paced predicted cognitive abilities

Are cognitive abilities predicted by Computer-paced WM or by prevention of rehearsal?

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