For the first time, we report two independent, participants corrected their errors (see Fig 1). Improved subsequent cued recall, especially when relative to copying, deliberate errors substantially participants studied biological term-definition concepts, in either an error-correction or copy condition. Participants studied each list for 2 min + 22 min with either learning condition, followed by an immediate cued-recall test and delayed test 2 days later (see Fig 2).

Experiment 1 Method

- Laboratory experiment with a very similar protocol to Wong and Lim (2022a), except with the addition of a delayed test.
- Psychology students (N = 45) studied two 18-item lists of biological term-definition concepts, in either an error-correction or copy condition.
- Participants studied each list for 2 min + 22 min with either learning condition, followed by an immediate cued-recall test and delayed test 2 days later (see Fig 2).

**Fig 2: Experiment 1 Procedure**

<table>
<thead>
<tr>
<th>Error-correction + ratings (inc. JOL)</th>
<th>JOL + Judgement of Learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copy + ratings (inc. JOL)</td>
<td>Immediate test + effectiveness ratings</td>
</tr>
<tr>
<td>Delayed test + effectiveness ratings</td>
<td></td>
</tr>
</tbody>
</table>

**Fig 3: Experiment 1 Test Performance**

- JOLs: error-correction: copy (M = 42.22 vs. 45.56), (644) = 1.28, p = .21, d = 0.17, BF10 = 0.35.
- Effectiveness ratings: copy > error-correction (M = 0.01 vs. 3.43, F11, 644) = 6.62, p = .04, n2 = .04, BF10 = 10.02.

**Test performance (see Fig 3)**

- Delayed > immediate test, F11, 644 = 28.18, p < .001, n2 = .06, BF10 > 100.
- No significant effect of learning condition, F11, 644 = 0.1, p = .93, n2 < .01, BF10 = 0.16.
- No significant interaction, F11, 44 = 0.08, p = .78, n2 < .01, BF10 = 0.24.

Experiment 2 Method

- Online experiment with a modified procedure from Experiment 1.
- Prolific participants (N = 46) studied 45 trivia facts each in an error-correction or copy condition.
- A trial-by-trial procedure was used for the learning conditions (see Fig 4).

**Fig 4: Experiment 2 Learning Conditions**

- "Generate an error" or "Copy the answer"
- "The sunfish can produce more eggs than any other known vertebrate."
- The ___ can produce more eggs than any other known vertebrate.

**Table 1: Experiment 2 Key Results**

<table>
<thead>
<tr>
<th>Error-correction</th>
<th>Copy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test performance (%)</td>
<td>76.99 vs. 73.62, p = .01, BF10 = 4.42</td>
</tr>
<tr>
<td>JOLs (t)</td>
<td>50.67 vs. 47.80, p = .01, BF10 = 2.86</td>
</tr>
<tr>
<td>Perceived effectiveness</td>
<td>3.96 vs. 4.06, p = .81, BF10 = 0.01</td>
</tr>
</tbody>
</table>

- Table 1 shows the key descriptive statistics for Experiment 2.
- Test performance: error-correction > copy (644) = 5.03, p < .05, d = 0.06, BF10 = 0.19.
- JOLs: copy > error-correction (644) = 2.63, p = .17, d = 0.41, BF10 = 3.82.
- Effectiveness ratings: copy > error-correction (644) = 3.53, p < .001, d = .72, BF10 = 30.08.

In conclusion, caution must be taken when implementing deliberate erring in educational studies, and additional work comparing different populations is needed.

**References**


**Acknowledgements**

This work was funded by the Experimental Psychology Society, the Basque Country Government Department of Education, and Economic and Social Research Council South Coast Doctoral Training Partnership.