Andrade (2010): Doodling

Lesson 1.2.1 | Concepts and methods

1. Psychology and background

The cognitive approach assumes people share an input-process-output route, often compared with a computer. Individual differences in attention, language, thinking and memory help explain behaviour and emotion.

Attention: selecting and maintaining processing of relevant information. **Memory:** retaining and retrieving information. A boring task can encourage daydreaming, which may compete with processing the main message. A simple extra activity might regulate arousal or reduce mind-wandering.

2. Aim and participants

Test whether doodling helps or hinders monitoring and later recall of a monotonous message. Forty adults aged 18-55 were recruited opportunistically from an MRC participant panel after completing another experiment. Most were women.

Random allocation produced two groups of 20: doodling (3 men) and control (2 men). Opportunity sampling concerns recruitment; random allocation concerns assignment to conditions. They are not the same procedure.

3. Design and variables

Laboratory experiment with independent groups. **IV:** shade printed squares/circles while listening, or listen without shading. **Monitoring DV:** correct target names minus false alarms. **Recall DV:** correct names and places remembered later, minus false alarms.

4. Procedure and controls

Each person listened in a dull, quiet room to the same 2.5-minute mock telephone message, delivered monotonously at about 227 words per minute. Eight people would attend a party; other names, a cat and eight places were also mentioned.

Participants wrote names of definite/probable attendees. Doodlers shaded printed shapes, with no need for speed or neatness. After a one-minute conversation, a surprise test asked for names and places; recall order was counterbalanced.

Monitoring occurred during the message. Recall occurred afterwards. Shading supplied shapes standardised the extra task, but did not reproduce every type of spontaneous doodling.

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Lesson 1.2.1 | Evidence and interpretation

1. Monitoring performance

Mean monitoring measure	Doodling	Control
Correct names / 8	7.8	7.1
Score adjusted for false alarms	7.7	6.9

A false alarm is an incorrect response treated as a target. Subtracting these responses prevents inaccurate guessing from inflating performance. Consistent rules allowed plausible mishearings to count as correct.

2. Surprise recall

Mean adjusted recall	Doodling	Control
Names	5.1	4.0
Places	2.4	1.8
Combined	7.5	5.8

The reported relative recall advantage was **29%**. Both groups remembered the monitored names better than incidental places. The figures are group means, not the score of every person.

Doodlers shaded a mean of 36.3 shapes (range 3-110). Seven people suspected a memory test: three doodlers and four controls. Excluding them did not change the broad result.

3. What may explain the result?

Reduced daydreaming: a light secondary task might use resources that would otherwise support mind-wandering.
Arousal regulation: shading might maintain alertness during boredom.
Neither mechanism was directly measured, so the experiment does not establish which caused the performance difference.

> Conclusion: simple shape shading improved monitoring and recall in this short, monotonous auditory task. It does not establish that all drawing, or all multitasking, helps learning.

Hint: State which score you mean: correct monitoring, false-alarm-adjusted monitoring, names recall, places recall or combined recall.

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Lesson 1.2.1 | Evaluation and connections

1. Strengths

Random allocation: reduces systematic differences between the two conditions.
Standardisation: one recorded message and consistent scoring improve comparability and replicability.
Counterbalancing: names-first/places-first recall reduces a consistent order effect.
Surprise test: assesses incidental memory rather than only deliberate rehearsal.

2. Limitations

Restricted sample: a mostly female adult panel sample may not represent children, students in a full lesson or people in different settings.
Task validity: shading provided shapes is different from creative drawing; a short audio message differs from complex learning.
Mechanism: attention was inferred from performance, while daydreaming and arousal were not measured directly.

3. Ethics

Participants were told they did not need to remember the material, allowing surprise recall to be tested. This misleading instruction limits fully informed consent. The researcher debriefed participants, explained the deception, apologised and asked about suspicion. The extra task was mild, but withdrawal and confidentiality still matter.

4. Application and debates

Everyday application: a low-demand concurrent activity might help during some dull listening tasks. The study did not test long-term grades, children's outcomes or unrestricted drawing.
Individual/situational: attention can differ between people; message monotony and the shading condition are situational factors.
Nature/nurture: changing the task altered performance, but the origins of individual attention differences were not tested.

> Common mistake: "Doodling prevented daydreaming" states an untested mechanism as a finding. Write "reduced daydreaming was a proposed explanation".

Hint: Evaluate an application by comparing the proposed activity, learners and learning outcome with the task actually tested.