

ANDRADE

PSYCHOLOGY BEING INVESTIGATED

ATTENTION

Attention is the selective focus of mental effort on sensory events, often filtered out or ignored due to limited cognitive capacity, as seen in social interactions.

MEMORY

Memory involves encoding, storing, and retrieving information, potentially leading to long-term retention. Efforts to remember information, such as repetition, can help, while incidental memory refers to unintentional information, which is a common aspect of daily processing.

CONCENTRATION AND DOODLING

Doodling is a creative distraction technique that aids in concentrating on uninteresting tasks by preventing daydreaming and keeping us alert to external stimuli. While it may seem like dividing cognitive capacity between doodling and listening could decrease performance, it can enhance concentration and productivity.

AIM: TO INVESTIGATE WHETHER DOODLING:

1. Improves our ability to pay attention to auditory information.
2. Affects later recall of auditory information.

RESEARCH METHODOLOGY

DESIGN AND VARIABLES

Lab experiment, mock phone message, independent measures design.

Experiment group: 17 females, 3 males

Control group: 18 females. 2 males.

Random allocation to avoid participant variables; order of recall was counterbalanced.

IV: whether people were allowed to doodle. They were asked to shade alternating rows of 10 circles and 10 squares (1 cm in diameter) printed on A4 paper.

DV 1: Accuracy: number of correct names recorded while listening to the tape [wrong answers were discarded].

DV 2: Memory [monitored info]: No. of correct names recalled after wrong answers are removed.

DV 3: Memory [incidental info]: No. of correct places recalled.

SAMPLE

40 participants (35F, 5M) aged 18-55 from MRC's Applied Psychology Unit were recruited. They were asked to stay back for 5 mins by the experimenter when they had just finished participating in another experiment [about giving directions]. Therefore, they're opportunity sampling. The researcher wanted it to be this way as they wanted the participants to be "ready to go home" and very bored during the study. The participants were frequent participants of research projects and were paid a small fee.

PROCEDURE

THE AUDIO RECORDING

2.5mins about a party, read in a flat tone at 227 wpm with a lot of irrelevant info and:

People [who could come]: Jane, William, Claire, Craig, Suzie, Jenny, Phil & Tony.

People [who couldn't come]: Nigel, John, Nicky, Ben the cat.

These names were referred to as "lures".

Places: London, Penzance, Gloucester, Colchester, Harlow, Ely, Peterborough and Edinburgh.

LISTENING TO THE RECORDING

Each participant was by themselves in a quiet, dull room. They had to pretend the speaker was a friend inviting them to a party. The tape is dull which is okay because they don't need to remember it. They had to write the names of people who could come to the party including themselves. They can't write anything else. The experimental group was given pencils & A4 sheets with a 4.5cm margin for the names. They were told not to worry about neatness/speed, as it was "just something to relieve boredom". The control group was given a lined paper & both groups listened to the tape at the same, comfortable volume.

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SURPRISE MEMORY TEST

Next, the researchers collected the response sheets and chatted with the participants for one minute. Here, they were told there would be a surprise memory test. They were tested on places and names and the order was counterbalanced. Finally, participants were asked whether they had guessed that there would be a memory test at the end.

ANALYSING THE RESPONSES

Misheard names like Greg and Craig were included as correct. Incorrect names were coded as false alarms, with extra non-party-goers added as lures. Researchers tested whether people would write down all names mentioned instead of just those going to the party. Words that were neither names nor places were marked incorrectly.

RESULTS

AMOUNT OF DOODLING

The experimental group shaded an average of 36.3 shapes, while the control group did not doodle on lined paper, and one participant did not shade any shapes.

MONITORING ACCURACY

| Group | No. of correct names recorded while listening | | People scoring full (8/8) | People making false alarms |
|------------|---|--------------|---------------------------|----------------------------|
| | Mean | Standard dev | | |
| Experiment | 7.8 | 0.4 | 15/20 | 1 |
| control | 7.1 | 1.1 | 9/10 | 5 |

Researchers calculated monitoring performance score by subtracting false alarms from correct names, as wrong answers cancel out right answers. These are the new results:

| Group | Monitoring performance score (max 8) | |
|------------|--------------------------------------|--------------------|
| | Mean | Standard deviation |
| Experiment | 7.7 | 0.6 |
| Control | 6.9 | 1.3 |

Monitoring performance was significantly higher in the doodling group compared with the control group.

RECALL PERFORMANCE

The doodling group demonstrated a 29% higher recall score compared to the control group, with doodlers remembering both monitored and incidental information better than the control group. The average number of false alarms was low, and the doodling group performed significantly better on the recall task. However, Andrade was concerned about the number of people who thought there might be a surprise memory test, so she ran the analysis again without their data.

| | Recall score excluding false alarms | | |
|------------|-------------------------------------|---------------------------------|-----------------------|
| | Monitored info (people, max 8) | Incidental info (places, max 8) | Total recall (max 16) |
| Experiment | 5.1 (1.7) | 2.4 (1.5) | 7.5 |
| Control | 4.0 (1.5) | 1.8 (1.2) | 5.8 |

CONCLUSION

Andrade concluded that doodling enhances concentration and memory, even during boring tasks, proving its usefulness in various aspects of life.

ETHICAL ISSUES

Participants in Andrade's study were deceived about the study's purpose by being told that the tape was dull, but after listening, they were given a surprise test of recall for both monitored and incidental information. This deception hindered their ability to give their fully informed consent, despite the importance of the study's deception in promoting concentration.

METHODOLOGICAL ISSUES

RELIABILITY

Andrade's highly standardized procedure replicates the effectiveness of doodling on concentration on a boring task. Participants listened to the same audio-recorded message in a quiet, dull room, with a one-minute interval between monitoring and recall tasks, ensuring consistency and ease of replication.

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VALIDITY

EXPERIMENTAL METHOD AND DESIGN

The design minimized order effects by counterbalancing the order of the tasks. This allowed for increased memory for incidental and monitored information to be attributed to doodling, rather than the original order in which they were tested.

OPERATIONAL DEFINITIONS

The study's weakness lies in its operational definition of doodling, which was standardized to shade 1 cm shapes. However, in real life, doodling is a more creative and spontaneous activity, which may impact the conclusion that it aids concentration and recall.

CONFOUNDING VARIABLES

18 guessed there might be a memory test after doodling. Andrade re-analyzed the data without scores, improving the validity of her findings.

THE USE OF LURES

Andrade's telephone message effectively used 'lures', revealing names of non-attending individuals, to prevent participants from 'luring' them into an incorrect answer, thereby improving the validity of the findings by ensuring participants attentively listened to the content.

OBJECTIVITY AND SUBJECTIVITY

Greg and Craig were mistakenly marked as correct in a study, highlighting the subjective nature of coding answers, as the assumption that incorrect names 'mishearing' is not always accurate.

GENERALISATION AND ECOLOGICAL VALIDITY

Generalising beyond the sample

The study, despite its 'gynocentric' nature, has a significant female sample, highlighting the need for caution in generalizing findings to males until a more balanced sample is replicated.

Generalising to everyday life

The laboratory experiment's weakness lies in its controlled setting, which may not reflect real-world challenges of listening to a voicemail. Participants' doodling alone may not be sufficient in real-world settings, suggesting doodling may be more effective in the lab and potentially lacking ecological validity.

LINKS TO DEBATES AND ASSUMPTIONS

INDIVIDUAL VS SITUATIONAL

This study highlights the impact of situational factors on attention and memory, highlighting that cognitive skills are not fixed traits but can be influenced by individual differences and demands, highlighting the importance of making small adjustments to improve performance.

APPLICATION TO EVERYDAY LIFE

The study suggests that teachers should consider incorporating doodling into their teaching methods to improve concentration and memory retention, despite the common punishment for such activities, as it could enhance teacher training.

ASSUMPTIONS

The study reveals that auditory information recall is significantly higher in the doodling group, suggesting that similar information processing pathways may be influenced by situational factors.

| Strengths | Weaknesses |
|---|---|
| Experimental method; causal effect of doodling and memory can be found. | The high number of females; can't be generalised to males |
| Quantitative data can be objectively compared. | Quiet lab setting; lack of ecological validity. |

| Similarities | Differences |
|--|--|
| Andrade and Baron-Cohen collected quantitative data. | Andrade used both children and adults as participants, while Baron-Cohen only used adults. |
| Andrade and Pozzulo investigated memory recall. | Andrade deceived participants about a surprise test, while Pozzulo did not use deception. |