Eye Tracking Analysis – Executive Summary

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- Test name: Visual Search Experiment
- Date: 2026-01-10
- Participants: 24
- Tasks: 12

“Which tasks impose the highest cognitive demand?”

- Task 7 (complex decision + time pressure)

1 Key Findings

1.1 Top 3 hardest tasks

Rank	Task	Reason	Consistency	Outliers
1	Task 7	Longest completion time	high agreement	none
2	Task 3	High variability	mixed	experts differ
3	Task 10	Large pupil dilation	high agreement	none

Table 1: Top 3 hardest tasks

Actionable implication: Tasks 7, 3 and 10 should be simplified or restructured.

1.2 Top 3 easiest tasks

Rank	Task	Reason	Consistency	Outliers
1	Task 1	Short time	high	none
2	Task 4	Low variability	high	none
3	Task 6	Low pupil response	high	none

Table 2: Top 3 easiest tasks

Reasons in plain language. Consistency reflects agreement across participants.

2 Overall Task Ranking

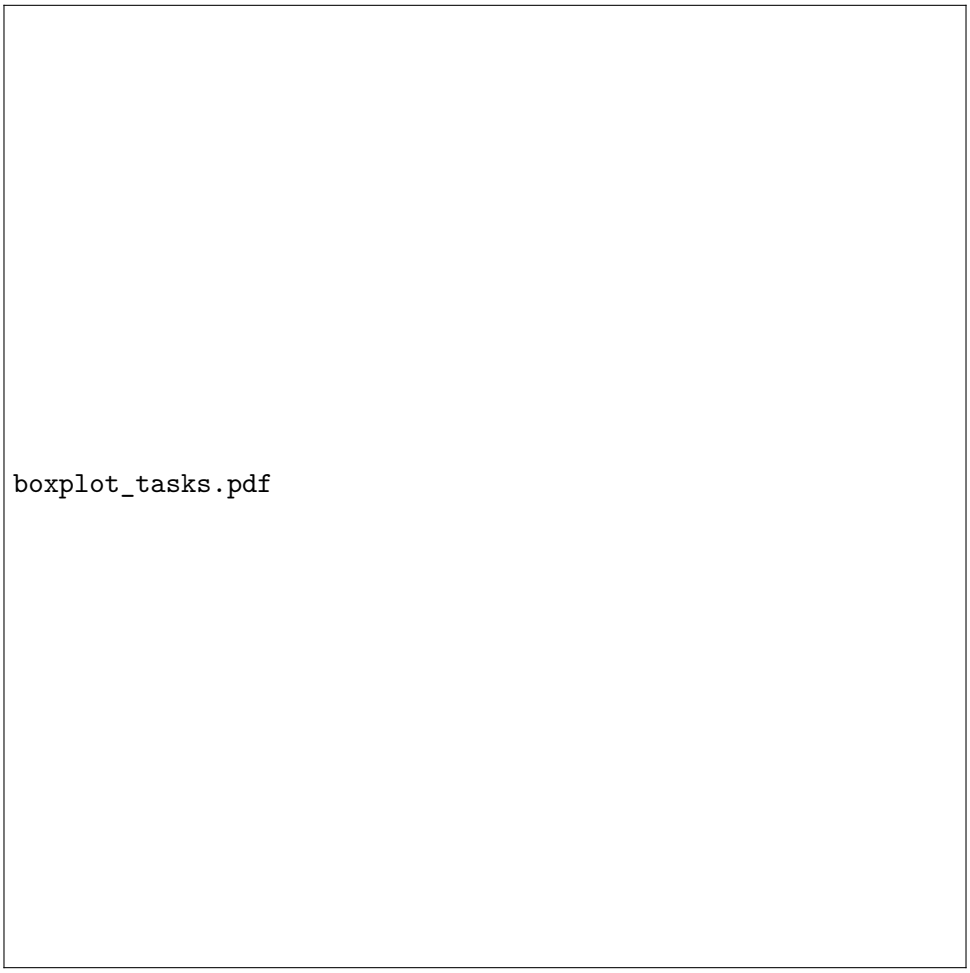
Overall ranking shows a clear separation between navigation-heavy and recognition-heavy tasks. Confidence is high for the top half.

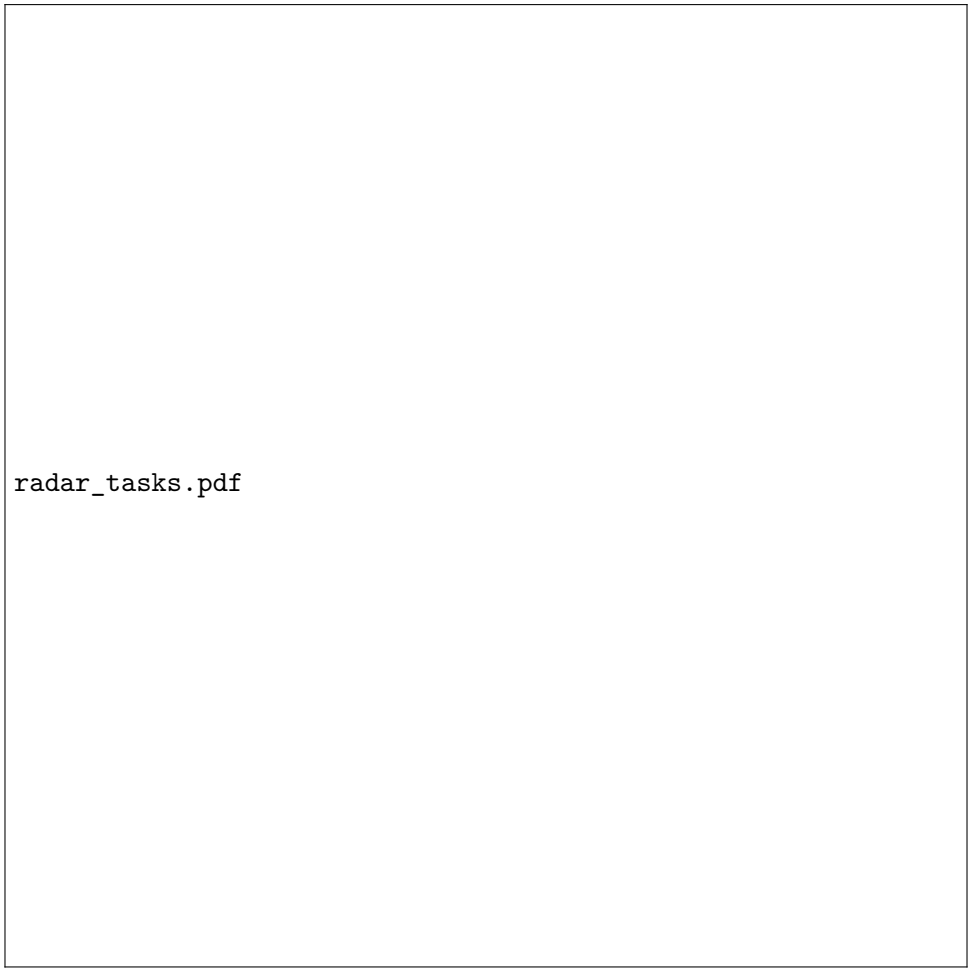
3 Explanation

Higher cognitive load typically manifests as longer task duration, higher inter-participant variability, increased pupil diameter, and altered saccade behavior.

This is not a diagnosis. It is a relative difficulty indicator within tested tasks.

4 Evidence





5 Consistency & Variability

Approximately 75% of participants ranked Task 7 among the top-3 hardest. Experts consistently showed lower load on Task 4.

6 Notable Findings / Outliers

- Task 11 has low sample size
- One participant shows inverted ranking pattern

7 Run Configuration

- Data source: normalized$_df$
- Detected groups: experts, novices
- Detected tasks: 12 tasks detected
- Ranking rule: Mean rank across normalized metrics