



Visual Memory Test

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Purpose of this document

This file contains all the information to understand and analyze the Visual Memory Test. You will be able to find relevant information about how this assessment task works, what it measures, and all relevant data about the variables recorded during the performance of the activity.

Task Info

In this section information about the task, its structure, and stimuli will be given.

Task Description

The *Visual Memory Test* is a visual memory and recognition task built around features of objects and sequence order. In this task, a trio-sequence of common objects is presented in the center of the screen. The test-taker is required to memorize this trio sequence on the first screen and will have 5 seconds per trial to recognize it from among four trio sequences on a second screen. Throughout the trials, the exposure time of the trio of objects presented and the distance between the three visual elements that constitute the trio will vary sequentially.

The concept of this task is based on the Benton Visual Retention Test (Benton, 1945) and the Symbol search subtest in the Wechsler assessment battery (WAIS-III; Wechsler, 1997).

You can try the *Visual Memory Test* for free on [this page](#). If you want more information about its technical details, you can contact us at support@cognifit.com.

Cognitive skills measured

The primary cognitive ability measured by this task is **visual recognition**.

This task contributes to the measurement of Spatial perception, Visual scanning, Recognition, Visual memory, Working memory, Processing speed, and Response time.

Task Structure

The task is divided into 2 phases:

Phase	Trial	Exposure duration	Stimuli distance
0 (Learning)	1	3000 ms	200 pixels
	2	3000 ms	200 pixels
1 (Testing)	1	3000 ms	200 pixels
	2	2250 ms	200 pixels
	3	1500 ms	200 pixels
	4	3000 ms	260 pixels
	5	2250 ms	260 pixels
	6	1500 ms	260 pixels
	7	3000 ms	320 pixels
	8	2250 ms	320 pixels
	9	1500 ms	320 pixels
	10	3000 ms	380 pixels
	11	2250 ms	380 pixels
	12	1500 ms	380 pixels

Task Stimuli

There are two turns in each trial: the "model" turn and the user's turn. At the "Model" turn, there will appear the conceptual representation (a silhouette-like drawing) of three objects, each of them will be horizontally centered inside a white rectangle. At the user's turn, there will appear four white independent rectangles arranged in each corner of the screen. Each of the rectangles will contain three objects distributed along the horizontal axis. One of the rectangles will contain exactly the same objects that the model had. The other three will keep two objects from the model, but one of them will be different. Every distractor only will differ in one object from the model, and all of them will differ in a different way from the model.

Variables Info

In this section details about the variables, their definition, range, and other pieces of relevant information will be given.

Basic Variables

Basic variables refer to variables and indices that are commonly used in experimental research and clinical settings.

Accuracy

This variable measures the percentage of accuracy in all trials of the testing phase. It ranges from 0 to 100, and higher values indicate better performance.

Response time

This variable measures the average response time to correct trials in the testing phase. It ranges from 0 to 5000 milliseconds, and lower values indicate better performance.

Omission errors

This variable measures the number of trials where no response is given by the user, that is, the number of timeouts. It ranges from 0 to 12. High scores on this variable indicate that the user is distracted (not paying attention) or has a slow response.

Omission errors (percentage)

This variable measures the number of trials where no response is given by the user, that is, the number of timeouts. It ranges from 0 to 100. High scores on this variable indicate that the user is distracted (not paying attention) or has a slow response.

Additional Variables

Additional variables refer to the variables and indices that are calculated by CogniFit for its internal computation of results.

Accuracy in short exposure time

This variable measures the percentage of accuracy in the trials with an exposure duration of 1500 milliseconds in the testing phase. It ranges from 0 to 100, and higher values indicate better performance.

Accuracy in medium exposure time

This variable measures the percentage of accuracy in the trials with an exposure duration of 2250 milliseconds in the testing phase. It ranges from 0 to 100, and higher values indicate better performance.

Accuracy in long exposure time

This variable measures the percentage of accuracy in the trials with an exposure duration of 3000 milliseconds in the testing phase. It ranges from 0 to 100, and higher values indicate better performance.

Accuracy in short distance

This variable measures the percentage of accuracy in the trials with a stimuli distance of 130 pixels in the testing phase. It ranges from 0 to 100, and higher values indicate better performance.

Accuracy in medium-short distance

This variable measures the percentage of accuracy in the trials with a stimuli distance of 200 pixels in the testing phase. It ranges from 0 to 100, and higher values indicate better performance.

Accuracy in medium-long distance

This variable measures the percentage of accuracy in the trials with a stimuli distance of 270 pixels in the testing phase. It ranges from 0 to 100, and higher values indicate better performance.

Accuracy in long distance

This variable measures the percentage of accuracy in the trials with a stimuli distance of 320 pixels in the testing phase. It ranges from 0 to 100, and higher values indicate better performance.

Response time in short exposure time

This variable measures the average response time to correct trials with an exposure duration of 1500 milliseconds in the testing phase. It ranges from 0 to 5000 milliseconds, and lower values indicate better performance.

Response time in medium exposure time

This variable measures the average response time to correct trials with an exposure duration of 2250 milliseconds in the testing phase. It ranges from 0 to 5000 milliseconds, and lower values indicate better performance.

Response time in long exposure time

This variable measures the average response time to correct trials with an exposure duration of 3000 milliseconds in the testing phase. It ranges from 0 to 5000 milliseconds, and lower values indicate better performance.

Response time in short distance

This variable measures the average response time to correct trials with a stimuli distance of 130 pixels in the testing phase. It ranges from 0 to 5000 milliseconds, and lower values indicate better performance.

Response time in medium-short distance

This variable measures the average response time to correct trials with a stimuli distance of 200 pixels in the testing phase. It ranges from 0 to 5000 milliseconds, and lower values indicate better performance.

Response time in medium-long distance

This variable measures the average response time to correct trials with a stimuli distance of 270 pixels in the testing phase. It ranges from 0 to 5000 milliseconds, and lower values indicate better performance.

Response time in long distance

This variable measures the average response time to correct trials with a stimuli distance of 320 pixels in the testing phase. It ranges from 0 to 5000 milliseconds, and lower values indicate better performance.

Validity Index

The user's performance will be considered to deviate from what is expected to the point of invalidating the results of the assessment when it falls outside these ranges.

Task validity

This variable represents the validity of the whole task, and it is 'true' only when all the individual variables of the Validity Index of the task are 'true'. Otherwise, it is 'false'.

Accuracy validity

This variable measures the validity of the variable "Accuracy", and it is 'true' when its value is between 0 and 100 (both included). Otherwise, it is 'false'.

Response time validity

This variable measures the validity of the variable “Response time”, and it is ‘true’ when its value is between 250 and 5000 milliseconds (both included). Otherwise, it is ‘false’.

Omission errors validity

This variable measures the validity of the variable “Omission errors validity”, and it is ‘true’ when its value is below 6, included. Otherwise, it is ‘false’.

References

Benton, A. L. (1945). A VISUAL RETENTION TEST FOR CLINICAL USE. Archives of Neurology and Psychiatry, 54(3), 212. <https://doi.org/10.1001/archneurpsyc.1945.02300090051008>

Wechsler, D. (1997). WAIS-III: Wechsler Adult Intelligence Scale - Third edition administration and scoring manual. San Antonio, TX: Psychological Corporation.