

Independent Project

Title: Short-term Memory

Introduction: Short-term Memory is being able to recall limited amounts of information for a limited amount of time. In the brain, the prefrontal cortex is the most important region in forming short-term memories. The hippocampus can then encode short-term memories into long-term memories if desired.

Purpose: To learn about the capacity and duration of short-term memory with a word list memory test.

Procedure:

- 1) Supplies needed to perform this experiment are: one paper with a table of 25 random simple words, see example 1 below. On another piece of paper create a second table of 25 simple words, but now make five rows of five words that have a relation to one another, see example 2 below. It is also very important to have access to a time and sheets of blank lined paper.

Example 1

Nine	Swap	Cell	Ring	Lust
Plugs	Lamp	Apple	Table	Sway
Army	Bank	Fire	Hold	Worm
Clock	Horse	Color	Baby	Sword
Desk	Grab	Find	Bird	Rock

Example 2

Horse	Cat	Dog	Fish	Bird
Orange	Yellow	Blue	Green	Black
Table	Chair	Desk	Bookcase	Bed
Teacher	School	Student	Homework	Class
Apple	Banana	Kiwi	Grape	Mango

- 2) Now gather a group of two or more to conduct this experiment on. For this experiment I will be studying 3 people. My mother, my boyfriend, and I.
- 3) Next, test one subject by giving them the first test of 25 random simple words. Let them examine the table for two minutes. Then take it away and flip the paper over so they can no longer see the words. Now, on a blank piece of lined paper, have the subject write as many words as they can memorize from the table. They will have # minutes to do so.
- 4) When the # minutes are done, collect the subject's paper and count how many words the subject was able to successfully memorize.
- 5) Using the same subject, give them the second test which consists of 5 rows of 5 words that relate to each other. The purpose of the second test is to introduce a strategy called chunking. While short term memory is limited, strategies such as chunking or grouping words that are related is said to significantly increase memorization and recall.
- 6) To test this theory, repeat steps 3 and 4 with the second test. Once both tests are complete, compare the results and see which test proved to be more successful for each subject.

Results:

Test Subjects:	Test 1 (random)	Test 2 (chunking)	Difference
Annie	10/25 words	15/25 words	+5 words
Diego	12/25 words	14/25 words	+2 words
Mikayla	15/25 words	20/25 words	+5 words

Discussion: As you can see in the results, test two was proven to be more successful than test one. We all agreed that the chunking method did make it easier to recall words. What I found most interesting is that my mother and I both improved by five words but my boyfriend only improved by two words. It made me curious whether or not us being mother and daughter can determine your short term memory. We all agreed that this test was harder than it looked.

Conclusion: I have a better understanding of how capacity and duration of short-term memory works. using the method of grouping proved to be effective as it made it easier to recall words that could be related to one another. As well as make better guesses as to what missing words could be.