

Duration of short term memory

Psychology



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PSYCHOLOGY INTERNAL Assessment Duration of Short Term Memory Mariam Kandelaki New school International school of Georgia and level: Psychology Standard Level

Date, Month, Year: November 7th 2014

Word Count: 1661

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Abstract

The human mind is an embodiment of various cognitive abilities. Amongst these is memory. Memory is essentially defined as the ability of the mind to retain information which has been received from any of the five senses that a human being has. Notably, human memory is into two: long and short term memory. There have been postulations that there are various factors that influence human cognition when it comes to short term memory. In particular, time seems to be a variable which affects the ability of people to recall objects over short time frames. The objective of the study is to determine if time influences the short term memories of the participants. The method used for data collection is a random sample which is administered the list of letters to test their short term memory over different time periods. Descriptive statistics together with measure of central tendency are used as part of results' presentation. From the results, the conclusion is that short term memory is a subject of time.

Introduction

The following is replication of Peterson and Peterson's case study on short term memory. In the case study, the objective will be to test whether times has an influence on the short term memory of people. In particular, the test would use selected participants to determine the effect of time on the short <https://assignbuster.com/duration-of-short-term-memory/>

term memory. Human memory is a complicated phenomenon. In psychological perspectives, the memory is divided into that for short and long durations. Memory, by definition, is the ability of the mind to recall information that is input to the mind. This is the process of information processing that normally takes place during cognition. Trying to understand what affects people's cognition requires an extensive psychological assessment. In particular, understanding what affects the memory of people over what can be described as short intervals of time is a bit complicated. In the following discourse, the assessment is of a case study of the factors that influence human memory over short intervals of time. Several theories have postulated in an attempt of understanding the cognitive abilities of humans. The following case study draws references from the Peterson and Peterson's study book. (Exploring Psychology 74). In doing the assessment, time will be evaluated as a factor which is likely to affect the short time memory of the participants.

The Peterson and Peterson study is quite a useful reference point in understanding short term memory. This is because the finding that it had argued that time is a factor which determines human cognition. It showed that time affected the participants' ability to recall given three-letter words. According to Journal of Experimental Psychology by Peterson and Peterson page 197, time is a factor which affects human cognition. Based on this, the study by the two is quite in this case.

Aim

To determine if time is a variable that influences participants' ability to memorise or recall objects over short durations.

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Hypothesis

Short term memory is affected by the period over which a person is subjected to recall a given task.

Design

The study would engage the participation of 20 volunteers. The participating volunteers will be selected randomly to allow for a more empirically valid finding. In this case, since sight would be important for the success of the study, it will be important that every participant has a good eye sight. The ability to see will enable an apt response to the questions that would be directed at the participants. In this case, the participants will be taken through a standardised process where they will be exposed to images of alphabetical letters in random manners. The images chosen will be made of consonants only. The intention to tease the mind by giving random three letter words that would not be easy to recognize. In addition, the letters generated by this design should not be known words.

The participants were given the letters and then they were expected to remember them after given intervals of time. In this case, the time intervals that were used are 4, 8, 12, 16, and 20 seconds. The ability of the participants to recall what they memorised was tested by the ability to replicate the images seen over the given time lines.

Variables

Dependent Variable: Ability to remember (Short time memory)

Independent Variable: Time

Participants

The participants taking part in the experiment were selected randomly

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through a sampling process in a local community. The number of participants, n , was 20. The selection process was fair in terms of gender preferences and age variation; the participants sampled were from different ages and gender as the community from which they come is diverse. The ages of the participant aged from 16 to 25 years. The participants selected were able to read and write. In addition, there were 10 male and an equal number of female participants. The randomness in the experiment was to ensure that the data collected would be credible as possible based on the uniqueness of the selected participants.

Ethical standards

The participants voluntarily participated in the study. Their participation was in conformity with the procedure and methods outlined in the case study. In addition, no form of coercion was used to force participation. Setting the age of participants to a minimum of sixteen years was intentional since it coincides with the legal age of majority where a person is believed to be old enough to know right from wrong as per Georgia's laws.

Materials

Peterson and Peterson case study

A computer for collecting and processing data

Data storage medium

Formulated lists of three letter words which are made of consonants only

Timer

Writing Materials

Procedure

The Peterson and Peterson case study was replicated as follows:

For each participant, a list of the three-letter words was given over a timed

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period.

For the first test, the ability of the participant to recall was tested over four seconds. In this case, the participant was required to write down every letter from the list that had been given earlier.

After another period of four seconds, the participant was given a new writing pad to write down the same letters.

The procedure was repeated until the time period was 16 seconds.

The same procedure repeated for every participant until the twenty were all through with the tests.

Results

The measures of central tendencies used in this case are mean and average. The average and mean are used with n as 20 since it is the number of participants.

The results from the experiment were tabulated. The tabulation is as shown below.

Time Intervals (Seconds)

Four

Eight

Twelve

Sixteen

The Average Number of participants recalling all the three letter words

20

15

11

8

Discussion

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From the results, the insinuation is that the number of participants who were able to recall all the three letter words reduced with time. At the start, every participant could recall all the three letter words that had been given.

However, as time went by, some of the participants had difficulties in recalling the three letter words that had been given. The implication in this case is that with time, the short memories of the participants were affected.

In fact, with increasing time intervals, the cognitive ability of the human mind changes as. (Conway 14). The human mind should be perceived as the information centre where every signal input from the sense organs is directed as stated by McLeod in his book Peterson and Peterson.

At about the 12 second interval, it was slightly over 50% of the participants who could recall all the words that were given to them. This is contrast to the fourth second where 100 % of the participants could recall the letters given to them. By the sixteenth second, less than 50 % of the participants could recall the letters given earlier. The results point to a similarity with the Peterson and Peterson's experiment. The implication is that there is short term memory in human minds and that it is under the influence of time especially when the participants have not been subjected to the shown images before. The short term memory is essentially different from long term memory. The findings are in conformity with the model of memory which is described as multi-store; information is stored in different levels of the brain based on given time frames.

From this, the hypothesis is thus confirmed: time is a variable which affects a person's response to short term memory.

Figure 1

Limitations

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The study might have been compromised by the inability to have younger participants who were below the ages of sixteen; probably, age might be a factor which affects memory since it plays a role in growth and development. In addition, the participants were people who had been in school thus they should not have had a problem reading the letters given to them. This might have improved their memory.

However, to limit the effects of these weaknesses, the study tried to include such a random sample to an extent that the limitations would be of minimal effects on its results.

Conclusion

The human mind retrieves stored information differently. The retrieval of the information depends on how the brain stores it; there is information which is stored on short term while others are stored on long term as indicated in of Thinking in Words by Lindsay. When it comes to short term memory, time is a variable which determines the ease or ability of retrieving the information. (Lindsay 66). From the case study above, it is evident that short term memory is influenced by time just like Peterson and Peterson's experiment proved.

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