

Testing of Miller's Magical Number among Prospective Teachers

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Abstract:

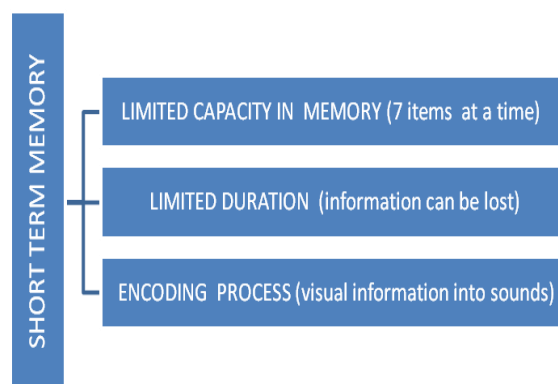
Memory and forgetting is the key factor of human life. Especially the teachers are very much involved in this condition. Here the researcher going to test the short term memory. This paper is emphasizes upon the limit of the short term memory based upon the millers magic number. A test is conducted upon the population consisting of future teachers in a classroom environment to find out the extent to upto how much the population can remember. 12 words are recited two times and the population is expected to write down the words they remember only after once all the 12 words are recited. The basic analysis is done upon the outcomes of the experiments and the inference and conclusions are derivate.

Keywords: Short term memory, Miller, magical number, and prospective teachers.

I. INTRODUCTION

Short-term memory is also called primary memory, that means the information which we are currently thinking. Paying attention of sensory memories is found in short term memory. The information kept in memory stored for approximately 20 to 30 seconds n short term memory. Rehearsal and active maintenance we can prevent the information. Some information can last in few seconds or a minute, but most of the information spontaneously decays quite quickly. In this paper experimental test is conducted upon the population consisting of future teachers in a classroom environment to find out the extent to up to how much the population can remember. The perspective teachers are selected for this testing procedure. Because the teaching community only can convey the message to the whole group in our society.

Short term memory has the following aspects:



1.1 Millers Magical Seven

The Magic number 7 provides evidence for the capacity of short term memory. Most adults can store between 5 and 9 items in their short-term memory. This idea was put forward by Miller (1956) and he called it the magic number 7. He though that short term memory could hold 7 (plus or minus 2 items) because it only had a certain number of “slots” in which items could be stored.

However, Miller didn't specify the amount of information that can be held in each slot. Indeed, if we can “chunk” information together we can store a lot more information in our short term memory.

1.2 Objective

To prove that the number of objects an average human can hold in working memory is 7 ± 2 on the demographic variable gender, degree and their stream of study

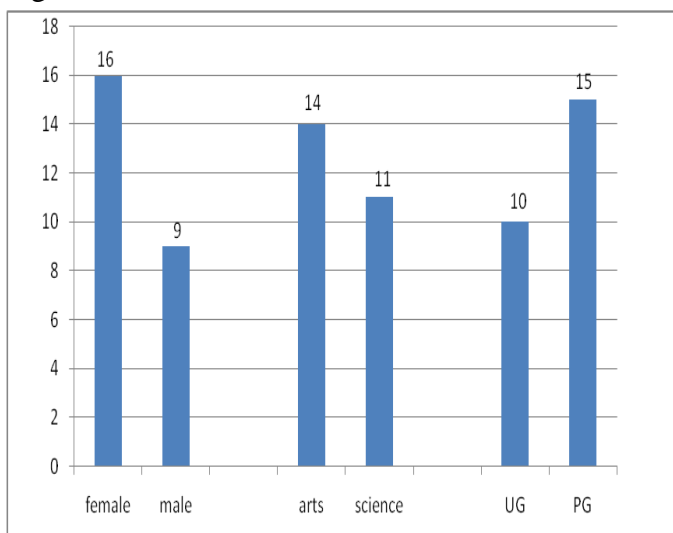
1.3 Hypothesis

There is a mean difference between the working memory based on the demographic variable gender, degree and their group.

II. METHODOLOGY

Experimental survey method observed in this study.

SAMPLE: 25 students of B.Ed first year (2019-2020) prospective teachers in VISTAS. The sample distribution is in this below chart. The responses of the samples are registered. According to the gender the responders are female 16 and male 9. Their stream of study arts group responders 24 and science group responders are 11. The qualification wise the UG degree holders are 10 and the PG degree holders are 15.



III. EXPERIMENTAL METHOD OF THIS STUDY

The research group kept the samples in an examination hall. All the samples were thoroughly checked for phones, electronics, pen and paper.

Then the experiment was floated. The samples were asked to list to a list of 12 English words with their Tamizh translation; the words were repeated for a total of 3 times. Then the samples were provided with paper and pen. They were asked to write what they listened before in combinations of English and Tamizh within 1 minute. Then the observations are evaluated and the average number of combinations which the samples could keep in their STM is found.

IV. QUESTIONNAIRE

For this experiment process the following words are selected translated into Tamil. Both the language words have selected for counting

Table 1. English Words and their Tamil translations

English	தமிழ்
Enhance	அதிகப்படுத்து
Institution	நிறுவனம்
Factor	காரணி
Variate	சார்ந்தமாறி
Password	கடவுச்சொல்
Transliteration	ஒலிபெயர்ப்பு
Contemporary	ஒரே காலத்திய
Liberalization	தாராளமயமாக்கல்
Crystallography	படிகவியல்
Criticism	திறனாய்வு
Infrastructure	உள்கட்டகம்ப்பு
Preceptor	உபாத்தியாயர்

V. RESULTS

Mean of the capacity of STM of total samples is

6.8 Gender wise comparison:

Mean of the capacity of STM of Male samples is

6.5 Mean of the capacity of STM of Female samples is

6.9 Degree wise comparison:

Mean of the capacity of STM of UG degree samples is 7.6

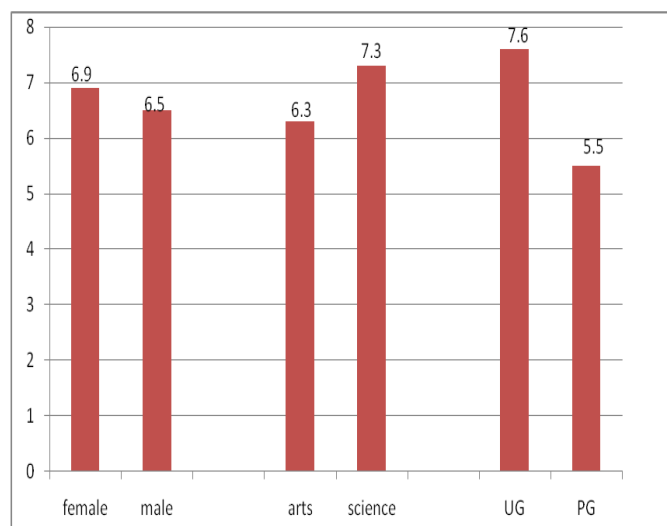
Mean of the capacity of STM of PG degree samples is 5.5

Group wise comparison:

Mean of the capacity of STM of Arts Group samples is **6.3**

Mean of the capacity of STM of Science Group samples is **7.3**

The results of the short term memory is presented in the below chart



VI. INFERENCE

The result of the experiment shows the samples capacity of short term memory is 6.8. Science group UG degree Female samples are having good memory according to the mean calculated value

The experiment also shows that the mean of the capacity of STM of Human Brain is within 7 ± 2 .

But there is one notable deviation in the value of experienced candidates alone, which some other factors like stress, could explain. A detailed study might be required for that set of samples alone. Here the millers magical number seven has proved with this testing. The samples are kept the items in their short term memory 6.8. So that the magical number is constant for all normal human beings.

VII. CONCLUSION

The experiment concluded that the short term memory capacity lies around the miller's number i.e seven. The short term memory of a person can be further improved by a routine simple tasks related to improving mental concentration and physical co ordinations. Rehearsal is the main source of retaining the memory in long term. Further

experimentation can include a set of exercises to analyze pre exercise and post exercise results to analyze whether millers number stands true for all scenarios.

Conflicts of Interest: The authors declare no conflict of interest.

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