Factors impacting the recall of Long Term Memories

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Abstract

Recall is the ability to retrieve some information from long term memory. Various factors impact a person's ability to recall some issues. As such it is essential to find out some of the factors that affect recall at a certain age. This paper makes use of year-10 participants from a learning institution to try and find out some of the factors that may have influenced their recall. In particular, the participants, after the due selection process, were read out a word list that they would later be supposed to recall a specific set of words. The experiment was conducted some few minutes after the words were read, and then after 48 hours. The results were then tallied, tabulated and a discussion of the results presented at the end of this paper.

Introduction

Long-term memory stores information over an extended or long period. Long term memory has quite a large capacity; for information to be used for any purpose, it must first be recalled (Cherry, 2019). Memory recall entails the process of retrieving information or events from the past. Various factors affect memory recall. For instance, some of the well-known issues that affect recall include the type of techniques used to experiment, the learning depth employed, the pattern used to learn and lastly the materials used to learn (Cowan, 2016). Further, there are various patterns of retrieving a memory that exists; such include free, serial and cued recall. Moreover, other factors such as age, gender, stereotypes and more have some resounding impact on the ability to recall (Graves et al., 2017).

In the type of experiment, it has been observed that people tend to recall more when they are given cues. As such, this information can be used to suggest that people are better at recognizing things as opposed to recalling them. On the depth of learning, it is evident, through

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research, that when people learn about something for an extended period, it is highly likely that they will remember the items. On patterns of learning, it is insinuated that learning can be affected by the intensity of the process, a factor that also affects the process of recall. Also, depending on the material learned, some people find it easy to recall some issues as opposed to others. Depending on the issue at hand, recall and factors that affect recall can be divided into various sections.

Yamagishi, Sato, Sato & Imamura (2012) investigated the factors that cognitively affected the free and cued recall as well as some tasks in recognition of Alzheimer's patients. Using a procedure that involved an extended three-word test, the authors found out that the extended 3-word test presented some problems in memory processes for the patients. Further, the authors found out that the test could be used to present problems in the retention of memory, attention issues as well as executive functions when compared to the word-list tests. In essence, the authors appraised the three words task for the patient's evaluation.

This task is aimed at investigating how the long term memories are formed. The task will involve an investigation on the effects of mental repletion and note-taking on recall abilities from the long-term memory. In the study, several psychology students will be investigated on their ability to recall some words from a list.

Method

Participants for the research were year ten students from the institution. Selection of the participants was through an overall invitation of all the year-10 students that were willing to participate in the study. The invitation was conducted at a regular 10-year assembly. All the willing participants were duly informed of the process of research as well as what would be required of them. Further, they were equipped with a consent letter that was to be signed by both

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the willing students and their parents. Anyone willing to withdraw from the research, either after signing the consent form or after commencing with the investigation was allowed to do so.

The actual research involved a set of 50 words that were read out to the students. Amongst these words, the students were required to recall as many words that began with letter 'S' as possible. These set of 'S' words, which were known as the critical words were part of the wider list. The tools used to conduct the research included the consent and information letters, the list of 50 words, a sheet for recording data and a distractor task. From the proposed sample group, 72 students committed to going on with research, 36 males and 36 females. All the participants were aged between 13 and 17 years and belonged to year 10.

Ethical considerations were duly put in place; prior, during and after conducting the research. Before the research, the students signed some consent forms that were supposed to be compulsorily signed by their parents as well. The consent indicated that the students were aware of the research, the process to be undertaken and what was expected of them, during and after the research. Additionally, the consent indicated the rights of the participants in the research process. According to Nijhawan et al. (2013), for any research involving human participants, it is legally and ethically required to have some informed consent.

Results

The results of the research have been tabulated as below

No note taking

Participant (Age) Male	**Words recalled out of 12**	**Participant (Age) Female**	**Words recalled**
1 (15)	4	16 (15)	9

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2 (15)	6	17 (15)	3
3 (15)	3	18 (14)	8
4 (15)	6	19 (15)	8
5 (15)	7	20 (15)	5
6 (15)	6	21 (15)	7
7 (15)	5	22 (15)	9
8 (15)	5	23 (15)	4
9 (15)	1	24 (15)	7
10 (15)	3	25 (14)	2
11 (15)	6	26 (15)	7
12 (15)	1	27 (15)	8
13 (15)	9	28 (13)	2
14 (15)	6	29 (14)	6
15 (17)	7	30 (15)	8
		31 (16)	8
		32 (17)	7
		33 (17)	7
		34 (16)	9
		35 (17)	9
Average	4.857		6.65

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Results without note-taking: average for boys: 4.7, girls: 6.9

Participant (Age) Male	**Words recalled out of 12**	**Participant (Age) Female**	**Words recalled**
36 (15)	2	57 (14)	9
37 (14)	4	58 (15)	8
38 (15)	3	59 (15)	7
39 (15)	3	60 (15)	9
40 (15)	7	61 (15)	4
41 (14)	3	62 (15)	6
42 (15)	7	63 (15)	6
43 (14)	6	64 (17)	6
44 (14)	6	65 (17)	9
45 (15)	5	66 (17)	5
46 (15)	5	67 (17)	5
47 (15)	2	68 (17)	7
48 (15)	5	69 (15)	9
49 (14)	2	70 (15)	6
50 (15)	6	71 (14)	8
51 (15)	3	72 (13)	7
52 (16)	8		
53 (17)	5		
54 (17)	6		

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55 (17)	4		
56 (15)	6		

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Word	**No Note Taking No# times word recalled (Male)**	**No Note Taking No# times word recalled (Female)**	**Note Taking No# times word recalled (Male)**	**Note Taking No# times word recalled (Female)**
Sweat	13	13	5	11
Surgery	14	19	9	11
Shake	2	10	8	16
Screen	6	9	4	3
Sample	3	3	8	5
Space	3	7	4	7
Smile	13	18	9	9
Sheep	9	13	9	8
Service	8	9	6	12
Snake	9	12	13	11

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Summer	9	11	12	12
Strong	7	5	9	6
	7.92	10.75	8	9.25

Discussion

The factors impacting memory have been presented accurately as done in the class experiment above. Considering that the participants were of approximately the same age, the most conspicuous statistics was the difference between recall abilities in boys as opposed to the same abilities in girls. In an interesting observation, the girls seemed to have better recall capabilities than boys in all categories. As such, it seems there are other factors that hinder or enhance recall. Precisely, in this case, it is indicated that irrespective of the age, there are gender differences that impact recall. This statement is underpinned by Baer, Trumpeter and Weathington (2006) who posited that there are remarkable differences in the manner males and females recalled stereotyped objects; however, the researchers suggest that females were overall better at recalling objects as opposed to men.

In the word tally, it is evident that most people recalled some of the words as opposed to others. As noted earlier, there are different recall abilities on some of the most some words. For instance, more participants would remember the name smile when compared to the word sample. In cued recall, as noted, some people will easily identify some words as long as they are in

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context with some certain cue; the word smile is easily cued to the act of smiling, but the word sample cannot be easily cued as it has not been explained what sample it insinuated.

Further, as noted in some of the factors impacting recall, the type of the experiment matters. In this case in point, it was noted that participants were better at recalling words that recognized certain objects, for instance, the word snake. Again, if compared with the word 'sample', the word 'snake' would espouse some reactions as the participants would easily associate the word with a certain type of animal, something that missies in the word 'sample'.

There are words that can easily be associated with some certain gender that have also been identified as espousing some difference. The word 'strong' for instance was remembered by seven boys against five girls. This phenomenon indicates that more boys would remember the word, as supposedly, they would want to be associated with strength. In such an instance, this is probably an instance of stereotyped words where boys are known to be stronger than girls, while girls do not care about strength. As such, it is evident that recall abilities are influenced by a multitude of factors.

Notably, there was a remarkable difference in recall abilities with note taking and without note-taking. Such a scenario can be ascribed to the aspect of the depth of learning. Once a person hears something and later notes it down, the learning is deeper, and thus the tendency to recall becomes quite higher as showcased by the higher figures in the note-taking section for both girls and boys.

Another factor that is supposedly conspicuous in the research study was the aspect of age. As noted by Graves et al. (2017), recall abilities decline with age. As such, it was not possible to bring such an issue out. Considering that the participants were approximate the same age, it is evident that there were no remarkable differences observed. As such, the differences between the

participants themselves seemed as a result of other diverse factors. The context of this research could not tell the exact reasons, but t is necessary that additional research is done to substantiate why people differ in recall abilities. Moreover, a deeper insight into more memory recall literature could bring out such issues as an intellect to explain the cause.

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