Psychology Coursework: Memory Experiment on Levels of Processing

Method:

Design:

For my experiment I used a repeated measures design; the key benefits of this design are that it makes an experiment more efficient and aids in keeping inconsistencies minimal. This helps to keep the validity of the results higher, while still allowing for smaller than usual subject groups. Equally, I used an experiment because it is easier to control the variables.

The independent variable in my experiment is whether the words are deeply processed or shallowly processed and my dependent variable is the number of both, deep and shallowly processed words remembered.

Extraneous variables that I have to take into consideration when carrying out my experiment are: mobile phones going off and noise on the corridors distracting participants. To control these variables and make sure they do not interfere with my experiment I will ask all participants to switch off all mobiles during the 'Standardised Instructions' and I will carry out my experiment in a quiet area of the school.

There are also ethical issues that have to be contemplated before I carry out my experiment:

- Confidentiality - all participants will remain anonymous.
- Deception – I will not lie throughout my experiment,
- Debrief – this will be read out at the end of my experiment.
- Withdrawal – all participants have the right to withdraw from my experiment at any time; I will inform participants of this during the 'Standardised Instructions'.
- Informed Consent – all participants will know what is happening within my experiment.
- Protection – no one will be harmed during my experiment.

Sample:

My target population for this experiment is 16 year old girls from Whalley Range 11-18 High School in Manchester, England.

The sampling method I will use for my experiment was Opportunity Sampling because I used the people that were available to me; it is a quick and easy way to get my participants. I used 20 participants who all did both conditions.

Materials:

- 1 x Stopwatch
- 20 x sheets with words and questions on
- 20 x sheets of paper
- 20 x pens

Procedure;

Introduction;
I am looking at the memory section of Psychology to do my experiment; there are many examples of research in this area.
The lab experiment, carried out by Craik and Tulving, is a classic example of a study carried out to discover if deep processing improves memory. I will be replicating this study in my Psychology coursework.

By doing this experiment, I aim to find out if deeper processing words will improve recall of those words.

I predict that participants will remember the deeper processed words more accurately than the shallower processed words.

The independent variable in my experiment is whether the words are processed deeply or shallowly.
The dependent variable in my experiment is the number of deep processed words and shallow processed words remembered.

Standardised Instructions;
"Welcome; thank you all for agreeing to take part in my experiment on memory.
I am going to give you all a sheet of paper on which is a list of words with questions beside them (concerning the word).
Please put a ring around 'yes' or 'no' in answer to each question.
Can I request that all mobile phones are turned off as they may prove to be a distraction and interfere with the experiment.
If you would like to withdraw from the experiment please leave the room quietly without a disruption. Thank you."

Procedure;
*All participants will be answering questions regarding both **shallow** and **deep** processed words.*

1. Read out 'Standardised Instructions'.
2. Gave out the sheets of paper with the words and questions on.
3. Gave out pens.
4. Explained to participants that they had two minutes to complete the questions.
5. Timed the participants for two minutes.
6. After two minutes I asked all participants to stop.
7. Collected in all sheets with words and questions on.
8. Gave out blank piece of paper to each participant.

9. Explained to participants that they had one minute to write down as many words that they could remember from the list as possible.
10. Collected in all papers.
11. Read out debrief.

Debrief

"Again, thank you all for agreeing to take part and giving up your time.
My aim for this experiment was to find out if deeper processing words improved recall of those words.
Please feel free to ask any questions about the experiment and if you would like to view the results they will be available on the notice board in the Crush Hall.
Everyone will remain anonymous.
You are now free to leave, thank you."

Participant Number	Number of Deep Processed Words Remembered	Number of Shallow Processed Words Remembered
1	6	5
2	5	7
3	5	3
4	4	1
5	4	2
6	6	3
7	3	3
8	3	4
9	6	2
10	6	5
11	5	4
12	4	2
13	6	3
14	5	2
15	8	4
16	3	5
17	3	3

18	3	1
19	6	4
20	3	2
	94	**65**

Results;

Deep Processed;

Mean; 5

6 + 5 + 5 + 4 + 4 + 6 + 3 + 3 + 6 + 6 + 5 + 4 + 6 + 5 + 8 + 3 + 3 + 3 + 6 + 3 = 94

94 ÷ 20 = 4.7

= 5

Mode; 6,3

3, 3, 3, 3, 3, 3 , 4, 4, 4, 5, 5, 5, 5, 6, 6, 6, 6, 6, 6 , 8

Median; 5

3, 3, 3, 3, 3, 3, 4, 4, 4, 5, 5, 5, 5, 6, 6, 6, 6, 6, 6, 8

Shallow Processed;

Mean; 3

5 + 7 + 3 + 1 + 2 + 3 + 3 + 4 + 2 + 5 + 4 + 2 + 3 + 2 + 4 + 5 + 3 + 1 + 4 + 2 = 65

65 ÷20 = 3.25

= 3

Mode; 2, 3

1, 1, 2, 2, 2, 2, 2, 3, 3, 3, 3 , 3, 4, 4, 4, 4, 5, 5, 5, 5, 7

Median; 3

1, 1, 2, 2, 2, 2, 2, 3, 3, 3, 3, 3, 4, 4, 4, 4, 5, 5, 5, 7

Discussion;

Participants remembered words more easily when they were deeply processed (mean 5), compared to when they were shallowly processed (mean 3). This supports

my hypothesis of 'participants will remember the deeper processed words more accurately than the shallower processed words' because my results show this.

My study can relate to real life because my results show that deep processing helps improve memory. Therefore, students who are doing revision for exams can use the deep processing method to remember things easier.

Craik and Tulving also carried out an experiment very similar to mine. They found that deep processing improved memory.
I also found this from the results of my experiment.

During my experiment i found that the noise outside on the corridor proved to be a distraction to the participants involved. I also found that participants found it hard to concentrate due to other participants talking.
If I was to repeat my experiment I would include a request for no talking during the experiment in my '[illegible]'. I would also put a sign up on the door and around the corridor to inform people that an experiment is taking place and it would be appreciated if they could be as quiet as possible.

Although I found that deep processing helps to improve memory my results cannot be generalised as I only carried out the experiment on 20 people.

I have learnt through this experiment that deep processing helps to improve memory.