**STAGE 1 psychology**

**Assessment Type 1: FOLIO**

**TOpic 1: COGNITIVE PSYCHOLOGY**

**Purpose**

This assessment provides you with the opportunity to:

* evaluate the method provided from an ethically approved investigation for its strengths and/or limitations, the effect of these strengths and/or limitations on data, and analyse the data to formulate a logical conclusion
* deconstruct a problem related to the provided investigation, and
* design a method to investigate this problem.

**Description of assessment**

The report should contain three sections:

1. Analysis and Evaluation  
   Use the information and raw data provided in the *Research Focus: Memory* section on the following pages. This section of your report could include:

* an explanation of the design type used in the investigation described
* an evaluation of the choice of participants
* evaluations of the strengths and/or limitations of the investigation
* a suggestion for increasing the reliability of the data, justifying your answer
* a suggestion for increasing the validity of the data, justifying your answer
* a conclusion that could be made from the data provided.

1. The Deconstruction section of the report requires you to consider how you could conduct new research into retrieval processes.   
   You could do this by including:

* a consideration of how various factors could affect the outcome of an investigation into the retrieval of memories
* identification of the dependent and independent variables
* a consideration of the factors that should be held constant, with a description of how these factors could be controlled
* identification of factors that may not be able to be controlled
* a consideration of the sampling method and sample size.

1. The Design section of your report could include an introduction with relevant psychological concepts, but must include:

* a hypothesis or an investigable question
* a list of materials required
* a detailed method to test your hypothesis or question
* identification and management of safety and/or ethical risks
* an appropriate results table for the expected data
* suggestions for the results that would support your hypothesis
* explanations of the limitations of the investigation or the conclusions that could be drawn
* references (if applicable).

You could annotate your design to explain why you have made the decisions you have made.

**Assessment Conditions:**

For this investigation, students present an individual report.

Section 1: One lesson supervised in class.

Section 2: One lesson to design the investigation, either individually or in pairs.

Section 3: Each student is to complete the report at home.

The report should be a maximum of 1000 words if written, or a maximum of 6 minutes for an oral presentation, or the equivalent in multimodal form.

The deconstruct and design section should be on no more than 3 single sided A4 sheets of paper.

**Topic: COGNITIVE PSYCHOLOGY**

**Psychological Investigation – RAW DATA SAMPLE**

**Research Focus: Memory**

***Background information:***

Memory is the term given to the structures and processes involved in the storage and subsequent retrieval of information. In Psychology, the term memory covers three important aspects of information processing: encoding, storage, and retrieval. However, memory can at times be unreliable—we forget things, and even ‘recall’ things we never experienced (also known as ***false memories***).

The DRM illusion (after Deese, Roediger, and McDermott) is one way that false memories (or ‘intrusions’) may be formed. Roediger and McDermott (1995) showed that people tend to ‘recall’ an unstudied critical word or “lure-word” (e.g. *black*) that did not appear on a list of related studied words (e.g. *cat*, *charred*, *night*, . . .). The DRM illusion is explained by ***fuzzy-trace theory***—we “get the gist” of a category (e.g. ‘dark’ or ‘black’ things), which promotes false recall of a “gist-consistent word” (Brainerd, Reyna, & Forrest, 2002, p. 1366). Recall of words that are actually on a list is called ***verbatim memory***, whereas ‘recall’ of words that are not on a list but are related in some way to the words on the list, is called ***gist memory***.

Reyna (2006) places precise memory representations at the clear or verbatim end of the memory spectrum, and gist memory representations at the fuzzy end. Verbatim memory is accurate, analytical, and quantitative, whereas gist memory is inaccurate, intuitive, and qualitative. Gist recall is more frequent in adults than in children (Brainerd, Reyna, and Forrest, 2002**)**. Fuzzy-trace theory explains that this tendency is the result of an increase in intuition as we age.

False memories are difficult to avoid, but Gunter, Ivanko, and Bodner (2005) found that correct recognition was enhanced, and false recognition was reduced, using self-referential imagery—that is, forming images of oneself interacting with list words (e.g. for the word ‘*cat*’, one imagines oneself *patting a cat*).

The so-called self-reference effect (SRE) occurs in such cases (Symons & Johnson, 1997)—we achieve better recall of new material that relates to our self-concept than we do for new but unrelated or less-related material.

***Aspects of the Research Program***

***General hypothesis: The self-reference effect (SRE), and lure-word intrusion (LWI) have effects on memory.***

Participants were randomly allocated into one of two groups:

* Participants in Group 1 (control group) listened to a tape of 10 spoken words. Participants were instructed to remember the words. During the playing of the tape, no cues for improving memory were given. After listening to the tape, participants had one minute to write down as many words as they could remember.
* Group 2 (treatment group) participants followed this same procedure, but they additionally heard neutral cues on the tape after each word was spoken.

Later, the experimenter (teacher or responsible student) counted correct recalled words. Also recorded was the intrusion of the critical lure word ‘music’, as ‘Yes’ or ‘No’. ‘Yea-sayers’ used the lure word ‘music’, whereas ‘Nay-sayers’ did not.

|  |  |
| --- | --- |
| **Group 1** | **Group 2** |
| **[START]**   * note— * sound— * piano— * sing— * radio— * band— * melody— * horn— * concert— * symphony—   **[END]** | **[START]**   * note—visualise a symbol used by composers— * sound—think of a bubbling brook— * piano—see this instrument in your mind— * sing—imagine a performer with a microphone— * radio—picture holding it close to your ear— * band—imagine a rock or pop group— * melody—think of a tune— * horn—visualise a trumpet— * concert—picture people in a theatre— * symphony—think of brass and stringed instruments—   **[END]** |

**\*LURE WORD FOR BOTH GROUPS WAS *MUSIC***

**References**

* Brainerd, C. J., and Reyna, V. F., 1998, ‘Fuzzy-Trace Theory and Children’s False Memories,’ Journal of Experimental Child Psychology, vol. 71, pp. 81-129.
* Brainerd, C. J., Reyna, V.F., & Forrest, T. J. 2002, ‘Are Young Children Susceptible to the False-Memory Illusion? Child Development, vol. 73, pp. 1363-1377.
* Gunter, R. W., Ivanko, S. L., & Bodner, G. E. 2005. ‘Can test list context manipulations improve recognition accuracy in the DRM paradigm?’ Memory, vol. 33, 862-873.
* Roediger, H. L., III, & McDermott, K. B. 1995, ‘Creating False Memories: Remembering Words Not Presented in Lists,’ Journal of Experimental Psychology: Learning, Memory, and Cognition, vol. 21, pp. 803-814.
* Reyna, V. F. 2006, ‘Dual Processes in Reasoning and Decision Making: Fuzzy Rationality,’ Paper given at a conference at Fitzwilliam College Cambridge. Retrieved August 16, 2006, from: Symons, C. S., & Johnson, B. T. 1997, ‘The Self-Reference Effect in Memory: A Meta-Analysis,’ Psychological Bulletin, vol. 121, pp. 371-394.
* Stage 1 Support Materials Research Program - Positive Outlook (September 2012) © SACE Board of South Australia 2013

***Information & Data:***

**Sample Tested:**

The raw data provided below were collected over three consecutive years from year 11 Students studying SACE Stage 1 Psychology in Adelaide, South Australia.

**Raw Data:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Age** | **Gender** | **Group** | **Lure Word Intrusions** | **Word Recall** |
| **(Yes = 1; No = 0)** |
| **2018** | **16y 0m** | **M** | **1** | **0** | **6** |
|  | **16y 7m** | **F** | **1** | **1** | **7** |
|  | **15y 11m** | **F** | **1** | **0** | **8** |
|  | **16y 4m** | **F** | **1** | **0** | **9** |
|  | **16y 10m** | **F** | **1** | **0** | **7** |
|  | **15y 10m** | **F** | **1** | **1** | **9** |
|  | **16y 4 m** | **F** | **1** | **0** | **9** |
|  | **16y 4m** | **M** | **1** | **0** | **9** |
|  | **16y 7m** | **F** | **1** | **1** | **9** |
|  | **15y 10m** | **F** | **1** | **0** | **4** |
|  | **16y 5m** | **M** | **1** | **0** | **8** |
|  | **15y 11m** | **F** | **1** | **1** | **7** |
|  | **15y 11m** | **M** | **1** | **1** | **7** |
|  | **16y 0m** | **M** | **1** | **0** | **7** |
|  | **15y 11m** | **M** | **2** | **0** | **8** |
|  | **16y 3m** | **M** | **2** | **0** | **6** |
|  | **16y 5m** | **F** | **2** | **1** | **8** |
|  | **15y 7m** | **F** | **2** | **0** | **6** |
|  | **16y 4m** | **F** | **2** | **0** | **8** |
|  | **16y 4m** | **F** | **2** | **0** | **5** |
|  | **16y 9m** | **M** | **2** | **0** | **4** |
|  | **15y 11m** | **F** | **2** | **0** | **4** |
|  | **16y 8m** | **M** | **2** | **1** | **8** |
|  | **16y 9m** | **F** | **2** | **0** | **8** |
|  | **16y 1m** | **F** | **2** | **0** | **9** |
|  | **16y 6m** | **F** | **2** | **0** | **6** |
|  | **15y 11m** | **F** | **2** | **0** | **8** |
|  | **16y 1m** | **F** | **2** | **0** | **8** |
|  | **16y 7m** | **F** | **2** | **0** | **6** |
| **2019** | **16y 7m** | **F** | **2** | **0** | **6** |
|  | **16y 0m** | **M** | **2** | **0** | **5** |
|  | **16y 2m** | **F** | **2** | **0** | **5** |
|  | **16y 7m** | **F** | **2** | **0** | **9** |
|  | **16y 3m** | **M** | **2** | **0** | **8** |
|  | **15y 10m** | **M** | **2** | **0** | **4** |
|  | **16y 8m** | **F** | **2** | **1** | **9** |
|  | **16y 3m** | **F** | **2** | **0** | **8** |
|  | **16y 8m** | **F** | **2** | **0** | **8** |
|  | **16y 3m** | **F** | **2** | **0** | **8** |
|  | **16y 10m** | **F** | **2** | **0** | **7** |
|  | **16y 8m** | **F** | **2** | **0** | **8** |
|  | **16y 4m** | **M** | **2** | **0** | **8** |
|  | **16y 10m** | **F** | **2** | **1** | **8** |
|  | **16y 3m** | **F** | **1** | **0** | **6** |
|  | **15y 11m** | **F** | **1** | **0** | **7** |
|  | **15y 11m** | **F** | **1** | **1** | **7** |
|  | **16y 7m** | **M** | **1** | **0** | **6** |
|  | **16y 4m** | **F** | **1** | **0** | **7** |
|  | **16y 6m** | **F** | **1** | **0** | **6** |
|  | **16y 7m** | **M** | **1** | **0** | **5** |
|  | **16y 10m** | **F** | **1** | **1** | **6** |
|  | **16y 6m** | **F** | **1** | **0** | **7** |
|  | **16y 8 m** | **F** | **1** | **0** | **6** |
|  | **16y 3m** | **F** | **1** | **1** | **8** |
|  | **16y 2m** | **F** | **1** | **0** | **6** |
|  | **16y 8m** | **F** | **1** | **0** | **5** |
|  | **16y 1m** | **F** | **1** | **0** | **8** |
|  | **16y 1m** | **M** | **1** | **0** | **5** |
| **2020** | **16y 7m** | **F** | **1** | **0** | **5** |
|  | **16y 10m** | **F** | **1** | **0** | **6** |
|  | **16y 6m** | **F** | **1** | **0** | **7** |
|  | **16y 8m** | **M** | **1** | **0** | **6** |
|  | **16y 3m** | **F** | **1** | **0** | **8** |
|  | **15y 11m** | **F** | **2** | **0** | **8** |
|  | **16y 3m** | **F** | **2** | **0** | **6** |
|  | **16y 5m** | **F** | **2** | **0** | **8** |
|  | **15y 7m** | **F** | **2** | **0** | **6** |
|  | **16y 4m** | **M** | **2** | **0** | **8** |
|  | **16y 4mo** | **F** | **2** | **0** | **5** |
|  | **16y 6m** | **F** | **2** | **0** | **6** |
|  | **15y 11m** | **F** | **2** | **0** | **8** |
|  | **16y 1m** | **F** | **2** | **0** | **8** |
|  | **16y 7m** | **F** | **2** | **0** | **6** |
|  | **16y 7m** | **F** | **2** | **0** | **6** |
|  | **16y 0m** | **M** | **2** | **0** | **5** |
|  | **16y 2m** | **F** | **2** | **0** | **5** |
|  | **16y 9m** | **F** | **2** | **0** | **4** |
|  | **15y 11m** | **M** | **2** | **0** | **4** |
|  | **16y 8m** | **F** | **2** | **0** | **8** |
|  | **16y 9m** | **F** | **2** | **0** | **8** |
|  | **16y 1m** | **F** | **2** | **0** | **9** |

**Performance Standards for Stage 1 Psychology**

| - | Investigation, Analysis, and Evaluation | Knowledge and Application |
| --- | --- | --- |
| A | Critically deconstructs a problem and designs a logical, coherent, and detailed psychological investigation.  Accurately and thoroughly obtains, records, and represents data.  Systematically analyses and interprets data and evidence to formulate logical conclusions with detailed justification.  Critically and logically evaluates procedures, and their effect on data. | Demonstrates deep and broad knowledge and understanding of a range of psychological concepts.  Applies psychological concepts highly effectively in diverse contexts.  Critically explores and understands in depth the interaction between science and society.  Communicates knowledge and understanding of psychology coherently, with highly effective use of appropriate terms, conventions, and representations. |
| B | Logically deconstructs a problem and designs a well-considered and clear psychological investigation.  Logically obtains, records, and represents data.  Logically analyses and interprets data and evidence to formulate suitable conclusions with reasonable justification.  Logically evaluates procedures and their effect on data. | Demonstrates some depth and breadth of knowledge and understanding of a range of psychological concepts.  Applies psychological concepts mostly effectively in diverse contexts.  Logically explores and understands in some depth the interaction between science and society.  Communicates knowledge and understanding of psychology mostly coherently, with effective use of appropriate terms, conventions, and representations. |
| C | Deconstructs a problem and designs a considered and generally clear psychological investigation.  Obtains, records, and represents data with some errors.  Undertakes some analysis and interpretation of data and evidence to formulate generally appropriate conclusions with some justification.  Evaluates procedures and some of their effect on data. | Demonstrates knowledge and understanding of a general range of psychological concepts.  Applies psychological concepts generally effectively in diverse contexts.  Explores and understands aspects of the interaction between science and society.  Communicates knowledge and understanding of psychology generally effectively, using some appropriate terms, conventions, and representations. |
| D | Prepares a basic deconstruction of a problem and an outline of a psychological investigation.  Obtains, records, and represents data with occasional accuracy and effectiveness.  Describes data and undertakes some basic interpretation to formulate a basic conclusion.  Attempts to evaluate procedures or suggest an effect on data. | Demonstrates some basic knowledge and partial understanding of psychological concepts.  Applies some psychological concepts.  Partially explores and recognises aspects of the interaction between science and society.  Communicates basic psychological information, using some appropriate terms, conventions, and/or representations. |
| E | Attempts a simple deconstruction of a problem and a procedure for a psychological investigation.  Attempts to record and represent some data.  Attempts to describe results and/or interpret data to formulate a basic conclusion.  Acknowledges that procedures affect data. | Demonstrates limited recognition and awareness of psychological concepts.  Attempts to apply psychological concepts.  Attempts to explore and identify an aspect of the interaction between science and society.  Attempts to communicate information about psychology. |