Unit 1 Psychology: Outcome 3

SAC 2: Practical investigation - Logbook

Outcome 3: The investigation requires the student to identify an aim, develop a question, formulate a research hypothesis including operationalised variables and plan a course of action to answer the question and that takes into account safety and ethical guidelines. Students then undertake an experiment that involves the collection of primary qualitative and/or quantitative data, analyse and evaluate the data, identify limitations of data and methods, link experimental results to science ideas, reach a conclusion in response to the question and suggest further investigations which may be undertaken. Results are communicated in a scientific poster format according to the template in the Study Design. A practical work folio must be maintained by the student for record, authentication and assessment purposes.

TASK:

Over approximately 6-8 hours of Psychology lessons, you will be required to research, develop, test and present a research investigation into one or more aspects of Learning and/or Memory.

This is an individual task and hence must be done by each student independently. However, given the nature of the task, a suitable sample of participants may need to be identified and tested in order to generate the required data and results.

LOGBOOK:

Work through the Logbook contained within this booklet, using each section to guide you through the sequence of stages required in carrying out a psychological investigation.

Be sure to complete the checklist, signing and dating each component in the boxes provided as it is accomplished.

Please keep in mind that your logbook is one of the criterion featured in your rubric and constitutes a potentiation 5 marks to you your final score out of 50. In addition to these marks, the Logbook is essential for assessment of authentication that the work you produce is your own.

Your assessment is based on the following Key Knowledge dot points:

- development of an investigable question and formulation of a research hypothesis
- the psychological concepts specific to the investigation and their significance, including definitions of key terms, and psychological representations
• the characteristics of scientific research methodologies, including techniques for primary qualitative and quantitative data collection relevant to the investigation: experiments, surveys, questionnaires, observational studies and/or use of rating scales; reliability and validity of data; and minimisation of experimental bias
• ethics and issues of research including identification and application of relevant health, safety and bioethical guidelines, and use of human subjects
• methods of organising, analysing and evaluating primary data to identify patterns and relationships including sources of error and limitations of data and methodologies
• observations and experiments that are consistent with, or challenge, current psychological models, theories or frameworks
• the nature of evidence that supports or refutes a hypothesis, model or theory
• the key findings of the selected investigation and their relationship to psychological concepts and theories associated with perception and/or social cognition and influences
• the conventions of scientific report writing including psychological terminology and representations and standard abbreviations.

FINAL POSTER:
You are required to communicate the findings of your investigation in a scientific poster. The poster will be produced electronically using the template provided and should not exceed 1000 words. The production quality of the poster will not form part of the assessment.

Introduction
This section provides an explanation or reason for undertaking your investigation by outlining key psychological concepts and theories relevant to your research question.
• It should be like a funnel: Start with a definition of the topic that you are studying. Then it gets more specific and leads into the past research that you are referring to.
• You should include at least 2 or 3 definitions in the introduction. They should be linked in a meaningful way so that the paragraph flows properly.
• A summary of your past research outlining their aim, method, results and conclusion.

Objectives
This section establishes what you are planning to investigate, how you are going to manipulate and measure your variables and what you predict the outcome of your investigation will be. This is usually presented in the introduction section of an ERA, however it can be put in it’s own section on a poster such as these.
• Aim: A sentence that includes the effect of the simplified IV on the simplified DV.
• Hypothesis: You must include the population (NOT the sample!), the simple IV and DV and state the prediction/direction.
• Operationalised IV: Make sure you are very specific about the different conditions the control and experimental groups were exposed to.
● Operationalised DV: Be very specific about the data you recorded.

Methodology
This is a summary of the method in your investigation and will be authenticated by logbook entries.

● Participants: Provide as much detail as possible about the people you tested, e.g. total number, gender, age range etc. You should also state which sampling method was used.

● Materials: Make sure you list everything you used. If you have any appendices you should mention them in this section. E.g. Word List (Appendix A). You submit a copy of the Appendix with your poster.

● Procedure: You should refer to the experimental design that was used, what was involved in each condition and the specific results that were collected (raw data should be an appendix item). Like the rest of the poster, it should be written in past tense. It is helpful to number each step in the procedure.

● You can use dot points in this section.

Ethical Considerations

● Make sure you consider at least 2 or 3 ethical principles.

● Do not just write definitions, you must explain how you applied the ethic in your study.

Results

● Your graph should have a title and labels on the axes.

● You must use descriptive statistics, rather than raw data. And write it out properly, i.e. participants recalled, on average, 3 words out of 20.

● Don’t interpret or analyse your results, i.e. do not say if a conclusion/generalisation can be made.

References (and appendices)

● Author/s, (Year): Title (Edition). Place of Publishing: Publisher.


● You must also attach your appendices to your poster (as mentioned in the Methodology section).

● Appendices must be numbered and given a title. E.g. Appendix 1: Word List A
**Presentation/Language**

- The report should be set out using the template provided, including a title and the appropriate sub-heading for each section.
- Formal language must be used. You are writing a scientific poster, so you should get straight to the point and never write in the first person. You must use third person and past tense throughout the report. I.e. Don’t include ‘I’, ‘We’, ‘They’ etc. The language should be ‘The experimenter asked...’ or ‘the participants were required to...’ etc.

There is a recommended template that will be given to you. You teacher will provide you with access to a digital copy through the appropriate means.

Your chosen investigation question is relatively restricted, as you are required to conduct research investigating Hemispheric Specialisation. Below is a list of suggested areas to focus your research:

- Short Term Memory
- Pattern Recognition
- Left- or Right-handedness
- Solving Maths problems
- Creativity
- Musical ability/Sense of Rhythm
- Reading Comprehension
- Time Orientation
- Facial Recognition
- Spatial Skills/Orientation
- Logical Thought
- Recognising Baby Speech
- Emotional Recognition
-Recognising Tunes

If you chose to investigate another topic that incorporated Hemispheric Specialisation, you must obtain approval from your teacher before conducting the research.

Goodluck,

Miss Smith, Ms Warner and Mr DeGrandi.
## CHECK LIST AND DUE DATES:

<table>
<thead>
<tr>
<th>Section</th>
<th>What does this include?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Introduction</strong></td>
<td>- Identify research question&lt;br&gt;- Summarise at least one relevant piece of previous research&lt;br&gt;- Identify and explain relevant terms and/or theories</td>
</tr>
<tr>
<td><strong>Objectives</strong></td>
<td>- Develop and aim&lt;br&gt;- Formulate a hypothesis&lt;br&gt;- Identify and operationalise the IV and DV</td>
</tr>
<tr>
<td><strong>Methodology</strong></td>
<td>- Select appropriate sampling method&lt;br&gt;- List the details of your population</td>
</tr>
<tr>
<td><strong>Methodology</strong></td>
<td>- Select and identify the necessary equipment&lt;br&gt;- Identify and design the necessary material</td>
</tr>
<tr>
<td><strong>Methodology</strong></td>
<td>- Choose the appropriate experimental design: Independent groups, matched participants or repeated measures&lt;br&gt;- Select appropriate allocation method and identify experimental groupings&lt;br&gt;- Provide a detailed outline of the steps involved so that the study can be replicated in the future</td>
</tr>
<tr>
<td><strong>Ethical</strong></td>
<td>- Identify and explain how relevant ethical principles have been considered: Role of the experimenter and participants’ rights (confidentiality, voluntary participation, withdrawal rights, informed consent, use of deception and debriefing).</td>
</tr>
<tr>
<td><strong>Results</strong></td>
<td>- Systematically collect, record and summarise data (qualitative and/or quantitative)&lt;br&gt;- Calculations of statistics, if necessary. <strong>Raw data must be scanned into the logbook or submitted in hardcopy format by the due date.</strong></td>
</tr>
<tr>
<td><strong>Discussion</strong></td>
<td>- Analyse and explain the data collated in the investigation.&lt;br&gt;- Evaluate procedures by identifying sources of error (e.g. EV/CVs) and discussing any limitations of the data, including practical suggestions for improvements to the experimental design and possible further investigations.&lt;br&gt;- Communicate a valid conclusion that relates data to the hypothesis and/or aim and that provides a justified response to the investigation question.&lt;br&gt;- Explain the link between investigation findings and relevant scientific concepts and past research.&lt;br&gt;- Analyse the reliability and validity of the results in the addition of precision and accuracy&lt;br&gt;- Analyse the generalisability of the results to the population of interest&lt;br&gt;- Propose implications of the results for the population of interest.</td>
</tr>
<tr>
<td><strong>References and Appendices</strong></td>
<td>- Relevant and consistent use of referencing</td>
</tr>
</tbody>
</table>

The final due date for this task is Friday 7th of September and all submissions must be made through the Google Classroom page.
PART 1: TITLE
1. Which question are you investigating?

PART 2: INTRODUCTION
2. What key topics and subtopics do you need to discuss to show knowledge of the topic content? List any relevant terms or theories below and define/describe them. Be sure to record the details you need to reference the source(s) you have used.

3. Conduct a background search and find at least one relevant piece of previous research.

In the box below you should write a summary of the past research and the referencing details for this research. Be sure to reference in the format that has been presented to you on p.4 of this booklet.

PART 2: OBJECTIVES
4. What is the aim of your current investigation? I.e. what are you setting out to investigate?

The aim of the current study is to investigate...

5. What is the simple independent variable?

6. What is the simple dependent variable?

You now need to operationalise your variables so that they are testable.

7. The operationalised independent variable in this study will be
8. The operationalised dependent variable in this study will be __________.

9. Determine the “direction” of the variables i.e. Will changes in the IV increase/decrease the DV? __________.

10. Decide upon the population from which to draw your sample for the study? This will be largely determined by factors such as availability, demographic (age, gender etc.) as well as the research question itself. __________.

11. Now, formulate a research hypothesis for your research question. 

   It was hypothesised that...

PART 3: METHODOLOGY

Participants

12. List the details of the sample you intend to investigate. E.g. total number, number of males/females, age range, where they are from, how you will find them etc. __________.

13. Describe how will this Sample be chosen? (eg. Random Sample, Convenience Sample, Stratified Sample etc.). Also why have you used this method of sampling? What are the benefits? Are there any potential problems that could arise as a result of this sampling technique? __________.

Materials

14. Identify the equipment/materials you will need to conduct your study and list them below (remember to include appendices such as word lists etc.) __________.
Procedure

15. Choose an appropriate experimental design and explain why you chose this method. What are the benefits? Are there any potential problems that could arise due to this type of experimental design?

16. Identify which is the Experimental and Control Condition(s), outlining specifically the tasks applied to each

Experimental Condition:
Control Condition:

17. What method did you apply in allocating your sample into either the experimental or control groups? (eg. random allocation)

18. Write a step-by-step description of how you carried out your study so it can be replicated in the future. Be sure to include any specific timing, locations or observational procedures.

PART 4: ETHICAL CONSIDERATIONS

10. Before you start collecting your data you must consider all ethical guidelines and principles. List any relevant ethical considerations below and state how you plan to adhere to each during your experiment.

PART 5: POTENTIAL EXTRANEOUS/CONFOUNDING VARIABLES

11. It is important before you begin your investigation that you consider any factors that could become extraneous or confounding variables. It is essential to eliminate as many of these variables as possible so you results are reliable.
Identify two potential extraneous/confounding variables in your study, their potential effect on the operationalised DV and how you will try to prevent them from occurring (i.e. you may need to adjust your procedure if appropriate).

**Extraneous/confounding variable 1:**

**Extraneous/confounding variable 2:**

**PART 6: RESULTS**

12. Now you are ready to collect your data. Remember to:
   - **Record** the age and gender of your participants:

<p>| |</p>
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

   b. **Keep** all question sheets, handouts etc in order to submit them as appendices with your poster.
   c. **Keep** all of your raw scores (you will need to submit it to your teacher as appendices)

13. It is now time to use any appropriate descriptive statistics to summarise and organise your data. You could use percentages, means, medians or modes. You may also like to sketch a graph or table of your results to use in your poster.

   **Calculations:**

<p>| |</p>
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

   **Graphs/Tables:**

<p>| |</p>
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

**PART 7: DISCUSSION**

14. **Interpret** your results/findings by linking them back to the aim, hypothesis, previous research, and any relevant concepts you will address in your introduction. Remember to use words such as ‘suggests’ or ‘indicates’ rather than ‘proves.’

<p>| |</p>
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

15. Now communicate a conclusion that relates your findings to the hypothesis/aim. Has it been supported or rejected?
16. Explain the link between findings of your investigation and any relevant previous scientific research (mentioned in your introduction). Do the above findings support those of the previous research? Refute these previous findings? What could have influenced this link?

17. Now begin the evaluation process by identifying any sources of error. This could include:
   ○ Any choices you made in relation to: Sampling technique, allocation methods, research design, use of standardised instructions/procedures.
   ○ Be sure to identify and explain specific EVs/CVs and the effect they had on the operationalised DV.

18. Can your results can be generalised to the population of interest:
   ○ Consider sampling method and sample size to determine if your sample is representative of the population.

19. Now make some practical suggestions for improvements and suggest any further investigations or replications that could be conducted.

PART 8: CONCLUSION

20. Does the data generated by the investigation suggest that the presence of the Independent Variable has a significant influence on the Dependent Variable? Use the quantitative and/or qualitative data itself to support your claim.
21. In one sentence, state whether the hypothesis has been supported or refuted by your findings.

PART 9: REFERENCES
22. Remember to reference any source you use. Within the body of the research investigation you should include (Surname, Year) every time you refer to information taken from a published source. List your references here, using the APA format found in your textbook.

ANY ADDITIONAL NOTES OR ANALYSIS