

## Science Inquiry Skills

The current Stage 1 Psychology course (which has been taught for the last time in 2020) has a topic called *Introduction to Psychology*. This topic has been compulsory for all students who undertake the current course. *Introduction to Psychology* has been taught as a stand-alone topic or embedded into the other topics taught.

The renewed 2021 Stage 1 Psychology course requires students to develop *Science Inquiry Skills*. These skills are intended to be taught within the other topics, allowing the development of the skills to be undertaken in contexts that are appropriate to the skill being developed. In Psychology, inquiry is an integral part of the learning and understanding of concepts. Activities could involve a range of both individual and collaborative inquiry.

The table provides examples of some ways specific *Science Inquiry Skills* could be embedded into topics.

Topic 1: Cognitive Psychology		
Science Inquiry Skills	Science Understanding	How to embed
<p>Ethical practice is an integral aspect of psychology.</p> <ul style="list-style-type: none"> <li>• Discuss how the following have/have not been demonstrated in research or treatment:               <ol style="list-style-type: none"> <li>(a) respect for the dignity and well-being of individuals</li> <li>(b) informing individuals of the nature and purpose of the research/treatment and of any physical or psychological effects that may be expected</li> <li>(c) obtaining voluntary consent from individuals or from their parents or legal guardians</li> <li>(d) protecting any personal information acquired</li> <li>(e) using data only for the purpose for which consent has been obtained</li> <li>(f) respecting the privacy of personal information that is disclosed</li> <li>(g) respecting the right of individuals not to participate in or to withdraw from research/treatment at any time without explanation and without reprisal</li> <li>(h) informing individuals of the results and conclusions of the research.</li> </ol> </li> </ul>	<p>Forgetting information from short-term memory (STM) or long-term memory (LTM) can be explained by various reasons (displacement, decay, interference).</p>	<p>Discuss ethical practices of cognitive psychology studies by:</p> <ul style="list-style-type: none"> <li>• exploring Baddeley's 1975 experiment on context cues</li> <li>• comparing and contrasting the works of Reijmers et al. (2007) and Duncan (1949) on consolidation theory.</li> </ul> <p>Should these types of experiments be conducted? Are there alternative ways of finding out information about memory formation?</p>

<p>Investigations in Psychology can be experimental, observational, or qualitative. In experimental investigations, the investigator examines behaviour by manipulating the independent variable. In observational investigations, the investigator collects data in a natural setting by means of behavioural observations or self-report methods.</p>		<p>Referring to the research of Reijmers et al. (2007) and Duncan (1949), students:</p> <ul style="list-style-type: none"> <li>determine whether the investigations were experimental, observational, or qualitative</li> <li>discuss advantages and disadvantages of each type of investigation.</li> </ul>
<p>The researcher interprets raw data that may be objective or subjective, quantitative or qualitative.</p> <ul style="list-style-type: none"> <li>Identify some advantages and disadvantages of using these types of data.</li> </ul> <p>Results of investigations are presented in a well-organised way to allow them to be readily interpreted.</p> <ul style="list-style-type: none"> <li>Present results of investigations in appropriate ways, such as: <ul style="list-style-type: none"> <li>(a) construction of appropriately labelled tables</li> <li>(b) drawing of appropriately labelled graphs.</li> </ul> </li> </ul>	<p>Forgetting information from short-term memory (STM) can be explained.</p> <ul style="list-style-type: none"> <li>Use the theory of displacement to explain the forgetting of information from short-term memory.</li> </ul>	<p>Students complete the serial position experiment (which can be found at <a href="http://faculty.washington.edu/chudler/chmemory.html">http://faculty.washington.edu/chudler/chmemory.html</a>) and:</p> <ul style="list-style-type: none"> <li>discuss how the results may be used as evidence for the displacement theory of forgetting</li> <li>identify some advantages and disadvantages of using objective data.</li> <li>present their results by drawing an appropriately labelled graph.</li> </ul>
<p>Analysis of the results of investigations allows them to be interpreted in a meaningful way.</p> <ul style="list-style-type: none"> <li>Analyse data, including: <ul style="list-style-type: none"> <li>(a) identification and discussion of trends, patterns, and correlations</li> <li>(b) the appropriate use of descriptive statistics (means, medians, standard deviations)</li> <li>(c) calculation of mean and median for quantitative data sets.</li> </ul> </li> </ul>	<p>In the modal model of memory, memory consists of three stores: a sensory register, short-term memory (STM) and long-term memory (LTM).</p> <ul style="list-style-type: none"> <li>Describe how each store has its own characteristics in terms of capacity and duration.</li> </ul>	<p>Students either:</p> <ul style="list-style-type: none"> <li>Research the modal model of memory and the capacity and duration of each store.</li> </ul> <p>or</p> <ul style="list-style-type: none"> <li>Conduct in-class activities to test the capacity and duration of the sensory register and STM.</li> <li>Using the data collected, analyse the results and develop a meaningful conclusion.</li> </ul>
<p>Critical evaluation of procedures and data can determine the meaningfulness of the results.</p> <ul style="list-style-type: none"> <li>Evaluate the reliability and validity of data.</li> <li>Discuss how the following could affect the data obtained in an investigation: <ul style="list-style-type: none"> <li>sample size</li> <li>representativeness of sample.</li> </ul> </li> </ul>	<p>Social issues sometimes arise from faulty memories.</p> <ul style="list-style-type: none"> <li>Explain how inaccurate eyewitness testimony can lead to false convictions. Factors to be considered include: <ul style="list-style-type: none"> <li>leading questions schema</li> <li>selective attention</li> <li>confirmation bias</li> <li>similarity factors.</li> </ul> </li> </ul>	<p>Conduct the <i>Eyewitness Game</i> at <a href="http://faculty.washington.edu/chudler/chmemory.html">http://faculty.washington.edu/chudler/chmemory.html</a></p> <p>Students record details that can be remembered. They then:</p> <ul style="list-style-type: none"> <li>evaluate the reliability and validity of the data</li> <li>discuss how sample size and representativeness of the sample could have affected the data.</li> </ul>
<p>Conclusions can be formed that relate to the hypothesis or inquiry question.</p> <ul style="list-style-type: none"> <li>Select and use evidence and scientific understanding to make and justify conclusions.</li> </ul>	<p>The accuracy of eyewitness testimony could be addressed in a number of ways.</p> <ul style="list-style-type: none"> <li>Explain the value of the person conducting a line-up or photospread being "blind" to</li> </ul>	<p>Students investigate how the accuracy of eyewitness testimony can be improved.</p> <p>Students evaluate investigations that have been conducted on eyewitness testimony.</p>

<ul style="list-style-type: none"> <li>• Explain the limitations of conclusions.</li> <li>• Explain why the results of some investigations may not lead to definitive conclusions.</li> </ul>	<p>which member of the line-up or photospread is the suspect.</p> <ul style="list-style-type: none"> <li>• Explain why the suspect should not stand out in the line-up or photospread.</li> </ul> <p>Describe how cognitive interviews are used, and explain their value.</p>	
<b>Topic 4: Emotion</b>		
Science Inquiry Skills	Science Understanding	How to embed
<p>The researcher interprets raw data that may be objective or subjective, quantitative or qualitative.</p> <ul style="list-style-type: none"> <li>• Identify some advantages and disadvantages of using these types of data.</li> </ul>	<p>Whilst there are different theories about how emotion is experienced, psychologists agree that emotions are subjective experiences that are made up of the same three components:</p> <ul style="list-style-type: none"> <li>• physiological responses</li> <li>• subjective feelings</li> <li>• expressive behaviour.</li> </ul>	<p>Different methods are used to measure each component producing objective or subjective data, quantitative or qualitative.</p> <ul style="list-style-type: none"> <li>• Students evaluate some advantages and disadvantages of different types of data.</li> </ul>
<p>Investigations in Psychology can be experimental, observational, or qualitative. In experimental investigations, the investigator examines behaviour by manipulating the independent variable. In observational investigations, the investigator collects data in a natural setting by means of behavioural observations or self-report methods. Qualitative investigations may use focus groups or the Delphi technique to generate data.</p> <ul style="list-style-type: none"> <li>• Identify an investigation as experimental, observational, or qualitative.</li> <li>• Discuss advantages and disadvantages of each type of investigation.</li> </ul>	<p>Culture can affect the way in which people display and interpret emotion. Despite different emotional display rules, our ability to recognise and produce most facial expressions of basic emotions appears to be universal.</p>	<p>Students:</p> <ul style="list-style-type: none"> <li>• find out how Paul Ekman conducted his research on emotions</li> <li>• working in small groups, with copies of the <i>Science Inquiry Skills</i>, they: <ul style="list-style-type: none"> <li>– analyse Ekman’s investigation and list the skills from the <i>Science Inquiry Skills</i> that can be identified in the information provided on the methodology Ekman used.</li> <li>– describe the type of investigation used and its advantages and disadvantages</li> <li>– describe how a researcher could conduct a qualitative design to investigate emotions</li> <li>– discuss the advantages and disadvantages of each type of investigation.</li> </ul> </li> </ul>
<p>Ethical practice is an integral aspect of psychology.</p>		<p>Students identify specific ethical issues relevant to Ekman’s research and/or other research on emotion.</p>
<p>Psychology uses a biopsychosocial approach to frame an understanding of behaviour, that is, behaviour is analysed and described in terms of biological, psychological and sociocultural factors.</p>	<p>Whilst there are different theories about how emotion is experienced, psychologists agree that emotions are subjective experiences that are made up of the same three components:</p> <ul style="list-style-type: none"> <li>• physiological responses</li> <li>• subjective feelings</li> </ul>	<p>Students select a character in a film experiencing an extreme emotion. They:</p> <ul style="list-style-type: none"> <li>• explain the emotion using the biopsychosocial approach</li> <li>• describe how the biopsychosocial approach could be used to develop</li> </ul>

<ul style="list-style-type: none"> <li>• Explain how biological, psychological, and social factors could determine the cause and expression of certain psychological phenomena.</li> <li>• Explain how biological, psychological, and sociocultural factors could influence solutions to problematic psychological phenomena.</li> </ul>	<ul style="list-style-type: none"> <li>• expressive behaviour.</li> </ul>	<p>improved understanding of treatment.</p>
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