



Chief Reader Report on Student Responses: 2023 AP[®] Psychology Set 1 Free-Response Questions

• Number of Students Scored	321,329		
• Number of Readers	710		
• Score Distribution	Exam Score	N	%At
	5	54,302	16.90
	4	74,529	23.19
	3	62,707	19.51
	2	39,734	12.37
	1	90,057	28.03
• Global Mean	2.89		

The following comments on the 2023 free-response questions for AP[®] Psychology were written by the Chief Reader, Elliott Hammer, Professor of Psychology at Xavier University of Louisiana. They give an overview of each free-response question and of how students performed on the question, including typical student errors. General comments regarding the skills and content that students frequently have the most problems with are included. Some suggestions for improving student preparation in these areas are also provided. Teachers are encouraged to attend a College Board workshop to learn strategies for improving student performance in specific areas.

Question 1

Task: Apply psychological concepts to a scenario described in the prompt

Topic: Concept Application

Max Score: 7

Mean Score: 2.31

What were the responses to this question expected to demonstrate?

Responses to this question were expected to demonstrate how specific psychological concepts applied to the scenario. The responses needed to demonstrate an understanding of soundwave amplitude, procedural memory, diffusion of responsibility, dispositional attribution, ghrelin, authoritarian parenting style, and the Big Five trait of neuroticism.

How well did the responses address the course content related to this question? How well did the responses integrate the skills required on this question?

Responses demonstrated an understanding of soundwave amplitude, procedural memory, diffusion of responsibility, dispositional attribution, ghrelin, authoritarian parenting style, and the Big Five trait of neuroticism when students accurately applied these concepts to the scenario described in the prompt.

Responses earned points by, for example, clearly showing the relationship between high amplitude and loudness, as well as demonstrating an understanding that procedural memory is not explicit. Responses also earned points by accurately describing the role of ghrelin in hunger in the scenario and by distinguishing neuroticism from normal frustration. Responses needed to apply the concepts to the scenario and go beyond providing an accurate definition.

What common student misconceptions or gaps in knowledge were seen in the responses to this question?

Commonly missed points in this question included the misidentification of how the height of a soundwave determines loudness. In addition, responses frequently did not demonstrate an understanding of procedural memory as remembering how to perform a physical action (e.g., Steve cooking breakfast in the scenario) that occurs without conscious attention.

Responses often did not show how the children did not clean the broken lamp because they assumed someone else would do it, thereby diffusing responsibility, or how a behavior in the scenario could be explained by focusing on internal factors (e.g., personality traits). Responses frequently did not describe how a characteristic of the neuroticism trait influenced Steve's behavior in the scenario.

<i>Common Misconceptions/Knowledge Gaps</i>	<i>Responses that Demonstrate Understanding</i>
<ul style="list-style-type: none">Responses often described an incorrect relationship between amplitude and loudness in the scenario.	<ul style="list-style-type: none">“The higher the wave, the louder the sound. Here, when Steve hears the loud crash of the lamp, the high amplitude allows for the sound to be stronger, which allows Steve to hear it from the other room.”

<ul style="list-style-type: none"> • Responses frequently did not describe how someone in the scenario remembers how to physically do something without paying conscious attention to doing so. 	<ul style="list-style-type: none"> • “Procedural memory is a type of implicit memory in which people are able to recall how to perform a task. Since Steve is cooking breakfast, remembering how to flip an egg may be a procedural memory, meaning that flipping an egg is a task that he has done so many times that he automatically knows how to repeat it without conscious effort.”
<ul style="list-style-type: none"> • Responses frequently did not demonstrate understanding of how the children do not attempt to clean the broken lamp because they assume that someone else will do it. 	<ul style="list-style-type: none"> • “Diffusion of responsibility is when people do not take responsibility when other people are present, or they believe others will do it instead. The children therefore may have heard the crash, but each thought the other three will clean it up instead, so they all sat there and did nothing.”
<ul style="list-style-type: none"> • Responses frequently did not describe how an internal factor was used to explain someone’s behavior in the scenario. 	<ul style="list-style-type: none"> • “Dispositional attribution is when you credit someone’s actions to their personality. He may think that they didn’t clean it up because they are lazy and uncaring people, rather than because of situational factors.”
<ul style="list-style-type: none"> • Responses often did not describe how an enduring characteristic of the trait of neuroticism related to Steve’s behavior in the scenario. 	<ul style="list-style-type: none"> • “Steve’s high level of the Big Five trait of neuroticism reveals how he is easily irritated and easily susceptible to mood swings. He was happy before the lamp broke, but remained irritable for the rest of the day.”

Based on your experience at the AP[®] Reading with student responses, what advice would you offer teachers to help them improve the student performance on the exam?

- When teaching how psychological concepts apply to specific scenarios and real-world examples, ask students to use the key parts of the definition when applying those parts to different examples. Encourage students to address each part of the definition in their application, ensuring that students link the concepts to the outcomes of the particular scenario in the FRQ.
- Spend time helping students find ways to differentiate between commonly confused concepts.
- During the course, encourage students to apply the terms to novel situations and to do more than simply define terms. In every course unit, assign students work that allows them to practice this skill.
- Students should have a time limit to prepare for the actual AP testing environment.
- To help clarify which concept the students are addressing, encourage them to identify the concepts and complete their responses in the order listed in the prompt. Please have them format responses into paragraphs to differentiate among the concepts. It is challenging to distinguish between concepts

when students write a single paragraph containing all seven concepts rather than writing seven distinct paragraphs that each address a singular concept.

What resources would you recommend to teachers to better prepare their students for the content and skill(s) required on this question?

Teachers can use sample FRQs in AP Classroom to help teach students how to write responses to the Concept Application FRQs on the AP Exam. Having students write at least one Concept Application FRQ for each unit will help them develop responding skills over time and for terms across the course. AP Daily videos also provide tips to students on how to write FRQ responses and how to differentiate between commonly confused terms.

Question 2

Task: Apply research design concepts to a scenario described in the prompt

Topic: Research Design

Max Score: 7

Mean Score: 3.24

What were the responses to this question expected to demonstrate?

Responses to this question were expected to demonstrate an understanding of various characteristics of an experimental research study and to show how specific psychological terminology applied to the scenario. The responses needed to demonstrate an understanding of the features of a true experiment, a dependent variable, a measure of central tendency (i.e., the mean), and confounding variables. Additionally, responses were expected to apply the halo effect, industrial/organizational psychology, and positive reinforcement to the scenario.

How well did the responses address the course content related to this question? How well did the responses integrate the skills required on this question?

Responses demonstrated an understanding of experimental design; statistics; cognition, a subfield within psychology; and operant conditioning when students accurately applied these concepts to the scenario described in the prompt.

Responses earned points by clearly applying the concepts of random assignment or manipulation of a variable, a dependent variable, the arithmetic mean, and confounds related to a hypothetical study described in the prompt.

Responses also earned points by clearly applying conceptual concepts of the halo effect, the functions of an industrial/organizational psychologist, and positive reinforcement.

What common student misconceptions or gaps in knowledge were seen in the responses to this question?

Commonly missed points in the research design part of this question included the misidentification of features of a true experiment, with responses often referring to random selection, control groups, or a small sample size rather than to manipulation of a variable or random assignment. In addition, responses frequently did not explain how a confounding variable like store location affected the dependent variable, which was the number of cars sold.

Regarding the conceptual concepts in the question, if responses regularly failed to explain how Michael's good friendship with one of the store managers led him to question or discount the accuracy of the store's poor sales data (halo effect).

Frequently, responses also failed to explain how an industrial/organizational psychologist works to improve performance or solve workplace problems, which would help optimize the sale of electric cars.

Finally, responses often did not explain how Michael can be rewarded for working on the presentation to increase the likelihood that he will continue working so that he submits his presentation on time (positive reinforcement).

<i>Common Misconceptions/Knowledge Gaps</i>	<i>Responses that Demonstrate Understanding</i>
<ul style="list-style-type: none"> Distinguishing features of a true experiment often were misidentified as random selection, the presence of a control group, or sufficient sample size. 	<ul style="list-style-type: none"> “This study is not an experiment because Michael is simply reporting information on variables, rather than manipulating them. An experiment requires a variable to be manipulated or changed in order to determine its impact, and that is not what he did.”
<ul style="list-style-type: none"> The influence of the confounding variable (i.e., store location) often was not described in the context of the implied dependent variable or the number of electric cars sold. 	<ul style="list-style-type: none"> “The location of the store could drastically influence the number of electric cars sold because a store in a city is going to have more sales than a store in a small town. That’s because there are more people looking to buy cars in a city than in a small town.”
<ul style="list-style-type: none"> Responses frequently did not demonstrate how Michael’s interpretation of Store C’s data could be influenced by the halo effect created by his good friendship with Store C’s manager. 	<ul style="list-style-type: none"> “Because Michael is good friends with the manager of Store C, his good impression of his friend might cause Michael to interpret Store C’s sales data more positively than it really is, even though Store C clearly lags behind compared to Stores A and B.”
<ul style="list-style-type: none"> Responses frequently did not describe how industrial/organizational psychologists work to optimize performance or to solve workplace problems, which would be helpful to Michael as he tries to understand the potential relationship between management style and car sales. 	<ul style="list-style-type: none"> “Industrial/organizational psychologists focus purely on how the setup of management impacts an industry’s performance, so hiring these types of psychologists to find which management styles prove for optimal store performance was the wise choice.”
<ul style="list-style-type: none"> Responses often did not describe how Michael rewards himself for working on his presentation, and the reward increases the likelihood that he will continue working so that his presentation is submitted on time. 	<ul style="list-style-type: none"> “Michael finds making presentations extremely boring however he utilizes positive reinforcement to increase his own desired behavior by watching one short episode of his favorite cartoon each time he finishes a slide of his presentation, he works on the presentation more often and is able to finish the presentation well before the deadline.”

Based on your experience at the AP[®] Reading with student responses, what advice would you offer teachers to help them improve the student performance on the exam?

- To help students respond more accurately, teachers could emphasize the characteristics of experimental methods in contrast to nonexperimental methods, specifically emphasizing the

importance of manipulating a variable to make it an independent variable and random assignment to eliminate the influence of confounding variables on dependent variables.

- Teachers could also stress to students the importance of responding specifically to the prompt with a complete description of each concept in context, so the application of the response is clear.
- Please have students format responses into paragraphs to differentiate among the concepts. It is challenging to distinguish between concepts when students write a single paragraph containing all seven concepts rather than writing seven distinct paragraphs that each address a singular concept.

What resources would you recommend to teachers to better prepare their students for the content and skill(s) required on this question?

Teachers can use sample FRQs in AP Classroom to help teach students how to write responses to the Research Design FRQs on the AP Exam. Having students write at least one Research Design FRQ for each unit will help them develop responding skills over time and for terms across the course. AP Daily videos also provide tips to students on how to write FRQ responses and how to differentiate among commonly confused terms.