

ASSIGNMENT INSTRUCTIONS PART 1:

After reading Josh Parker's discussion post, write a response to Josh's Discussion Post. In your response, comment on Josh's examples of inductive and deductive reasoning. Debate with Josh on whether his examples are examples of inductive or deductive reasoning and offer your reasoning for why. Remember to cite any references you use.

Here Josh Parker's Discussion Post:

Deductive Versus Inductive

The educational setting calls for students to utilize reasoning throughout their experiences within the classroom and beyond daily. Two types of reasoning that exist within this setting are deductive and inductive, both of which play a vital role in students' understanding and application of knowledge across a wide spectrum of content areas.

Anderson (2020) postulates that deductive reasoning results from concrete conclusions based upon a specified premise, while inductive reasoning is based on the probability of an event or outcome occurring based on current knowledge. Stephens et al. (2020) takes this ideology one step further utilizing a study involving students in a math class and how these various types of reasoning can affect learning.

Within a subject area such as math, proficient problem-solving skills correlate to a higher likelihood of success and in turn the ability to effectively reason. Stephens et al. (2020) also note that when students implement inductive reasoning, they can better uncover patterns related to various mathematical problems and describe how these patterns create rules for the pattern. Oppositely, deductive reasoning allows for the students to make predictions, reason,

and determine whether the proposed concept is true or false for the problem presented (Stephens et al., 2020).

Both deductive and inductive reasoning allow for students to assess the validity of a problem presented utilizing not only their current level of knowledge, but also their intuition. Students can apply this knowledge to the concept(s) presented and determine the best possible pathway to arrive at the desired conclusion or answer. A subject area such as mathematics requires both forms of reasoning as well as applying rules such as solving equations in parentheses before moving forward with the rest of the problem. When exploring a topic such as a debate, both concrete information is required as well as logic. The concrete information allows for individuals to have laws, processes, or prior cases to back up or strengthen their argument whereas intuition or thinking allow for new insights to be explored. In mathematics, deductive reasoning is the preferred method of solving problems through the utilization of concrete rules for arriving at the correct answer. When students are engaged in a debate, inductive reasoning would be more appropriate due to the requirement for discussion, thinking outside of the box and utilizing prior information to determine future outcomes. Using both methods of reasoning are important and essential for solving problems, but should be applied appropriately given the circumstances of both the problem at hand and the expected outcomes.

References

- Anderson, J. R. (2020). *Cognitive psychology and its implications*. (9th ed.). Macmillan learning.
- Stephens, R. G., Dunn, J. C., Hayes, B. K., & Kalish, M. L. (2020). A test of two processes: The effect of training on deductive and inductive reasoning. *Cognition*, 199, 104223.

ASSIGNMENT INSTRUCTIONS PART 2: After reading Jackie Smith's discussion post, write a response to Jackie's Discussion Post. In your response, comment on Jackie's examples of inductive and deductive reasoning. Debate with Jackie on whether her examples are examples of inductive or deductive reasoning and offer your reasoning for why. Remember to cite any references you use.

Here is Jackie's Discussion Post:

Deductive reasoning pertains to ascertainment based on assurance with proof (Anderson, 2020; Stephens et al., 2018). For example, if we are cognizant that "cats have some property X" and that "all Persians are cats" then fundamentally, we surmise that Persian cats have some property X" (Stephens, 2018). Inductive reasoning differs from deductive reasoning in that it pertains to ascertainments based on probability based on previous knowledge (Anderson, 2020; Stephens et al., 2018). For example, if we are cognizant that "Persian cats have property X" then we can assume that property X is also found in other breeds of cats even though it is not rationally convincing (Stephens, 2018). Anderson (2020) describes inference using the Latin translation "*modus ponens*" which translates to "method of affirming" (p.318), and "*modus tollens*" which translates to "method of denying" (p.319). Which basically means that if the statement is true, we can conclude that the consequent is true (modus ponens) and if the statement is not true, we can conclude that the consequent is not true (modus tollens) (Anderson, 2020). Similarities between deductive and inductive reasoning include the fact that both forms of reasoning are seeking a conclusion using the same acquired facts (Heit & Rotello, 2010) even though they try to find the conclusion from different perspectives.

Situational Conclusions

I feel there are some conclusions where both deductive and inductive reasoning can reach similar conclusions. Doctors and Scientists use deductive reasoning (proof) to come to conclusions in medicine and proving hypotheses respectively. Doctors also must use inductive reasoning (previous knowledge through experience) to come to similar conclusions when it comes to the care of their patients.

More Scientific: Deductive or Inductive?

Deductive reasoning uses a more scientific approach according to Stephens et al (2018). They imply that individuals utilize inductive reasoning in day to day living decisions, but deductive reasoning is utilized during the search for solid answers with proof.

Thank you in advance for your comments and suggestions.

Jackie

References

Anderson, J. R. (2020). *Cognitive Psychology and its Implications*, 9th Ed. New York: Worth Publishers.

Heit, E., & Rotello, C. M. (2010). Relations between inductive reasoning and deductive reasoning. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 36(3), 805–812.

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