

2. Research in Psychology

Objectives

- Explain the use of the scientific method in psychology
- Describe the various factors involved in designing and choosing a method of research
- Understand the important approaches in gathering and processing data
- Examine the ethical standards and issues involved in the field of psychology

Vocabulary

bias	hypothesis	median	standard deviation
correlation	inductive thinking	mode	theory
deductive thinking	mean	paradigm	variable

Background

When psychologists wish to study or find answers to their questions about human behavior, they have traditionally used the scientific method. The strict methodology and principles of this approach have enabled researchers to achieve greater and more accurate knowledge in their studies of the various and seemingly immeasurable ways that people are alike and different.

Students learn to refine their own thinking processes and to more accurately evaluate scientific data as a result of studying how the scientific method works. In general, researchers first form questions or hypotheses to be tested in well-designed experiments where participants are carefully selected, and variables and biases are identified and controlled. Students see that once the data has been scientifically tested, it can be gathered through various means—such as surveys, interviews, naturalistic observation, laboratory experiments, field studies, and/or various physiological measurement tools. Researchers also have numerous ways of processing the data, which will ultimately enable them to make either correlations or graphical representations of results and to draw meaningful conclusions about their work.

This chapter outlines some of the most important ethical issues involved in research in psychology. Debating these issues may awaken students' social consciousness. Since psychological research does behavioral testing of living beings, formulation of ethical policies and standards has been necessary. Students should inform themselves about the sensitive issues involved in the assessment of risk and benefit in research, the need to avoid deception of and harm to participants, and other moral and confidentiality standards. They also will benefit from learning about the controversial issues surrounding the treatment of animals in research.

Further Resources

- Christensen, Larry B. *Experimental Methodology*. Needham Heights, Mass.: Allyn & Bacon, 1991.
- Buchanan, Nina and John Feldhusen, eds. *Conducting Research and Evaluation in Gifted Children*. New York: Teachers College Press, 1991.

For Discussion

Review

1. What is the difference between inductive thinking and deductive thinking in theory development?
2. What are the three potential types of bias in research?
3. What are the six key steps involved in “the scientific approach to research”?
4. What are five kinds of studies that may be used in psychological research?

Critical Thinking

1. Why do psychologists take a “scientific” approach to understanding behavior?
2. Why do scientists have to be careful in their research and use of the scientific method?
3. Consider the hypothesis, “practice improves performance on video games.” What are some of the dependent and independent variables in testing this theory?
4. Of the various research methods in gathering data, which do you think offers the most accurate data? Why?
5. Why is ethical conduct important in psychology and research?

Activities

1. Surveys

Divide students into large teams. Challenge each team to develop a ten-question survey of yes-no answers that would help gather data about a hypothesis they wish to test. Some team members can design the survey, others can obtain results, and a third group can compile results. Teams should compare their processes and problems.

2. Debate: Ethics in Psychology

Divide students into five teams. Each team chooses, researches, and prepares pro and con arguments about a particular ethical issue in psychology. Have each team stage a debate for the rest of the class.

3. Internet: Animal Research

Direct students to research Web sites presenting research on animals in natural habitats—such as the work of Jane Goodall—or other animal research taking place in zoos. Encourage them to report on any unique experiments or methodologies that they discover.

4. Special Sources: Psychology Research

Ask students to research psychology publications to find experiments whose hypotheses interest them. Have them report to the class.

Name _____

2. Research in Psychology

As you read Chapter 2, write an answer to each question below.

1. What is the "scientific method" used in psychology?

2. What are some things that scientists need to keep in mind concerning bias in research?

3. What is involved in the designing of research?

4. What are the different ways of gathering data?

5. In the processing of data, what is the difference between the correlational approach and graphs and statistics analysis?

Name _____

2. Research in Psychology

Find the best answer for each item. Then circle that answer.

1. What do you call a statement of underlying principles used to explain and predict some aspect of nature?
 - a. correlation
 - b. theory
 - c. paradigm
 - d. ethics
2. Which is something a researcher believes to be true?
 - a. hypothesis
 - b. variable
 - c. deduction
 - d. bias
3. What is inductive thinking?
 - a. a method of research
 - b. reasoning from a general principle to particular instances
 - c. reasoning from particular instances to a general principle
 - d. none of the above
4. Which term refers to a relationship between two variables?
 - a. tripartite
 - b. simplification
 - c. deviation
 - d. correlation
5. What does the term "standard deviation" mean?
 - a. how far from normal distribution a set of data falls
 - b. anything that can take on different values
 - c. the number of participants of a study
 - d. the distance between a study's mean and median
6. What is the most common value among a set of data?
 - a. mean
 - b. median
 - c. mode
 - d. method
7. What is the average or measure of "central tendency"?
 - a. mean
 - b. median
 - c. mode
 - d. method
8. What is the middle value of a set of data listed in order?
 - a. mean
 - b. median
 - c. mode
 - d. method
9. What is the condition or set of conditions that distorts data from what pure chance would have produced?
 - a. regularity
 - b. bias
 - c. containment
 - d. ethics
10. What is a paradigm?
 - a. a structure in northern Egypt
 - b. a world view under which clerics work
 - c. a set of beliefs about the scientific world
 - d. a set of conditions needed to accurately analyze results

Name _____

2. Research in Psychology

Read each description, and write the letter of the correct term on the line.

1. Theories rarely are proven true because _____.
 - a. science is inexact
 - b. psychological theories are too general
 - c. test results cannot be duplicated
 - d. one cannot test all possible situations
2. Applying general theories to specific situations is _____ thinking.
 - a. inductive
 - b. deductive
 - c. restrictive
 - d. intuitive
3. _____ is NOT a value or attitude that scientists share about their work.
 - a. Relying on careful observation
 - b. Relying on verification or duplication of research results
 - c. Feeling confident about conclusions
 - d. Recognizing that results are tentative
4. Researchers avoid bias in experiments by _____.
 - a. being aware of their own biases
 - b. having others review their work
 - c. disguising their identities to participants
 - d. all of the above
5. In participant selection, it's untrue that _____.
 - a. participants should represent the tested population
 - b. more participants bring more meaningful results
 - c. conclusions may apply to all populations
 - d. participant choice shouldn't involve bias
6. If participant and researcher are unaware of the study's purpose, this is a _____ study.
 - a. longitudinal
 - b. cross-sectional
 - c. blind/double blind
 - d. AB/ABA
7. _____ is NOT a method that behavioral psychologists commonly use to gather data.
 - a. Survey
 - b. Naturalistic observation
 - c. Laboratory experiment
 - d. Field study
8. This physiological measurement tool measures stress based on muscle tension: _____.
 - a. Galvanistic Skin Response (GSR)
 - b. Electromyograph (EMG)
 - c. Position Emission Tomography (PET)
 - d. Functional Magnetic Resonance Imaging (fMRI)
9. It is untrue regarding correlational studies that _____.
 - a. positive correlation does not mean causation
 - b. a theory's appropriateness should be assessed before a relationship can be proved, but not its direction
 - c. a relationship can be proved, but not its direction
 - d. a negative correlation implies strong causality
10. Deciding the ethical value of greater knowledge versus the value of protecting individual rights involves _____.
 - a. a confidentiality agreement
 - b. a risk/benefit assessment
 - c. an animal research policy
 - d. none of the above

Essay Question

Should animals be used in research? Why or why not? What restrictions, if any, do you feel should be enacted?