Chapter 2:
Choosing Topics and Methods for Research

DETAILED CHAPTER OUTLINE

I. Sources of Research Ideas
- A.) Using General Experience and Knowledge
  - 1.) Brainstorm
- B.) Using Prior Research Findings
- C.) Using Theories

II. Reviewing Relevant Literature
- A.) Research Design
- B.) Scholarly versus General Sources
- C.) Primary versus Secondary Sources
- D.) Books and Journals
  - 1.) Peer Reviewed Sources
  - 2.) Box 2.1: Content of a Research Report
    - a.) Abstract
    - b.) Introduction
    - c.) Method
      - 1) Participants/Subjects
      - 2) Apparatus or Materials
      - 3) Procedure
    - d.) Results
    - e.) Discussion
- E.) Abstracts and Electronic Databases
  - 1.) Psychological Abstracts
  - 2.) PsycINFO
  - 3.) PsychLIT
- F.) Other Electronic Databases
  - 1.) MEDLINE
  - 2.) ERIC
  - 3.) ABI/Inform
  - 4.) Web of Science/Social Science Citation Index
  - 5.) Lexis-Nexis
- G.) Online Materials
  - 1.) EBSCOhost
- H.) After You Identify Important Materials
  - 1.) Use Abstracts to Organize
  - 2.) Read the Introductions
  - 3.) Read the Discussions
  - 4.) Read the Method Sections

III. Forming Hypotheses and Choosing Methods
- A.) Formulating Scientific Hypotheses

1.) Explicit Predictions
2.) Testable and Falsifiable
3.) Clear Definitions
a.) Operational Definitions

B.) Matching Hypotheses with Strategies
1.) Experimental Strategies
a.) Criteria for Cause-Effect Conclusions:
1) Covariation of Variables
2) Causal Time Sequence
3) Elimination of Other Plausible Causes
2.) Nonexperimental Strategies
a.) Quasi-Experimental Strategy
b.) Correlational Strategy
c.) Descriptive Strategy

C.) Decisions about Subjects
1.) Populations
2.) Samples

D.) Decisions about Materials and Procedures

IV. Research Varieties
A.) Applied versus Basic Research
B.) Laboratory versus Field Research
1.) Mundane Realism
2.) Experimental Realism

C.) Will the Outcome Generalize?
1.) External Validity
a.) Generalizing Across Individuals
b.) Generalizing Across Situations and Time Periods
c.) Deciding How Far to Generalize
1) Continuity Assumption

V. Summary

MULTIPLE-CHOICE QUESTIONS

2-1) In studying the accuracy of eyewitness recall, Elizabeth Loftus (1975) used three sources of information in developing the idea to study the effects of misleading information on memory: 1) everyday experience and knowledge; 2) prior research findings; and 3)

a. existing theories.
b. governmental data.
c. case studies from the Internet.
d. mathematical modeling.

Answer: a (p. 38)

2-2) Dr. Tuttle decides to investigate the variable of violence in fan behavior following an ice hockey game. As a fan himself, Dr. Tuttle has seen many instances of such violence and is curious as to what triggers the aggressive behavior in fans. In this case, the source of the research idea appears to be based on

a. prior research findings.
b. existing theories.
c. everyday experience and knowledge.
d. none of the above

Answer: c (p. 36)

2-3) In relation to using everyday experience and knowledge in deriving ideas for research, _____ is defined as scanning the contents of memory for different categories of knowledge.

a. empiricism
b. brainstorming
c. intuition
d. hypothesizing

Answer: b (p. 37)

2.4) The textbook discusses using prior research findings in an effort to generate ideas for future research. In terms of science, what is the most typical use of such findings?

a. Researchers will often replicate previous studies exactly to ensure accuracy.
b. Researchers will often replicate part of an earlier study and add new variables to study.
c. Researchers will often ignore earlier research and design new studies that are entirely different from previous research.
d. Researchers will often accuse other researchers of unethical behavior and question the truthfulness and validity of their results.

Answer: b (p. 37)

2-5) By examining organized laws or principles about a certain phenomenon, researchers often make use of _____ in generating ideas for future research.

a. prior research findings
b. existing theories
c. everyday experience and knowledge
d. none of the above

Answer: b (p. 38)

2-6) Cognitive psychologists often use the personal computer as a metaphor to understand how human beings process information from the outside world. If such a researcher wanted to test whether or not human memory operates like a "hard drive" in a computer, the researcher would be using _____ to generate ideas for future research.

a. prior research findings.
b. everyday experience and knowledge.
c. existing theories.
d. none of the above

Answer: c (p. 38)

2-7) Tom is reading a periodical wherein he finds many advertisements for personal hygiene products and food items. Chances are, Tom is reading a _____ source.

a. scholarly
b. general
c. library
d. published

Answer: b (p. 39)

2-8) Professor Brentwood does research in the area of clinical psychology and often publishes his results in the *Journal of Clinical Psychology*. Most likely, this source would be considered a _____ one.

a. scholarly
b. general
d. popular
e. secondary

Answer: a (p. 39)

2-9) In terms of scholarly sources, a _____ source refers to an original, firsthand statement or description, while a _____ source refers to someone's interpretation of the original statement or description.

a. primary; secondary
b. primary; scholarly
c. secondary; primary
d. secondary; scholarly

Answer: a (p. 39)

2-10) A journal article that reports on the results of an original experiment would be considered a _____ source, while a book chapter that provides a summary of many different experiments would be classified as a _____ source.

a. secondary; primary
b. secondary; scholarly
c. primary; secondary
d. primary; scholarly

Answer: c (p. 39)

2-11) As a general rule-of-thumb, when gathering information for a research project, one should rely on _____ sources as much as possible.

a. general
b. popular
c. secondary
d. primary

Answer: d (p. 39)

2-12) Typically, a research report would be considered a _____ source, while a review article would be considered a _____ source.

a. primary; secondary
b. primary; scholarly
c. secondary; primary
d. secondary; scholarly

Answer: a (p. 39)

2-13) Professor Rodriguez has submitted an article for publication in a scholarly journal. As the first step in the publication process, the journal's editor has sent the article to various experts in the field. Most likely, this particular journal is a

a. low-quality source.
b. peer reviewed source.
c. general source.
d. secondary source.

Answer: b (p. 40)

2-14) The first section of a research report often presents a brief summary of the article's main points. This brief summary is referred to as the

a. reference page.
b. introduction.
c. abstract.
d. figure captions page.

Answer: c (p. 40)

2-15) The _____ of a research report provides an overview of the history of the phenomenon, specifies the logic of studying the topic, and provides a testable hypothesis for the current research.

a. reference page
b. results section
c. title page
d. introduction

Answer: d (p. 40)

2-16) In an APA-format journal article, the _____ section contains specific information about the study's participants, research design, relevant apparatus, and procedure.

a. method
b. results
c. discussion
d. reference

Answer: a (p. 41)

2-17) According to the current APA guidelines, _____ is the accepted term when referring to human beings being tested in the research, whereas _____ refers to the case when non-human animals are being tested.

a. volunteers; subjects
b. participants; subjects
c. subjects; volunteers
d. subjects; participants

Answer: b (p. 41)

2-18) Dr. James is finishing a study that examined the role of testosterone in the development of male white rats. In summarizing this research for publication, Dr. James would most likely describe his surgical manipulations in the _____ section of the report.

a. abstract
b. introduction
c. results
d. procedure

Answer: d (p. 41)

2-19) In what part of an APA-format journal article would you most likely find the outcome to various statistical analyses?

a. Results
b. Procedure
c. Discussion
d. Introduction

Answer: a (p. 41)

2-20) In what part of an APA-format journal article would you most likely find statements regarding the strengths and weaknesses of the described study, descriptions of to what degree the proposed hypotheses were supported, and specific suggestions for future research?

a. Results
b. Procedure
c. Discussion
d. Introduction

Answer: c (p. 41)

2-21) *PsycINFO* is an electronic version of

a. *Psychological Abstracts*
b. *Webster's Collegiate Dictionary*
c. *PsychLIT*
d. *Web of Science*

Answer: a (p. 42)

2-22) The electronic database, *PsycINFO*, catalogs what kinds of sources?

a. Journal articles only
b. Secondary sources only
c. Journal articles, scholarly books, and chapters in scholarly books
d. College-level textbooks, scholarly books, journal articles, and popular publications

Answer: c (p. 42)

2-23) Professor Romano has found an early article dealing with a phenomenon that he's researching. He wants to retrieve all subsequent articles that have cited in the references this early piece of work. Which electronic database would allow Professor Romano to conduct such a search?

a. *PsycINFO*
b. *PsychLIT*
c. *MEDLINE*
d. *Web of Science*

Answer: d (p. 45)

2-24) Which of the following electronic databases catalogs general, nonscholarly publications?

a. *MEDLINE*
b. *Lexis-Nexis*
c. *PsycINFO*
d. *Web of Science*

Answer: b (p. 45)

2-25) Dr. Chang wanted to make use of the web to gather information about her area of scholarship, Attention Deficit Disorder (ADD). Generally speaking, which type of website is the least likely to provide information that is reliable and valid?

a. dot-edu
b. dot-gov
c. dot-org
d. dot-com

Answer: d (p. 45)

2-26) Before reading the information that you have obtained in a literature search, the author suggests that you adopt a strategy for organizing and understanding the material. Which sequence below does the author recommend?

a. Read the Abstracts; read the Introductions; read the Discussions; read the Method sections
b. Read the References; read the Appendices; read the Abstracts; read the Discussions
c. Read the Abstracts; read the Discussions; read the Introductions; read the Results
d. Read the Discussions; read the Introductions; read the Abstracts; read the Results

Answer: a (p. 46)

2-27) One of the biggest obstacles to choosing appropriate research methodologies is whether or not a particular methodology is _____ for a given problem.

a. sophisticated enough
b. quantitative enough
c. feasible
d. internationally recognized

Answer: c (p. 47)

2-28) Good scientific hypotheses

a. state explicit predictions.
b. are testable and falsifiable.
c. provide clear definitions.
d. all of the above

Answer: d (p. 47)

2-29) Which of the following is not one of the specific criteria for developing good scientific hypotheses?

a. Hypotheses should state explicit predictions.
b. Hypotheses should represent some sort of technique for improving the lives of humans.
c. Hypotheses are testable and falsifiable.
d. Hypotheses should provide clear definitions.

Answer: b (p. 48)

2-30) An operational definition specifies the meaning of a variable in terms

a. of the methods that are used in measuring or manipulating that variable.
b. that are agreed upon by all of the major researchers in the area of research.
c. that are quantitative and statistically derived.
d. of the historical discoveries throughout all of science.

Answer: a (p. 48)

2-31) Typically, operational definitions are specified in a research report

a. at the end, in a separate appendix.
b. in the results, after the statistical analyses.
c. in the introduction, before the hypotheses.
d. as a footnote on the reference page.

Answer: c (p. 48)

2-32) Researchers use the _____ approach to determine if changes in an independent variable cause differences in a dependent variable.

a. correlational
b. descriptive
c. survey
d. experimental

Answer: d (p. 48)

2-33) Which of the following is not considered an essential criterion for making cause-effect conclusions?

a. Covariation of variables
b. Statistical significance of results
c. Causal time sequence
d. Elimination of other plausible causes

Answer: b (p. 49)

2-34) What is the primary distinction between experimental versus nonexperimental approaches to research?

a. Nonexperimental approaches often lack at least one of the criteria for making causal conclusions, while experimental approaches typically satisfy all three criteria.
b. Experimental research often makes use of statistical analyses in drawing conclusions, while nonexperimental studies always rely on correlational data analysis.
c. Nonexperimental approaches are typically carried out in laboratory settings, while experimental approaches tend to make use of naturalistic settings.
d. Experimental studies tend to make use of animal subjects, while nonexperimental research tends to make use of human subjects.

Answer: a (p. 49)

2-35) By randomly assigning subjects to different experimental conditions, researchers are striving to satisfy which of the three criteria for making cause-effect conclusions?

a. Covariation of variables
b. Causal time sequence
c. Elimination of other plausible causes
d. none of the above

Answer: c (p. 49)

2-36) It has been suggested that schizophrenics exhibit difficulty in visually tracking the movement of a swinging pendulum. To test this hypothesis, a researcher recruits a subject pool of 20 diagnosed schizophrenic patients and compares their eye-tracking behavior with that of a control group of 20 non-schizophrenic participants. Given this lack of random assignment of subjects to experimental groups, this study would best be characterized as a(n)

a. experiment.
b. quasi-experiment.
c. correlational study.
d. case study.

Answer: b (p. 49)

2-37) If a hypothesis states that, based on a self-report questionnaire, there is a strong, positive relationship between the amount of time spent studying for college exams and the grades received on the exams, the relevant research design is probably a(n)

a. experiment.
b. quasi-experiment.
c. correlational study.
d. case study.

Answer: c (p. 49)

2-38) Hypotheses in _____ research are often rather vague or even absent.

a. experimental
b. quasi-experimental
c. correlational
d. descriptive

Answer: d (p. 50)

2-39) In making decisions about what subjects to use in study, researchers often have to think about the _____, the entire set of cases to which one makes reference, and the _____, which is defined as a subset of the larger group.

a. experimental group; control group
b. control group; experimental group
c. sample; population
d. population; sample

Answer: d (p. 50)

2-40) Darlene works for a company that produces computer software. As a student of psychology, Darlene's job is to conduct research to ensure that the software's interface is clear and well-designed such that people can learn quickly to use the software. Most likely, this kind of work would be classified as _____ research.

a. applied
b. basic
c. governmental
d. descriptive

Answer: a (p. 51)

2-41) _____ research consists of research that is conducted in order to solve some type of immediate problem.

a. Descriptive
b. Correlational
c. Applied
d. Basic

Answer: c (p. 51)

2-42) Jeremiah conducts a study in his psychology class that addresses the issue of why students tend to look down at their notebooks when the professor asks the class a question. Jeremiah is puzzled by this phenomenon and decides to investigate it to satisfy his curiosity. Most likely, this type of a study would be classified as _____ research.

a. unethical
b. applied
c. basic
d. none of the above

Answer: c (p. 52)

2-43) Basic research is designed to

a. answer simple types of questions.
b. address fundamental issues, sometimes purely for curiosity's sake.
c. answer specific questions in order to solve some immediate problem.
d. do away with laboratory-based research.

Answer: b (p. 52)

2-44) It is best to think of applied and basic research as

a. separate and distinct categories of research.
b. irrelevant designs that have no place in the field of psychology.
c. research that is done in order to make money.
d. ends of a continuum rather than a pair of separate categories of research.

Answer: d (p. 53)

2-45) Generally speaking, laboratory research usually has a _____ degree of control associated with it, and field research has a _____ degree of control associated with it.

a. high; high
b. high; low
c. low; high
d. low; low

Answer: b (p. 53)

2-46) Dr. Aquino is interested in the emotional reaction of people when they are embarrassed in a public setting. To study this phenomenon, he decides to embarrass customers in a shopping mall and secretly videotape their reactions. Most likely, Dr. Aquino is engaging in research that could be characterized as being both _____ and _____.

a. laboratory research; applied research
b. field research; applied research
c. laboratory research; basic research
d. field research; basic research

Answer: d (p. 53)

2-47) In attempting to study the stress levels of chefs at work, Professor Moriarty designs a laboratory setting that very much resembles a typical restaurant kitchen. He recruits a number of area chefs and has them prepare a number of challenging dishes within a short amount of time while their blood pressure levels were being monitored. This type of simulation study would be emphasizing

a. experimental realism.
b. mundane realism.
c. unethical behavior.
d. cross-species comparisons.

Answer: b (p. 54)

2-48) Darley and Latané (1968) conducted a classic study in order to investigate the degree to which people were willing to assist one another in times of crisis. In their study, they had participants in separate rooms talking to one another on an intercom system when, suddenly, one of the experimenter's associates faked having a seizure episode. Darley and Latané were interested in how long it would take the various subjects to seek help. This study appears to have a _____ degree of mundane realism, and a _____ degree of experimental realism.

a. high; high
b. high; low
c. low; high
d. low; low

Answer: c (p. 54)

2-49) Much like the distinction between applied versus basic research, it is best to think of mundane realism and experimental realism as

a. separate and distinct categories of research.
b. irrelevant issues that have no place in the field of psychology.
c. research that is done in order to make money.
d. ends of a continuum rather than a pair of separate and distinct categories.

Answer: d (p. 54)

2-50) When the results of a research study can be generalized to other populations of subjects, different situations, and various periods of time, one can say that the study contains a large degree of

a. internal validity.
b. external validity.
c. experimental control.
d. statistical significance.

Answer: b (p. 54)

2-51) When contemplating the degree to which research findings can be generalized to other subjects, settings, and time periods, psychologists often abide by the _____, which assumes that the outcome of a study will often generalize widely, unless there is reason to believe otherwise.

a. continuity assumption
b. normality assumption
c. homogeneity assumption
d. reliability assumption

Answer: a (p. 56)

HANDS-ON ACTIVITIES

1) As a follow-up to the activities listed in Chapter 1, again have students discuss the nature of pseudoscientific methodology and how pseudoscience differs from true science. Using the principles outlined in Chapter 2, have the students design a hypothetical study where the specific principles of science are implemented. Specifically, have students generate testable hypotheses, objective independent and dependent variables, operational definitions, etc. What kinds of subjects will be tested in the study? As a good way to get started, have the students search PsycINFO for any published literature in the area (this will also serve as a nice introduction to the use of online databases). It might also be interesting to have students search the non-scientific literature to give them an appreciation of how such topics are handled outside the arena of science.

2) To give students more practice reading scientific literature, have them each bring in several examples of published abstracts from the psychological literature (they could do this within a particular thematic category or as individually specified topics). Have students get into small groups and share their abstracts with one another. Within each abstract, have the students specify the hypotheses being tested, variables being studied, measures taken, conclusions reached, implications for future research, etc. If appropriate, the students could look for clues of whether the studies represent applied or basic research and to what degree the results of the studies could be generalized to other populations and settings. Finally, students could try to determine from the abstracts where the rationale of a study is found -- previous theories? General experience? Prior research?

VIDEO RESOURCES

Secrets of the Psychics (www.randi.org)
Scientific Method (www.films.com)
Why Use Statistics? (www.films.com)
Research Methods for the Social Sciences (www.insight-media.com)
Research Methods in Psychology (www.insight-media.com)
Statistics: Decisions Through Data (www.insight-media.com)
Measuring Up: An Introduction to Research Methods (www.insight-media.com)

Doing Great Research (www.insight-media.com)
Methodology: The Psychologist and the Experiment (www.insight-media.com)
How Numbers Lie: Media Truth or Fiction (www.insight-media.com)
Understanding Research (Module 2, Discovering Psychology) (www.learner.org)

WEB RESOURCES

http://www.apa.org/science/lib.html Provides helpful tips for conducting library research in psychology

http://library.ucsc.edu/ref/instruction/refguides/psyc.html UCSC's very useful website that contains helpful suggestions for conducting library search

http://www.psy.pdx.edu/PsyTutor/Tutorials/Research/Elements/P1.htm Good interactive tutorial relevant to formulating research hypotheses

APPLICATIONS OF SPSS

To acquaint students with the dynamics of SPSS, have them search PsycINFO for a selection of journal articles dealing with a variety of research topics. Once they have obtained the articles, have them examine the results sections of the articles and extract the different kinds of analyses carried out in the articles. Once they have identified a selection of analyses (both descriptive and inferential), have them search for the various types of analyses within SPSS. This will familiarize them with the multitude of options available within SPSS and get them out of a "cookbook" mode of following a sequence of steps that might be needed to complete other assignments. In addition, various graphs and tables could be extracted from the articles and students could try to identify how such presentations might be created by using the SPSS pull-down menu system. Hypothetical data sets could be used to recreate the graphs and tables.