

**RESEARCH METHODS  
STUDY GUIDE  
TEST 2**

**CHAPTER 4**

**Major methodologies that psychologists use to study behavior.**

Methodology	Main Characteristics	Advantages	Disadvantages
Experiments	Variables are actively manipulated and the environment is as controlled as possible	You can eliminate many extraneous factors that might influence behavior, so you can study those of interest. Consequently, you can draw conclusions about causes of behavior.	You may create an artificial environment, so people act in ways that differ from typical. Sometimes, there are ethical issues about manipulating variables.
Quasi-experiments (and ex post facto studies)	The design of the study resembles an experiment, but the variables are not manipulated. Instead the researcher creates categories based on pre-existing characteristics of participants, like gender.	You can eliminate some of the extraneous factors that might influence behavior (but less so than in true experiments). You can also spot predictable relationships, even if you do not know the cause of behaviors.	Because you do not control potentially important variables, you cannot affirm cause-and-effect relationships.
Correlational studies	You measure variables as they already exist, without controlling them.	You can spot predictable behavior patterns. In addition, you do not strip away complicating variables, so you can see how behavior emerges in a natural situation.	You cannot assess what variables predictably cause behaviors to occur.
Surveys, Tests, and Questionnaires	You ask for self-reported attitudes, knowledge, statements of behavior from respondents.	You can collect a significant amount of diverse information easily. In some cases, you can compare your data with established response patterns from other groups who have been studied.	You do not know how accurately or truthfully your respondents report their behaviors and attitudes. You cannot spot cause-and-effect relationships.
Case Studies	You study a single person or a few people in great depth, so you know a lot about them.	You can study people in their complexity and take their specific characteristics into account in trying to understand behavior.	You may not be able to generalize beyond the person or small group. They may not be representative of people in general.
Observational Research	You study behaviors in their natural settings without intervening (in most cases).	You can study life and behavior in its complexity.	There are so many factors that influence behavior in the natural world that you cannot be sure why people act as they do.
Longitudinal Research	You study people's behaviors over a long period of time.	You can see how behaviors change over time, particularly as an individual develops and matures.	This research may take weeks, months, or years to complete. In addition, people may change because society changes, not only because of their personal maturation.

Archival Research	You use existing records and information to help you answer your research question, even though that information was gathered for other reasons.	You can trace information historically and use multiple sources to address your research question.	The information was gathered for purposes different than yours, so the focus may be different. You also do not know how accurate the records are or what information is missing.
Qualitative Research	You study people in their natural environment and try to understand them holistically. There is reliance on descriptive rather than quantitative information.	You can gain useful insights into the complexity of people's behaviors. Very often the focus is on the meaning of text or conversation, rather than on its subcomponents.	This research often takes considerably longer than quantitative research and can involve painstaking analysis of the qualitative data. Some researchers do not like the fact that numerical analysis is not critical to this approach.

Identify which probability sampling technique is conceptually related to the nonprobability sampling technique most closely. How are they conceptually related?

Probability sampling: Cluster sampling, simple random sampling, stratified random sampling,  
 Nonprobability sampling: Convenience sampling, purposive sampling, quota sampling

Create four groups of items and explain why the terms in each group belong together.

Applied	Criterion	Quasi-experimental
Basic	Interobserver	Random
Chain-referral	Longitudinal	Split-half
Cluster	Predictive	Stratified
Construct	Purposive	Test-retest
Convergent		

Group A: Types of validity: Construct, convergent, criterion, predictive

Group B: Types of reliability: Interobserver, split-half, test-retest

Group C: Types of sampling: Chain-referral, cluster, purposive, random, stratified

Group D: Types of research: Applied, basic, longitudinal, quasi-experimental

## CHAPTER 5

### Different types of validity and how they affect our research.

Construct Validity	<p>How well do your operational definitions and procedures capture the hypothetical constructs you want to study?</p> <p><i>Example:</i> If you want to study intelligence, you can administer an IQ test. It will be reasonably high in construct validity if you are interested in educational abilities, but lower in construct validity if you are interested in problem solving in daily activities.</p>
Convergent and Divergent (Discriminant) Validity	<p>Are there positive correlations between your variable and variables that are supposed to be positively correlated? If several different variables that are all related give you the same information, you have convergent validity.</p> <p>Are there negative correlations between your variable and others that are supposed to be unrelated?</p> <p><i>Example:</i> Research on the topic of emotional intelligence has shown that measures of emotional intelligence and personality are related. This suggests that the measures of emotional intelligence overlap with personality traits and are not being measured separately from personality (Davies, Stankov, &amp; Roberts, 1998). There is a lack of divergent validity here. The results do not remove the possibility that emotional intelligence reflects specific skills, it only means that we haven't figured out how to measure it if it does exist.</p>
Internal and External Validity	<p>Is your research set up so that you can draw a firm conclusion from your data? Or are there other potential interpretations that arise because of limitations in your research design? If you have eliminated extraneous and confounding variables from your methodology, your study will have internal validity.</p> <p><i>Example:</i> Mexican American students expressed preference for a Mexican American over a European American counselor. The researchers identified a social response bias, however, that led to the stated preference. When this confound was eliminated, the difference in preference disappeared (Abreu &amp; Gabarain, 2000).</p> <p>Are your results meaningful beyond the setting and the participants involved in your research? If your findings will generalize to new people, new locations, and a different time, they show greater external validity. If your results pertain only to the context of your research project, they will have lower external validity.</p> <p><i>Example:</i> In order to generalize his research results on obedience, Stanley Milgram studied nonstudents from an office building in downtown New Haven, CT. He obtained similar results as with college students, suggesting that his findings have external validity.</p>
Statistical Conclusion Validity	<p>Have you used the proper statistical approaches to analyzing your data? If you employ the wrong statistical model, your conclusions will be less valid. This is particularly relevant for complex approaches like complex analyses of variance, structural equation modeling, or other analyses involving multiple variables.</p>

Create four groups of items and explain why the terms in each group belong together.

Construct	Divergent	Internal validity
Control	Experimental	Internal
Convergent	Experimenter bias	Placebo
Covariance	External	Statistical conclusion
Demand characteristics	Hawthorne effect	Temporal precedence

## CHAPTER 6

For the following research scenario, identify the design, and the independent and dependent variables.

Wells, G. L., Olson, E. A., & Charman, S. D. (2003). Distorted Retrospective Eyewitness Reports as Functions of Feedback and Delay, *Journal of Experimental Psychology: Applied*, 9, 42-52.

The credibility and accuracy of eyewitnesses in legal proceedings is a problem. A group of psychologists presented a videotape of a staged crime and asked them to identify the culprit in a subsequent photo lineup. In reality, the culprit's picture was not in the lineup. On a random basis, the participants received feedback that they were correct or that they were incorrect, or they received no feedback on whether they were correct. Half of the participants were given immediate feedback and half received feedback 48 hours later. The participants identified their confidence level by expressing a percentage of confidence (e.g., "I'm 60% confident in my judgment").

When participants received confirmatory feedback (i.e., "Good, you identified the actual suspect"), their confidence in their judgment increased, regardless of whether the feedback was immediate or delayed. This result did not occur for the neutral and no-feedback groups. The participants had no idea that their confidence level had been affected by the feedback they had received.

Create three groups of items and explain why the terms in each group belong together.

Analysis of Variance	Measured	Quantitative
Instructional	Planned comparison	Situational
Logistic regression	Post hoc comparison	Student's <i>t</i> -test
Manipulated	Qualitative	Task