



Introduction

A Framework for Understanding the Different Research Methods

“I want to understand why people behave the way they do.” This is the most common reason students give for signing up for my psychology course. At the beginning of the class, I find that students know little about the kinds of questions psychologists investigate. Rather, most students have a “lay” understanding of psychology based on common wisdom, stereotypes, and anecdotes.

The answers to questions about why people behave the way they do are actually complicated. Human behavior is complex, and there is no one explanation for it. In fact, any behavior is the result of numerous contributing factors. Modern psychologists take a level-of-analysis approach to understanding all the factors that go into creating and maintaining human behavior.

Genes contribute to behavior, but there are also numerous cognitive, social learning, and cultural factors that interact with genes to create and maintain behavior in ways we are just beginning to understand. Over time and contrary to popular belief, rather than narrowing down causes of behavior, modern research has shown how complex it really is and acknowledges that we still have a lot to learn. We are less certain about the causes of behavior now, but the answers are more realistic.

In order to know about behavior, researchers must tackle the task of pulling apart all the factors contributing to behavior. Modern researchers often try to see how some of the different factors relate to each other in one study.

There are two general approaches to research, **quantitative** and **qualitative**. Much of the research in a high school course is quantitative, such as experiments and studies gathering data with questionnaires and analyzing

it with correlations. However, the field of qualitative research has grown significantly since the mid-1990s and offers researchers ways of understanding behavior not possible with quantitative methods. Qualitative methods include case studies, some types of interviewing, and observation.

Students studying modern psychology should understand both approaches.

The Problem-Solving Process in Psychology

Psychologists go through a problem-solving process any time they create research questions about human behavior; when a researcher sees a problem, the researcher creates a research question to investigate it. Here are some examples of research questions:

1. Does watching violent media cause aggression?
2. Which treatments work for treating depression?
3. Why do male and female mathematical skills differ?
4. What are the prevalence rates of mental illness around the world?
5. Does the concept “disordered eating” differ by culture?
6. How might a polymorphism (gene variation) interact with environmental factors to increase one’s risk of depression?
7. Does living in different cultures (individualistic or collectivist) modify neural structures?
8. Do people from different cultures comply with requests the same way?
9. How do boys view their body image?
10. How might one’s culture affect how one views depressive symptoms and their appropriate treatment?
11. How do individuals make meaning of their recovery experience from alcohol addiction?
12. To what extent can doctors accurately tell if someone has a mental illness?
13. How do children use stories to help them understand cultural expectations?

14. How can we understand the progress of patients in their treatment for an eating disorder?
15. How can we maximize an athlete’s sport performance?

It is a good thing that there is more than one research method because these questions ask a variety of things. Each method serves a different purpose, and *the different methods are selected depending on what we want to know about behavior*. Just one method would not give us a comprehensive picture of behavior.

Here is a list of the research methods selected to tackle the example research questions. **Some of these studies are reviewed in depth in this book.** Some of the studies not reviewed in this book are free on the Internet.

1. Bandura (1965; Bandura, Ross, & Ross, 1963) used controlled lab experiments for the classic series of Bobo doll experiments to demonstrate that the modeling of media is an important cause of aggressive behavior.
2. Keller and colleagues (2008), DeRubeis and colleagues (2005), Babyak and colleagues (2000), Christensen and Burrows (1990), and Qi Guijun and Sang Peng in 2005 (Wolfe, 2005) all used experiments to investigate the efficacy of different depression treatments, and all the treatments were beneficial to participants. The treatments were the combination of drugs and cognitive therapy, cognitive therapy alone for severe depression, exercise, diet change, and acupuncture.
3. Kimura and Clarke (2002) designed a quasi-experiment to investigate differences in male and female cognitive mapping skills.
4. The World Health Organization (2004) ran a survey to investigate the prevalence of mental illness worldwide.
5. Becker, Burwell, Gilman, Herzog, and Hamburg (2002) studied disordered eating in Fijian adolescent females before and after the widespread availability of television. They collected data in two ways, with a field experiment and with an interview. The field experiment data were analyzed with correlations, and the interviews were analyzed with content analysis. The questionnaires part of the Becker study is detailed in Chapter 9 and the interviews part in Chapter 6.
6. Caspi and colleagues (2003) used questionnaires to measure the amount of depression and the number of stressful events in a sample and correlated these findings with an individual’s genotype for the serotonin transporter gene in a gene–environment correlation study. The Caspi study is detailed in Chapter 9.

7. Chiao and colleagues (2009) used a questionnaire to classify people as either collectivist or individualist and then used fMRI to see if the neural structures of the two groups differed. The Chiao study is detailed in Chapter 9.
8. Petrova, Cialdini, and Sills (2007) used email interviews to see if compliance was similar across cultures. Data were analyzed with correlations.
9. Hargreaves and Tiggemann (2006) used focus group interviews to investigate boys' body image. The Hargreaves and Tiggemann study is detailed in Chapter 6.
10. Okello and Musisi (2006) used focus group interviews to investigate how cultural views of the Baganda of Uganda shaped the way they viewed depressive symptoms and appropriate treatment. The Okello and Musisi study is detailed in Chapter 6.
11. Ehrmin (2002) used overt participant-observation to study substance-dependent recovery experiences of African-American women. Ehrmin also interviewed the women. The Ehrmin study is detailed in Chapter 7.
12. Rosenhan (1973) used covert participant-observation to study whether or not doctors could tell if someone had a mental disorder. The Rosenhan study is detailed in Chapter 7.
13. Alexander, Miller, and Hengst (2001) used narrative interviews and diary-observations to collect data on how children's emotional attachments to stories help them make meaning in their culture. Content analysis was selected to analyze data. The Alexander study is detailed in Chapter 7.
14. Ma (2008) used a case study to identify themes emerging from family therapy for eating disorders. The Ma study is detailed in Chapter 8.
15. Cohen, Tenenbaum, and English (2006) used a case study to document the unique zone of optimal emotional arousal for two athletes and showed how they benefited from training to hit their peak performance within this zone. The Cohen study is detailed in Chapter 8.

Distinguish between Qualitative and Quantitative Data

The goals of research dictate whether a psychologist uses quantitative or qualitative research methods. Researchers using **quantitative methods** seek objective knowledge and gather data with numbers. In contrast, researchers

using **qualitative methods** seek meaning and context and do not quantify human characteristics.

Note to IB Students

Students must go into the study of quantitative and qualitative research methods understanding that many research design concepts, such as representation from sampling, the role of the researcher as objective, triangulation, internal validity (relating to credibility), and generalizing (related to external validity), were first formulated for quantitative methods. Rethinking the meaning of these concepts is crucial for interpreting qualitative studies. *This means that research concepts have different meanings when applied to qualitative studies.*

One might automatically think of the quantitative use of research design concepts when they think about qualitative methods. A student must not do this! This is probably going to be the hardest thing for students. This is a good place to practice tolerating uncertainty.

The concepts of quantitative research methods were influenced by **positivism**, **empiricism**, and **hypothetico-deductivism**. A positivist approach means "that the goal of research is to produce objective knowledge" (Willig, 2001, p. 3). Empiricism means that knowledge of the world must come from direct observations (induction), not from something abstract (deduction) (Snape & Spencer, 2003). Hypothetico-deductivism means that theories are generated and then tested in a process called **falsification**. Quantitative scientific methods stem from the idea that scientists create theories and then test the theories (often in controlled lab experiments) to see if they can be falsified. If the theories cannot be falsified, then they have support (not proof). Supporters of qualitative methods critique quantitative methods for the general reason that "there are no fixed or overarching meanings because meanings are a product of time and place" (Snape & Spencer, 2003, p. 9). Researchers using qualitative methods prefer to study people in real-life situations.

In quantitative research methods, data are gathered and analyzed in numerical form. For example, all experiments use quantitative methods. In addition, surveys and questionnaires are also frequently quantified, often using **Likert Scales** to gather data, where answers may fall into a range from "strongly agree" to "strongly disagree."

According to Hugh Coolican (2004), quantitative methods have seven qualities:

1. They are intended to be narrow and focused.
2. They are objective.
3. They are intended to be artificial.

4. They are highly structured.
5. They are not meant to show the context of real life, meaning that the studies have low **ecological validity**. This means that the conditions of the study do not generalize well to real-life situations.
6. They are reliable.
7. They are low in **reflexivity**, meaning that the researcher intends to stay objective and does not reflect on how he or she might have influenced the results.

Quantitative data are a suitable choice for certain kinds of research questions.

For example, the *only* way to answer research questions about causation is to run an experiment. In lab experiments, researchers have the ability to control all factors that might influence how an independent variable affects a dependent variable. Bandura's Bobo doll experiments are examples. Another example is studying mental and physical health treatments. Establishing causation is required for showing that treatments are effective.

A second research example is set up when a researcher wants to know the relationship (correlation) between two or more variables. One example is studying the relationship between genes and stressful lives. Caspi and colleagues (2003) used two questionnaires to correlate stressful life events and depressive symptoms to having genetic variations of the serotonin transporter gene.

In contrast, qualitative research does not use numerical values (other than some percentages or frequencies that are then used to generate themes) and is very different from quantitative research. *Be aware that there is no one accepted way to design qualitative research*, so you will see a lot of variety in study designs.

The seven qualities of qualitative research are the opposite of quantitative methods (Coolican, 2004):

1. They provide a rich range of information rather than narrowly focused information.
2. They are subjective.
3. They reflect the natural environment of behavior, the opposite of artificiality.
4. They are loosely structured and sometimes unstructured.
5. They have ecological validity.
6. They have low reliability.
7. They are high in reflexivity.

Dawn Snape and Liz Spencer (2003) add more to defining qualitative methods:

1. A qualitative method is an **emic** approach to understanding behavior. Emic approaches delve into the unique perspective of individuals and/or groups, sometimes challenging the assumed **etics**, or universal behaviors, that researchers often have about people at the beginning of a research study.
2. It is meant to study context, meaning, and processes characterizing behavior.
3. Its research strategies are flexible and are conducted in the real world.
4. Data collection is supposed to be sensitive to the context of the person.
5. There tends to be close contact between researchers and participants.
6. Much of the data analysis is aimed at identifying themes/categories that emerge from the data.

Several objections to quantitative research led to the development and growing acceptance of qualitative methods (Coolican, 2004):

1. Quantitative methods ignore the context of the person and often separate out a section of behavior, such as "memory," from the rest of the person.
2. Even if researchers think they are objective, their impersonal relationship with study participants might influence the outcome of the study.
3. Experiments and questionnaires gather superficial information. The context is typically ignored. For example, the EAT-26, a commonly used questionnaire to assess a person's level of disordered eating, does not gather information about the person's social context. The answers to the questions may be the result of social conditions or cultural rules, and the risk to participants is that they can be wrongly categorized as "at high risk for developing an eating disorder" when the preoccupation with food might be simply the result of living in an impoverished country.

Sometimes qualitative research is the *only* way a topic can be studied. For example, how else would we know about personal experiences with addiction recovery?

Researchers frequently combine quantitative and qualitative methods. For example, Becker and colleagues' (2002) research about disordered eating

in Fijian adolescents was partially a field experiment and partially an interview study.

Sometimes more than one qualitative method is used in a single study. Alexander and colleagues (2001) used narrative interviews and self-observation diaries to study children's language use. Ehrmin (2002) used participant-observation and interviews to study addiction recovery. In each study, the two methods complemented each other.

Since the 1990s, qualitative methods have seen an "explosion of interest" and have become more accepted as valid research (Snape & Spencer, 2003, p. 10). Before the mid-1990s, there was some use of qualitative methods. Cultural psychology is a good example. Cultural psychologists had a tradition of using ethnography (observations of cultural practices), which was borrowed from anthropology. Now qualitative methods are used to study a wide range of behaviors.

Explain Strengths and Limitations of a Qualitative Approach to Research

Strengths of qualitative research methods include the following:

1. If the goal is to study the context of a person—how a person makes meaning of a situation or documents a process—then qualitative methods are the best choice.
2. To build on strength 1, sometimes qualitative methods are the *only* way we can study behavior. For example, the only way for Becker and colleagues (2002) to understand the thoughts and feelings of Fijian adolescent girls about disordered eating was to interview a subgroup from the original sample that took the EAT-26 questionnaire. The researchers were interested in the themes that emerged from the interviews from a group representing different degrees of disordered eating. They were the first people to study disordered eating in Fiji. The themes that emerged helped psychologists understand one result of rapid cultural change on behavior. As another example, V. S. Ramachandran (Ritsko & Rawlence, 2001) showed that Freud's theory of the Oedipal complex was incorrect through his study of David, who suffered from Capgras syndrome. (David thought his parents were imposters after he had an accident in which he received a head injury. Fortunately, David's brain repaired itself over time.) We have

to wait for the unfortunate results of accidents to observe these types of cases. Cases such as David's give neurologists the chance to develop new hypotheses about the brain and behavior.

3. Qualitative methods address the limitations of quantitative methods.
4. Qualitative methods are important for **triangulation**, addressed in Chapter 4.

Limitations of qualitative methods include the following:

1. They are uncontrolled and hard to replicate.
2. They have low population validity, one type of external validity.

However, these limitations are somewhat superficial. *We should not criticize research for meeting its goals.* It is similar to criticizing experiments for being too artificial and lacking ecological validity. Experiments are supposed to be and must be artificial to show a clear cause and effect. In the same way, qualitative methods are supposed to portray the context of participants.