

Some Key Research Methods

- Qualitative:
 - Naturalistic observation
 - Participant observation
 - Case method
 - Interviews/Focus groups
 - Historical/Archival
- Quantitative
 - Surveys
 - Correlation research
 - Experiment method

Longitudinal vs. Cross-sectional Research

In a *longitudinal study*, researchers collect data on the same individuals over a number of different time periods or “waves.” Thus the same group of students might complete surveys at the end of first grade, second grade, third grade, and fourth grade. Researchers can then examine changes in student data across those four years.

In a *cross-sectional study*, researchers collect data on individuals of differing ages or developmental levels, at the same time. Thus data are collected for many students, at one time interval only.

QUALITATIVE RESEARCH: In the social sciences, *qualitative research* is a term that describes research that focuses on how individuals and groups view/understand their world and construct meaning out of their experiences. Fraenkel and Wallen (1996) describe five general characteristics of qualitative research studies. These include:

1. Researchers collect their data in naturalistic settings (e.g., classrooms), by observing and participating in regular activities.
2. Data are collected via words or pictures (not via numerical or quantifiable indicators).
3. Processes (i.e., how individuals communicate with each other about a lesson) are as important as products (i.e., whether or not students obtain the correct answers to a problem).
4. Most qualitative researchers do not start out with specific hypotheses; rather, they use inductive methods to generate conclusions regarding their observations.
5. Qualitative researchers care about participants' perceptions; investigators are likely to question participants in depth about their beliefs, attitudes, and thought processes.

Naturalistic Observation: A qualitative research technique in which an investigator observes events occurring in a culture, group, or setting, while attempting not to affect those events by being present. This approach is often used as part of ethnographic study.

- Advantages:
 - Observing subjects in their natural habitat

- Disadvantages:
 - Observer Bias; error introduced into measurement when observers overemphasize behavior they expect to find and fail to notice behavior they do not expect

Participant Observation: Naturalistic observation of a culture, group, or setting, in which researchers takes on roles to conform to that setting in order to gain closer insights into the circumstances and experiences of their subjects.

- Advantages:
 - Gain a close and intimate familiarity with a given group of individuals
- Disadvantages
 - Potential desire to changes things; manipulated the outcome
 - Outcomes are very difficult to predict from the outset
 - Achievements depend to a very large extent on researcher's commitment, creativity and imagination

Action Research: a process of inquiry conducted by and for those taking on a practical concern or issue related to organizational or social change. The primary reason for engaging in action research is to assist the “actor” in improving and/or refining his or her actions. Action research eschews the requirement that knowledge needs to be created through impartial observation.

Interviews and Focus Groups: In-depth interviews are optimal for collecting data on individuals' personal histories, perspectives, and experiences, particularly when sensitive topics are being explored. Interviews range from the highly structured style, in which questions are determined before the interview, to the open-ended, conversational format. For the most part, however, interviews are more open ended and less structured. Frequently, the interviewer asks the same questions of all the participants, but the order of the questions, the exact wording, and the type of follow-up questions may vary considerably.

Focus groups are effective in eliciting data on the cultural norms of a group and in generating broad overviews of issues of concern to the cultural groups or subgroups represented. Employing a focus group technique involves a researcher facilitating a small group discussion between selected individuals on a particular topic. This method is commonly used in market research and testing new initiatives with users/employees. Focus group interviews can provide quality controls because participants tend to provide checks and balances on one another that can serve to curb false or extreme views. Focus group interviews might also remove some of the communication common to interviews as participants may be less fearful of being evaluated by the interviewer because of the group setting. Also, group members get to hear what others in the group have to say, which may stimulate the individuals to rethink their own views.

Case Method: A qualitative research method in which a particular subject or event is studied in detail, usually in the hopes of being able to gain insights or develop theoretical hypothesis that can be evaluated in relation to a larger group or set of events.

Historical/Archival Research: collection and evaluation of texts and evidence from past periods that might provide insight into contemporary social issues or phenomena.

Interpretive Methods Associated with Qualitative Research:

- Discourse Analysis: a set of methods most often applied to naturally occurring language use.
- Narrative/Literary Analysis: a set of methods employed to consider the socio-cultural aspects of a variety of texts.
- Content Analysis: content analysis is the analysis of texts of various types including writing, images, recordings and cultural artifacts. Content analysis includes both qualitative and quantitative approaches. That is, it involves descriptive interpretation of textual material as well as counting or quantifying the occurrences of particular elements in a group of texts (terms, images, expressions of a point of view, etc).

EMPIRICAL / QUANTITATIVE METHODS: the empirical investigation of observable phenomena using statistical, mathematical or numerical data or computational techniques.

Survey: A questionnaire designed to measure people's perception of some aspect of behavior or environment.

- Advantages
 - Efficient in collecting information from a large number of respondents
 - A wide range of information can be collected
 - Because standardized, may be free from some types of errors
 - They are relatively easy to administer
 - There is an economy in data collection
- Disadvantages
 - Depend on subjects' motivation, honesty, memory, and ability to respond
 - Surveys are not appropriate for studying complex social phenomena
 - May have low validity when researching affective/emotional variables
 - Respondents are usually self-selected as opposed to random
 - Difficult to account for differences in interpretation of questions by subject of varied socio-cultural backgrounds (gendered, economic, ethnic, etc).

Correlation Research: An empirical research technique in which variables of interest are identified and carefully measured. These measures are then analyzed statistically to determine the extent to which they are related to one another. Researchers who engage in correlational research do not manipulate variables; rather, they collect data on existing variables and examine relations between those variables. A number of different statistical techniques can be used to analyze correlational data. An example of a correlational research would be an examination of the statistical relations between middle school students' standardized examination scores in mathematics, and the students' demographic characteristics

(e.g., gender, ethnicity, socioeconomic status, etc.). *It is important to note that correlation research does not establish a causal link between variables or the direction of causality.*

Experimental Method: An empirical research method in which one or more variables are systematically varied (the independent variables) to determine if such changes have any impact on the behavior of interest (the dependent variable). In an experiment, participants are randomly assigned to one of several treatments. One of the most basic experimental designs involves random assignment to either an experimental group (which receives some kind of treatment), or a control group (which does not receive the treatment). If the differences in treatment between the experimental and the control group are tightly controlled, and if subsequent to the experiment there are measurable differences between the two groups that were not present before the experiment, then researchers often conclude that the experimental manipulation “caused” the differences to occur.