Week 3: Intro to Qualitive & Quantitative Research Methods

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Research Methods Guide: Research Design & Method

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Qualitative vs. Quantitative Research | Differences, Examples & Methods

Qualitative Research...

- “...is a situated activity that locates the observer in the world.
- ...consists of a set of interpretive material practices that make the world visible...[and]...transform the world.
- ...turn[s] the world into a series of representations including
  - fieldnotes
  - interviews
  - conversations
  - photographs
  - recordings
  - and memos to the self

Given, L. M. (Ed.). (2008). *The Sage encyclopedia of qualitative research methods*. Sage Publications.

Qualitative Research...

- **Qualitative research is a type of scientific research. In general terms, scientific research consists of an investigation that**:
  - seeks answers to a question
  - systematically uses a predefined set of procedures to answer the question
  - collects evidence
  - produces findings that were not determined in advance
  - produces findings that are applicable beyond the immediate boundaries of the study

Qualitative research shares these characteristics. Additionally, it seeks to understand a given research problem or topic from the perspectives of the local population it involves. Qualitative research is especially effective in obtaining culturally specific information about the values, opinions, behaviors, and social contexts of particular populations.

https://course.ccs.neu.edu/is4800sp12/resources/qualmethods.pdf

Qualitative Research

- "...involves an interpretive naturalistic approach to the world. This means that qualitative researchers study things in their natural settings"
  - Interpret phenomena and make sense of them in terms of what meanings it brings to people.
  - Ability to understand patterns of conduct and social processes
  - To do this the social scientist were presumed to be able to observe the world objectively...qualitative methods helped with this.

5 approaches to qualitative research

- ethnography
- narrative
- phenomenological
- grounded theory
- case study

(per Creswell, 2007)

Given, L. M. (Ed.). (2008). *The Sage encyclopedia of qualitative research methods*. Sage Publications.

Qualitative Approaches to Research (Designs)

- **Ethnography**: “In ethnography, you immerse yourself in the target participants’ environment to understand the goals, cultures, challenges, motivations, and themes that emerge...has its roots in cultural anthropology where researchers immerse themselves within a culture, often for years...you experience the environment first hand, and sometimes as a “participant observer.”
- **Narrative**: “weaves together a sequence of events, usually from just one or two individuals to form a cohesive story. You conduct in-depth interviews, read documents, and look for themes; in other words, how does an individual story illustrate the larger life influences that created it. Often interviews are conducted over weeks, months, or even years, but the final narrative doesn’t need to be in chronological order”.

https://measuringu.com/qual-methods/

Qualitative Approaches to Research (Designs)

- **Phenomenological**: “describe an event, activity, or phenomenon...you use a combination of methods, such as conducting interviews, reading documents, watching videos, or visiting places and events, to understand the meaning participants place on whatever’s being examined. You rely on the participants’ own perspectives to provide insight into their motivations”.
- **Grounded theory**: “looks to provide an explanation or theory behind the events. You use primarily interviews and existing documents to build a theory based on the data”.

https://measuringu.com/qual-methods/

Qualitative Approaches to Research (Designs)

- **Case study**: “involves a deep understanding through multiple types of data sources. Case studies can be explanatory, exploratory, or describing an event”.

https://measuringu.com/qual-methods/

Table 4.1 Contrasting Characteristics of Five Qualitative Approaches

Characteristics	*Narrative Research*	*Phenomenology*	*Grounded Theory*	*Ethnography*	*Case Study*
Focus	Exploring the life of an individual	Understanding the essence of the experience	Developing a theory grounded in data from the field	Describing and interpreting a culture-sharing group	Developing an in-depth description and analysis of a case or multiple cases
Type of Problem Best Suited for Design	Needing to tell stories of individual experiences	Needing to describe the essence of a lived phenomenon	Grounding a theory in the views of participants	Describing and interpreting the shared patterns of culture of a group	Providing an in-depth understanding of a case or cases
Discipline Background	Drawing from the humanities including anthropology, literature, history, psychology, and sociology	Drawing from philosophy, psychology, and education	Drawing from sociology	Drawing from anthropology and sociology	Drawing from psychology, law, political science, medicine
Unit of Analysis	Studying one or more individuals	Studying several individuals that have shared the experience	Studying a process, action, or interaction involving many individuals	Studying a group that shares the same culture	Studying an event, a program, an activity, more than one individual

Creswell, J. W. (2007). *Qualitative inquiry and research design: Choosing among five approaches (2nd ed.). Sage Publications, Inc. (p. 78)*

Characteristics	*Narrative Research*	*Phenomenology*	*Grounded Theory*	*Ethnography*	*Case Study*
Data Collection Forms	Using primarily interviews and documents	Using primarily interviews with individuals, although documents, observations, and art may also be considered	Using primarily interviews with 20–60 individuals	Using primarily observations and interviews, but perhaps collecting other sources during extended time in field	Using multiple sources, such as interviews, observations, documents, artifacts
Data Analysis Strategies	Analyzing data for stories, "restorying" stories, developing themes, often using a chronology	Analyzing data for significant statements, meaning units, textural and structural description, description of the "essence"	Analyzing data through open coding, axial coding, selective coding	Analyzing data through description of the culture-sharing group; themes about the group	Analyzing data through description of the case and themes of the case as well as cross-case themes
Written Report	Developing a narrative about the stories of an individual's life	Describing the "essence" of the experience	Generating a theory illustrated in a figure	Describing how a culture-sharing group works	Developing a detailed analysis of one or more cases

Creswell, J. W. (2007). *Qualitative inquiry and research design: Choosing among five approaches (2nd ed.). Sage Publications, Inc. (p. 79)*

Qualitative Methods for Data Collection

- **Interview:** Researchers can conduct in-depth, face-to-face interviews with participants. This allows them to gain insights from the participants to best understand their experience.
- **Focus Groups:** Focus groups are similar to interviews, but involve multiple participants at once. They are another route to obtaining responses and making interview observations.
- **Observation:** A less direct method than interviews or focus groups, this method requires careful attention to participants' activities and behaviors in order to gather data.
- **Document analysis:** Researchers can gather useful data from print documents as well as electronic records. Careful analysis is needed to draw conclusions from the body of related documents.

https://www.gcu.edu/blog/doctoral-journey/5-qualitative-research-designs-and-research-methods

Qualitative Methods for Data Collection

- **Interviews**
  - Semistructured interviews: These are interviews that use an interview protocol to help guide the researcher through the interview process. While this can incorporate conversational aspects, it is mostly a guided conversation between the researcher and participant. It does maintain some structure (hence the name semistructured), but it also provides the researcher with the ability to probe the participant for additional details.
  - Structured interviews: ...strictly adhere to the use of an interview protocol to guide the researcher. It is a more rigid interview style, in that only the questions on the interview protocol are asked...not a lot of opportunities to probe and further explore topics that participants bring up when answering the interview questions...can be advantageous when researchers have a comprehensive list of interview questions, since it helps target the specific phenomenon or experience that the researcher is investigating.
    - Able to quantify

https://www.statisticssolutions.com/choosing-an-interview-type-for-qualitative-research/

Qualitative Methods for Data Collection

- **Observations:**(watching what people do) is a type of correlational (non-experimental) method where researchers observe ongoing behavior.
  - Structured Observations: Research conducted at a specific place, time, where participants are observed in a standardised procedure. Rather than writing a detailed description of all behaviors observed, researchers code observed behaviors according to a previously agreed upon scale.
  - Naturalistic Observation: The study the spontaneous behavior of participants in natural surroundings. The researcher simply records what they see in whatever way they see it.
  - Participant Observation: A variation on natural observations where the researcher joins in and becomes part of the group they are studying to get a deeper insight into their lives.

https://www.tc.columbia.edu/media/administration/institutional-review-board-/guide-amp-resources---documents/Published_Study-Material-Examples.pdf

Quantitative Research

- Quantitative methodology is the dominant research framework in the social sciences. It refers to a set of strategies, techniques and assumptions used to study psychological, social and economic processes through the **exploration of numeric patterns**. Quantitative research gathers a range of numeric data. Some of the numeric data is intrinsically quantitative (e.g. personal income), while in other cases the numeric structure is imposed (e.g. 'On a scale from 1 to 10, how depressed did you feel last week?').

Coghlan, D., Brydon-Miller, M. (2014). *The SAGE encyclopedia of action research* (Vols. 1-2). London, : SAGE Publications Ltd doi: 10.4135/9781446294406

Quantitative Research

- The collection of quantitative information allows researchers to conduct simple to extremely sophisticated statistical analyses that aggregate the data (e.g. averages, percentages), show relationships among the data (e.g. 'Students with lower grade point averages tend to score lower on a depression scale') or compare across aggregated data (e.g. the USA has a higher gross domestic product than Spain). Quantitative research includes methodologies such as questionnaires, structured observations or experiments and stands in contrast to qualitative research.

Coghlan, D., Brydon-Miller, M. (2014). *The SAGE encyclopedia of action research* (Vols. 1-2). London, : SAGE Publications Ltd doi: 10.4135/9781446294406

Quantitative Research

- Quantitative research is a way to learn about a particular group of people, known as a sample population. Using scientific inquiry, quantitative research relies on data that are observed or measured to examine questions about the sample population.

Allen, M. (2017). The SAGE encyclopedia of communication research methods (Vols. 1-4). Thousand Oaks, CA: SAGE Publications, Inc doi: 10.4135/9781483381411

Quantitative Methods for Data Collection

- You can collect discrete or continuous data in the following forms:
- **Counting:** A count is associated with entities. For example, you can count the number of students in a class.
- **Measurements:** This refers to measurements of physical objects. For instance, you can measure the size of a student's desk.
- **Data projection:** Data projection is the anticipation of future data. You may take existing data and extrapolate future data from it. For instance, a marketing professional might use current sales figures for an existing product to project expected sales figures for a new product.
- **Quantification of qualitative data:** This is among the trickiest of all quantitative data because it is based on qualitative data. The quantification of qualitative data involves assigning a numeric value to a qualitative concept, theory or experience. A common example is the 0–10 scale that healthcare providers use to evaluate the severity of a patient's pain.

https://www.gcu.edu/blog/doctoral-journey/most-effective-quantitative-data-collection-methods

Quantitative Methods for Data Collection

Surveys and Questionnaires Of all the quantitative data collection methods, surveys and questionnaires are among the easiest and most effective. Many graduate students conducting doctoral research use this method because surveys and questionnaires are applicable to both quantitative and qualitative research.

You should consider a few questions when planning a survey or questionnaire:

- Who is your target demographic?
- Which questions will you ask? (These questions will show the focus of your research.)
- How will you eliminate biases?
- How will you distribute your surveys?
- Will you need to incentivize participation?

- When collecting quantitative data, remember to keep your questions closed-ended rather than open-ended. Scales, multiple choice questions, yes or no questions and other types of closed-ended questions work well.

https://www.gcu.edu/blog/doctoral-journey/most-effective-quantitative-data-collection-methods

Quantitative Methods for Data Collection

Structured Interviews Although interviews are used more frequently for qualitative research, they can still work for quantitative data collectors. If you do attempt to utilize interviews in a quantitative design, be careful to structure your interview questions accordingly. You will need to stick to closed-ended questions, such as yes or no questions and scales.

The way in which you conduct the interviews is another consideration. To avoid flaws in your research, you will need to employ the same script for every interview. This means reading the same questions in the same order and refraining from inserting additional words or phrases. Even if an impromptu question occurs to you in the midst of an interview, you cannot ask it because you cannot deviate from the script.

https://www.gcu.edu/blog/doctoral-journey/most-effective-quantitative-data-collection-methods

Quantitative Methods for Data Collection

Structured Observations Sometimes, researchers must visit a particular environment and make specific observations to inform their dissertation analyses. Like interviews, observations can be used to collect either quantitative or qualitative data. For quantitative data, researchers will generally conduct structured observations.

To conduct structured observations, you will first identify the specific behaviors on which you intend to focus. Then, you will record those behaviors as they happen. This process will produce your calculations (e.g., how many times a particular event happens).

https://www.gcu.edu/blog/doctoral-journey/most-effective-quantitative-data-collection-methods

Quantitative Approaches to Research (Designs)

- **Descriptive research** seeks to describe the current status of an identified variable. These research projects are designed to provide systematic information about a phenomenon. The researcher does not usually begin with an hypothesis, but is likely to develop one after collecting data. The analysis and synthesis of the data provide the test of the hypothesis.
- **Correlational research** attempts to determine the extent of a relationship between two or more variables using statistical data. In this type of design, relationships between and among a number of facts are sought and interpreted. This type of research will recognize trends and patterns in data, but it does not go so far in its analysis to prove causes for these observed patterns. Cause and effect is not the basis of this type of observational research.

https://www.wssu.edu/about/offices-and-departments/office-of-sponsored-programs/pre-award/_Files/documents/develop-quantitative.pdf

Quantitative Approaches to Research (Designs)

- **Causal-comparative/quasiexperimental research** attempts to establish causeeffect relationships among the variables. These types of design are very similar to true experiments, but with some key differences. An independent variable is identified but not manipulated by the experimenter, and effects of the independent variable on the dependent variable are measured. The researcher does not randomly assign groups and must use ones that are naturally formed or pre-existing groups. Identified control groups exposed to the treatment variable are studied and compared to groups who are not.
- **Experimental research**, often called true experimentation, uses the scientific method to establish the cause-effect relationship among a group of variables that make up a study. The true experiment is often thought of as a laboratory study, but this is not always the case; a laboratory setting has nothing to do with it. A true experiment is any study where an effort is made to identify and impose control over all other variables except one. An independent variable is manipulated to determine the effects on the dependent variables. Subjects are randomly assigned to experimental treatments rather than identified in naturally occurring groups

https://www.wssu.edu/about/offices-and-departments/office-of-sponsored-programs/pre-award/_Files/documents/develop-quantitative.pdf

Research methods for collecting data

Research method	Primary or secondary?	Qualitative or quantitative?	When to use
Experiment	Primary	Quantitative	To test cause-and-effect relationships.
Survey	Primary	Quantitative	To understand general characteristics of a population.
Interview/focus group	Primary	Qualitative	To gain more in-depth understanding of a topic.
Observation	Primary	Either	To understand how something occurs in its natural setting.
Literature review	Secondary	Either	To situate your research in an existing body of work, or to evaluate trends within a research topic.
Case study	Either	Either	To gain an in-depth understanding of a specific group or context, or when you don't have the resources for a large study.

https://www.scribbr.com/category/methodology/

QUALITATIVE	QUANTITATIVE
Methods include focus groups, unstructured or in-depth interviews, and reviews of documents for types of themes	Surveys, structured interviews, measurements & observations, and reviews of records or documents for **numeric or quantifiable information**
A primarily inductive process used to formulate theory or hypotheses	A primarily deductive process used to test pre-specified concepts, constructs, and hypotheses that make up a theory
More subjective: **describes a problem or condition from the point of view of those experiencing it**	More objective: **provides observed effects** (interpreted by researchers) of a program on a problem or condition
Text-based	**Number-based**
More in-depth information on a few cases	Less in-depth but more breadth of information across a large number of cases
Unstructured or semi-structured response options	Fixed response options, measurements, or observations
No statistical tests	Statistical tests are used for analysis
Less generalizable	More generalizable

Found at https://libguides.uta.edu/quantitative_and_qualitative_research/differences

	✔ Pros	✖ Cons
Qualitative	• Flexible – you can often adjust your methods as you go to develop new knowledge. • Can be conducted with small samples.	• Can't be analyzed statistically or generalized to broader populations. • Difficult to standardize research.
Quantitative	• Can be used to systematically describe large collections of things. • Generates reproducible knowledge.	• Requires statistical training to analyze data. • Requires larger samples.

https://www.scribbr.com/category/methodology/