

# AN ANALYSIS OF THE STRENGTHS AND LIMITATION OF QUALITATIVE AND QUANTITATIVE RESEARCH PARADIGMS

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## **Abstract**

*Although some social science researchers (Lincoln & Guba, 1985; Schwandt, 1989) perceive qualitative and quantitative approaches as incompatible, others (Patton, 1990; Reichardt & Cook, 1979) believe that the skilled researcher can successfully combine approaches. The argument usually becomes muddled because one party argues from the underlying philosophical nature of each paradigm, and the other focuses on the apparent compatibility of the research methods, enjoying the rewards of both numbers and words. Because the positivist and the interpretive paradigms rest on different assumptions about the nature of the world, they require different instruments and procedures to find the type of data desired.. Nonetheless, people tend to adhere to the methodology that is most consonant with their socialized worldview. This paper is set to analyze the strengths and limitations of Qualitative research focusing on its shortcomings and how Quantitative research can overcome these shortcomings. The paper concludes that an eclectic approach to educational research can not an option.*

**Key words:** qualitative, quantitative, research paradigm, eclectic.

## **Introduction**

The word paradigm can be used to mean either approach or design. The qualitative research design is also known as the socio-Anthropological research paradigm .It is interpretative, and ethnographic in nature. The underlying approach requires detailed observation, explanation and assumes that it is impossible to define exactly what elements are important and crucial and should be considered to the exclusion of others. It argues that validity is important than attempting rigorously to define what is being observed and by so doing study the whole situation. It attempts to study the whole situation in order to evaluate the complexity and ensure that their conclusion take account of both unique and general factors.

Quantitative research paradigm on the other hand is empirical in nature; it is also known as the scientific research paradigm The paradigm ensures validity by the process of rigorous clarification, definition or use of pilot experiments. That is trying out the instruments before hand, and checking their relevance with experts and assessing their reliability by use of statistical tests. This approach can be further sub-classified into inferential, experimental and simulation approaches to research.

## The Assumptions of Qualitative Designs

1. Qualitative researchers are concerned primarily with **process**, rather than outcomes or products.

2. Qualitative researchers are interested in **meaning** how people make sense of their lives, experiences, and their structures of the world.

3. The qualitative researcher is the **primary instrument** for data collection and analysis. Data are mediated through this human instrument, rather than through inventories, questionnaires, or machines.

4. Qualitative research involves **fieldwork**. The researcher physically goes to the people, setting, site, or institution to observe or record behavior in its natural setting.

5. Qualitative research is **descriptive** in that the researcher is interested in process, meaning, and understanding gained through words or pictures.

6. The process of qualitative research is **inductive** in that the researcher builds abstractions, concepts, hypotheses, and theories from details.

Human behavior is significantly influenced by the setting in which it occurs; thus one must study that behavior in situations. The physical setting e.g., schedules, space, pay, and reward and the internalized notions of norms, traditions, roles, and values are crucial contextual variables. Research must be conducted in the setting where all the contextual variables are operating.

Past researchers have not been able to derive meaning from experimental research. The research techniques themselves, in experimental research, [can] affect the findings. The lab, the questionnaire, and so on, [can] become artifacts. Subjects [can become] either suspicious or wary, or they [can become] aware of what the researchers want and try to please them. Additionally, subjects sometimes do not know their feelings, interactions, and behaviors, so they cannot articulate them to respond to a questionnaire.

One cannot understand human behavior without understanding the framework within which subjects interpret their thoughts, feelings, and actions. Researchers need to understand the framework. In fact, the “objective” scientist, by coding and standardizing, may destroy valuable data while imposing the researcher’s world on the subjects. Field study research can explore the processes and meanings of events.

## The Genealogy of the Quantitative and Qualitative Research Paradigms

There are some fundamental differences between qualitative and quantitative research paradigms which lie primarily at the level of assumptions about research (epistemological and ontological assumptions) rather than at the level of the data.

In general, a lot of quantitative research tends to be **confirmatory and deductive**. But there are many quantitative researches that can be classified as exploratory as well. And while much qualitative research does tend to be exploratory, it can also be used to confirm very specific deductive hypotheses. The problem is that some scholars don’t acknowledge the richness of both traditions. They don’t recognize that both qualitative and quantitative research can be used to address almost any kind of research question.

So, if the difference between qualitative and quantitative is not along the exploratory-confirmatory or inductive-deductive dimensions, then where is it? The heart of the quantitative-qualitative debate is philosophical, not methodological. Many qualitative researchers operate under different epistemological assumptions from quantitative researchers. For instance, many qualitative researchers believe that the best way to understand any phenomenon is to view it in its context. They see all quantification as limited in nature, looking only at one small portion of a reality that cannot be split or unitized without losing the importance of the whole phenomenon. For some qualitative researchers, the best way to understand what’s going on is to become immersed in it. Move into the culture or organization you are studying and experience what it is like to be a part of it. Be flexible in your inquiry of people in context. Rather than approaching

measurement with the idea of constructing a fixed instrument or set of questions, the researcher should allow the questions to emerge and change as they become familiar with what they are studying. Many qualitative researchers also operate under different ontological assumptions about the world. They don't assume that there is a single unitary reality apart from our perceptions. Since each of us experiences from our own point of view, each of us experiences a different reality. Conducting research without taking this into account violates the fundamental view of the individual. Consequently, they may be opposed to methods that attempt to aggregate across individuals on the grounds that each individual is unique. They also argue that the researcher is a unique individual and that all research is essentially biased by each researcher's individual perceptions. There is no point in trying to establish "validity" in any external or objective sense. All that we can hope to do is Focusing Qualitative Inquiry

Deciding on a topic locates your research; this is where you are researching. Framing a qualitative question is harder, because it requires that you think about what needs to be asked in this research location as well as what you can ask and reasonably expect have answered given your resources and skills. A research question is a starting point only if it is researchable. One of the most difficult tasks for the beginning researcher is to think qualitatively before the research begins. A researchable qualitative question is not the most obvious outcome of reflecting on a topic. The big first questions are as follows:

- *What* needs to be asked?
- *How* should it be asked?
- What data are required, and
- where will the researcher have to go to find answers to these questions?
- *Can* it be asked, and if so, what sort of a researcher or research stance is needed?

Ethical as well as practical considerations must be explored. If you are planning to do research with vulnerable populations (such as groups in schools, prisons, hospitals, or some cultural groups), the researcher must obtain special permission at the institutional level as well as at the guardian or parent, care provider, and individual levels. Once the researcher has obtained access, they must have in place strategies to protect the identity of the participants. Consider who will have access to the raw data. How will it be stored? How will identities of participants or places be protected? Who will have access to the final report? And who will need to review it or approve it prior to publication? interpret our view of the world as researchers.

## The Assumptions of Quantitative Designs

In explaining the purposeful nature of qualitative inquiry, all of these components of the research process mesh to make the best possible end product. Thus each method is a distinctive way of approaching the world and data.

The concept of methodological congruence does not mean that data sources or analysis methods are predetermined for the researcher once he or she has chosen a method. It isn't that easy. Nor does it mean that a researcher has no flexibility once he or she has embarked on a particular path. *Methodological congruence* refers to the fact that projects entail congruent ways of thinking. The researcher working with phenomenology must learn to think phenomenologically if this fit the purpose, method, and data is to work well. If you are working with grounded theory, it is important that you learn how to think as a grounded theorist. The same sorts of data (e.g., field notes) will be interpreted differently by researchers using different methods, and similar data analysis techniques (e.g., coding) employed by researchers using different methods will have quite different analytic results, *because each researcher is thinking a different way*.

Qualitative research is not just a matter of performing techniques on data; rather, each qualitative method is a specific way of thinking about data and using techniques as tools to manipulate data to achieve a goal. Each component of the research process is linked to the next, and the chosen method dictates combinations of strategies to be used in particular ways to ensure

consistency throughout the research process. Not all methods are as complete, but all methods entail certain distinctive ways of thinking.

#### Seeing Congruence by Doing It

In what follows, we present a fictitious project concerning human attachment.

If you have data from a previous study or a growing sense of your research interest, you might try applying what you read below to your approaches to that topic.

What is “human attachment”? Which literature should we look to? We have many choices—we could look at the literature on bonding between mothers and infants, at the family studies literature on family relationships, or even at the social support literature. We could extend this to the relationship literature on interaction, the literature on marriage, or the literature on mothering.

Given this topic (human attachment) and having identified a research context, the next step is to create a research question. Different questions will lead to us to particular methods, and the method in turn will help us to decide details of the research design, such as who the participants will be, what the sample size should be, how data will be created and analyzed, and, most important, what type of results we will obtain.

Let us explore the topic by conducting an *armchair walkthrough*—that is, by taking a mindful stroll through the topic and visualizing what it might look like when we anticipate doing the study using each of the three major methods sketched above. The first concern of all qualitative researchers is locating the project. The setting for the research must be one in which the phenomena of interest are likely to be seen frequently, and in an intense form. Those we choose to interview must be “expert participants,” with much experience with the phenomena of interest. We must deliberately and purposefully select a setting or context where we will best see what we want to study. We do not usually choose a place or a sample randomly, for we would then have to rely on luck to see what we are interested in; we do not choose the “average” experience, as then the characteristics of the phenomena are diluted and less evident.

### The Strengths/Integrity of Qualitative Research

Qualitative research is good at simplifying and managing data without destroying complexity and context.

Qualitative methods are highly appropriate for questions where preemptive reduction of the data will prevent discovery. If the purpose is to learn from the participants in a setting or a process the way *they* experience it, the meanings they put on it, and how they interpret what they experience, the researcher needs methods that will allow for discovery and do justice to their perceptions and the complexity of their interpretations. Qualitative methods have in common the goal of generating new ways of seeing existing data. If the purpose is to construct a theory or a theoretical framework that reflects reality rather than the researchers own perspective or prior research results, one may need methods that assist the discovery of theory in data.

If the purpose is to understand phenomena deeply and in detail, the researcher needs methods for discovery of central themes and analysis of core concerns. Each of these suggestions has a flip side. If one knows what is being hypothesized and what they are likely to find, if one do not need to know the complexity of others’ understandings, if one is testing prior theory rather than constructing new frameworks, or if one is simply describing a situation rather than deeply analyzing it, it is possible that one should not be working qualitatively. Perhaps the research question that one is tackling with in-depth interviews would be more properly addressed with a survey. In such a case, the best advice is that you review your general purpose and ask yourself if it can be addressed better that way.

Qualitative research is a proper response to some, but not all, research needs. We have both learned to be alert to risk in projects where the researcher is working qualitatively for the wrong reasons. These include reasons that are negative rather than positive (“I hate statistics” or “I can’t use computers”) and assumptions that qualitative research is more humanistic, moral/ethical,

worthy, feminist, radical, or admirable. The point here is not just that you need a good reason for working qualitatively because of both practical and ethical considerations, but also that you need to have thought your way to this method if you are to start learning it. Good qualitative research requires purpose, skill, and concentration, and unless you recognize this and your purpose is clear and committed, the task will quickly become onerous.

As the purpose points to the research question and the research question informs the choice of method, so the method fits the type of data to be collected. However, selecting a method and making data are not discrete events in the research process; rather, they are aspects linked by common ways of thinking. The distinction between a method and a way

of making data is not at all rigid. Many researchers would speak of focus groups or participant observation as methods: They are ways of making data, with goals that fit these ways of making data, and each has a methods literature.

The fact that you are interviewing people tells an observer nothing about why, or about what you will do with those data. But the content and form of interviews and what you see in them will be different for different methods. This is because *how you think about the data* differs from method to method.

Qualitative data typically consists of words while quantitative data consists of numbers. The two can be synchronized for better result, for the following reasons:

All qualitative data can be coded quantitatively. Anything that is qualitative can be assigned meaningful numerical values. These values can then be manipulated to help one achieve greater insight into the meaning of the data and to help examine specific hypotheses. Even the simple act of categorizing can be viewed as a quantitative one as well.

The point is that the line between qualitative and quantitative is less distinct. All qualitative data can be quantitatively coded in an almost infinite variety of ways. This doesn't detract from the qualitative information. Recognizing the similarities between qualitative and quantitative information opens up new possibilities for interpretation that might otherwise go unutilized.

All quantitative data is based on qualitative judgment. Numbers in and of themselves can't be interpreted without understanding the assumptions which underlie them.

The bottom line here is that quantitative and qualitative data are, at some level, virtually inseparable. Neither exists in a vacuum nor can be considered totally devoid of the other. To ask which is "better" or more "valid" or has greater "verisimilitude" or whatever ignores the intimate connection between them. To do good research we need to use both the qualitative and the quantitative.

### Limitations of Qualitative Research

- The aim of qualitative analysis is a complete, detailed description. No attempt is made to assign frequencies to the linguistic features which are identified in the data, and rare phenomena receives (or should receive) the same amount of attention as more frequent phenomena. Qualitative analysis allows for fine distinctions to be drawn because it is not necessary to shoehorn the data into a finite number of classifications.

- Ambiguities, which are inherent in human language, can be recognized in the analysis. For example, the word "red" could be used in a corpus to signify the color red, or as a political categorization (e.g. socialism or communism). In a qualitative analysis both senses of red in the phrase "the red flag" could be recognized.

- The main disadvantage of qualitative approaches to corpus analysis is that their findings cannot be extended to wider populations with the same degree of certainty that quantitative analyses can. This is because the findings of the research are not tested to discover whether they are statistically significant or due to chance.

## Conclusion

Any researcher steeped in the qualitative tradition would certainly take issue with comments about the similarities between quantitative and qualitative data.

In the end, people who consider themselves primarily qualitative or primarily quantitative tend to be almost as diverse as those from the opposing camps. There are qualitative researchers who fit comfortably into the post-positivist tradition common to much contemporary quantitative research. And there are quantitative researchers (albeit, probably fewer) who use quantitative information as the basis for exploration, recognizing the inherent limitations and complex assumptions beneath all numbers. In either camp, intense and fundamental disagreement about both philosophical assumptions and the nature of data. Increasingly, there are researchers who are interested in blending the two traditions, attempting to get the advantages of each. Social research is richer for the wider variety of views and methods that the analysis generates. The eclectic approach is thus not an option in educational research

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