



# 2

istock.com/ToriArt

## BUILDING ON QUANTITATIVE RESEARCH KNOWLEDGE TO IMPLEMENT QUALITATIVE RESEARCH

## SKILL

Develop the skill of knowing how qualitative research differs from quantitative research.

## WHY THE SKILL IS IMPORTANT

It is not enough to understand how qualitative researchers “think”; we also need to actually “see” how they practice research. There are two skills involved in learning the characteristics of qualitative research. The first is that researchers need to build or scaffold onto what they already know about research. This often means that they have some foundation in quantitative approaches, typically learned through their psychology classes. They then need to be “lifted over” into qualitative research in a way they can understand and add to their understanding. As one student said, “I had to retrain my brain to think as a qualitative researcher” (K. Doud, personal communication). The best way to do this is to develop a one-for-one comparison between the parts of quantitative research and the parts of qualitative research. Thus, the skill of learning the essential characteristics of qualitative research involves distinguishing it from quantitative research. Second, with this learning in mind, the next skill can be advanced—understanding the major characteristics of qualitative research and being able to “see” them in a published qualitative research study. To accomplish this, we can analyze a quantitative journal article and see how the authors incorporated the major characteristics of quantitative research. We can also look at a qualitative journal article, examine the elements of qualitative research that went into it, and then make comparisons between a qualitative and a quantitative study.

## CHARACTERISTICS OF QUANTITATIVE RESEARCH IN A QUANTITATIVE JOURNAL ARTICLE

The characteristics of a good quantitative study can be seen through an examination of the aspects of the process of research that typically appear in a journal article, as shown in Table 2.1.

In a quantitative journal article, the design is set with hypotheses and research questions identified in advance and the data collection (and analysis) organized before the project begins. These features do not change during the administration of a project. Before the study, the investigator specifies the hypotheses and questions, selects the constructs or variables to be measured, and identifies instruments (with good validity and reliability scores) to be used in the study. These hypotheses and questions, in turn, narrow the variables to be examined, and although the variable list is small, the  $N$ , or number of participants in the study, is large because of the demands of specific statistical

**TABLE 2.1 ■ How Quantitative Characteristics Are Manifest in a Quantitative Journal Article**

Quantitative Characteristics	How Characteristics Are Manifest in a Quantitative Journal Article (Look-Fors)
Fixed design	Hypotheses set in advance; design does not change in field; fidelity of procedures emphasized
Researcher's views	Researcher identifies questions, selects instruments, selects statistics
Narrowed picture	Reduced to specific variables; large <i>N</i>
Researcher bias absent	Researcher not mentioned; bias kept out of study
Contrived setting	Artificial laboratory setup; survey sent at distance
Closed-ended data collection	Specific instruments, scales, measures used
Structured writing format	Accepted structure: introduction, literature review, methods, results, conclusions

tests for certain sizes to meet test assumptions. The researcher is not usually mentioned personally in a quantitative study (e.g., his or her experiences and interpretations), and the investigator tries to keep bias that might influence the outcomes out of the project. Often quantitative studies are conducted in a laboratory setting under tight controls or administered through the mail, as in survey research. The questions on instruments administered are closed-ended, with forced-choice response categories and scales that are continuous or categorical. The data analysis procedure is then to enter the scores into a computer file and to analyze the data using statistical programs. In the end, we see a quantitative article that typically fits a prescribed structure, moving from the introduction (statement of the problem), through the literature review and the methods, and on to the results and the discussion.

## CHARACTERISTICS OF QUALITATIVE RESEARCH IN A QUALITATIVE JOURNAL ARTICLE

What makes a journal article a qualitative study? Books and articles on qualitative research often present definitions of qualitative research, but those studying this form of research do not always know how to apply these definitions to actual qualitative articles to see how the key ideas in definitions manifest themselves in the articles and in specific research studies. John recalls teaching a group of faculty the basics of qualitative research, and one individual, a hard-discipline scientist, came up to him at the end of the session and said that he saw no difference between quantitative and qualitative research.

He obviously did not understand the key components of qualitative research and how they are manifest in an actual published study.

This discussion is an attempt to remedy this situation, and we believe that to get to a point of “seeing” the meaning of qualitative research unfolding in a study, we need to go through several steps. As shown in Table 2.2, we can take the core characteristics of quantitative research and apply them now to what we hope to see in a published qualitative research journal article. In the table, we have put in parentheses the core characteristics of qualitative research as first introduced in Chapter 1. This discussion will expand on these core characteristics and also relate them to a published journal article.

As shown in Table 2.2, we would expect that the design of the study would change during the project. New questions become important to ask as researchers clarify what they seek to learn. New participants and sites may be studied to better understand the core learning to be gained. The original plan for analysis may change as new information becomes available that needs to be probed. In addition, when we read a qualitative article, we “hear” the participants’ voices through quotations that may be entire paragraphs or single phrases or sentences. How participants speak and frame answers to questions is of utmost importance. What emerges from this qualitative analysis is a complex picture—not simply cause-and-effect thinking or group comparison thinking but the complexity of human life. We will find multiple themes and codes that show this complexity. After reading a qualitative study we will say to ourselves, “This is a complex subject with many moving parts.” In reading the study, we will learn about the researchers—what their

**TABLE 2.2 ■ How Qualitative Characteristics Are Manifest in a Qualitative Journal Article**

Qualitative Characteristics	How Characteristics Are Manifest in a Qualitative Journal Article (Look-Fors)
Emerging design (exploratory, process)	Changing research questions, changing data collection
Participants’ views (voices of the people; multiple perspectives; small <i>N</i> ; marginalized populations)	Quotations from participants
Complex picture (complex understanding; sensitive topics)	Multiple codes and themes
Researcher bias present (reflexivity)	Remarks by authors about their experiences and interpretations
Context/setting important (context or setting)	Data gathered on site; setting discussed
Open-ended data collection (exploring)	Open-ended interviews/observations
Inductive data analysis (exploring; contrasts)	Analysis from specific to general
Flexible writing structure	Structure may begin with authors; writing different than traditional approach of introduction, literature review, methods, results, conclusions

experiences were with the phenomena under study and how their experiences shaped their interpretations of what they saw. The researchers will be present from the written work. We will also be given some detail about the setting or context in which the study took place. We should be able to visualize the setting and know details about the people who interact in that setting. We will gain this knowledge from the interviews asking general, open-ended questions to solicit the wide range of views from participants. The analysis of these open-ended views will build “from the ground up,” as they say. We see the quotations, which are embedded within larger codes, and the multiple codes providing evidence for larger themes. The larger themes are then spun into a story, and the story is presented often with an added visual picture. We read results from the raw data into broad conceptualization. This qualitative project may not fit into our traditional ways of seeing research presented. It may start with a personal story, or the researcher may describe methods in a piecemeal fashion throughout the study rather than in one separate section, or the literature review segment may not exist. We need to be open to a creative writing project that may not fit the traditional way of staging the report of research.

## COMPARING QUALITATIVE AND QUANTITATIVE CHARACTERISTICS ON A CONTINUUM

---

What can be said is that these characteristics might be seen as forming two ends of a continuum, with qualitative articles tending toward the qualitative end and quantitative articles leaning toward the quantitative end. Although a rigid dichotomy is not a useful heuristic to understand these two forms of research, their differences can be highlighted by a continuum. Studies tend to be weighted more heavily toward one end of the continuum than the other. How many end points of one approach (say qualitative) would result in calling a study qualitative is a debatable point. We tend to think that if all of the end points, to a certain extent, are represented by one approach (qualitative or quantitative), we would consider the study as lodging in that approach. Table 2.3 helps illustrate the two ends of this continuum of research, from the qualitative end on the left to the quantitative end on the right.

***Qualitative and quantitative research should not be seen as opposite approaches but two different perspectives on a continuum.***

## EASY- AND HARD-TO-SEE COMPONENTS

---

In terms of these continua, some are easy to spot in a qualitative or quantitative study, and some are difficult to identify. Let us start with the easy-to-see components that differentiate quantitative versus qualitative research in journal articles. We can easily see in the results sections of both types of journal articles a difference between the *report of numbers or statistics* and the *report of themes* that are discussed by authors in a “Results”

**TABLE 2.3 ■ The Continuum of Qualitative and Quantitative Research**

Qualitative Research	A Continuum	Quantitative Research
Emerging design	↔	Fixed design
Participants' views	↔	Researchers' views
Complex picture	↔	Narrowed picture
Researcher bias present	↔	Researcher bias absent
Context/setting important	↔	Contrived setting
Open-ended data collection	↔	Closed-ended data collection
Inductive data analysis	↔	Deductive data analysis
Flexible writing structure	↔	Highly structured writing

or “Findings” section. Also, if we look closely at the research questions, we can see that the quantitative study contains hypotheses or questions that specify in a *closed way* the relationships among variables or, alternatively, a comparison of groups. For example, a researcher might ask, “To what extent do you feel that early career decisions are needed soon after college? Response possibilities would be: (4) to a great extent (3) to some extent (2) to little extent and (1) never. In qualitative research, we do not use variables and instead present a central phenomenon (or key idea) that we want to explore in an *open-ended way* by asking participants general questions about it. For example, the question might be asked, “What have you experienced as you have waited for a liver transplant?” The participants would then give their responses without predetermined categories of response. The writing style also differs. In quantitative research studies, we see a “Literature Review” section that may contain a theory. The extensive literature and theory put a space (or *objective distance*) between the researcher and the reader and thus contrast with the more *personal* style of qualitative research, where the researcher’s experiences might be shared with the reader as well as his or her personal opinion (in the form of personal pronouns). Another easy-to-see aspect is in the writing structure. The typical quantitative project follows a *set structure* of introduction, literature review, methods, results, and discussion, whereas the qualitative structure may vary. It may *start with the personal views* of the author or interweave the methods with the results.

Some differences between the two approaches are harder to see. In quantitative research many decisions are made *before the study begins*: the identification of variables to study, the use of select instruments, and the types of statistical analysis, to list but a few. In qualitative research, the research questions are open ended, allowing the participant to identify the relevant factors (such as the counterparts to variables) and thus allowing them to *emerge*. No set instrument is made in advance; indeed, the researcher is the instrument of data collection and poses general questions. These elements may not be made explicit, and therefore they are more difficult to see in a study.

The way the researcher analyzes the data, from the raw data to more general perspectives, may also not be evident. In quantitative research, the process of research often consists of advancing a theory, deductively testing it, and conducting this test by collecting and analyzing data. This is a *deductive* process of research. In qualitative research, the inquirer uses an **inductive** process of gathering data and then making sense of it by grouping data segments into codes, and then themes, and finally larger perspectives. Although both quantitative and qualitative researchers may use deductive and inductive logic, this general difference typically holds for most studies. In most studies, it is difficult to tell when deductive or inductive logic is being used because the researchers do not tell us what logic they are using.

In quantitative research, the investigator reports detailed results about the relationships among variables. This is a *detailed* and explicit analysis of variables. Often these variables are linked with one variable influencing another variable (which, in turn, might influence a third variable in a causal chain). In qualitative research, the results often go in the opposite direction; rather than a focused attention on variables and their relationships, the qualitative findings address the *complexity* of the situation. Often the factors explored are interactive—they go back and forth rather than one way as in quantitative research. It may be hard for the reader to discern when cause-and-effect thinking is being used and when the complexity of a situation is being presented.

Also, in qualitative research complexity is presented through *multiple perspectives* introduced in the themes. Often these perspectives may not be easily seen in a theme discussion. Finally, in quantitative research the results are presented as the *view of the researcher*. It is the researcher who conducts the analysis and makes an interpretation. It is the researcher who selects the theory, selects the variables, and forms the hypotheses or research questions. Typically the researcher does not explicitly take ownership for this—it is assumed, and therefore it may be difficult to see. In qualitative research, on the other hand, the inquirer presents the *views of participants*. In most cases, this can be seen when researchers communicate the findings using direct quotations from study participants. But in some qualitative articles, few quotations are used, and the multiple perspectives of participants are simply reported. In these studies it is hard to see participants' views.

## Summary

To understand the unique characteristics of qualitative research, it is useful to have the skill of differentiating qualitative research from quantitative research. One way to easily see the difference is through a comparison of how the research

appears in both quantitative and qualitative published journal articles. Unquestionably, some of the differences are easy to see and others more difficult.

## Activity

Examine the following quantitative article:

Constantine, M. G., Wallace, B. C., & Kindaichi, M. M. (2005). Examining contextual factors in the career decision status of African American adolescents. *Journal of Career Assessment*, 13(3), 307–319.

Using Table 2.1, go through each characteristic of quantitative research, and determine how each

characteristic was used in the quantitative study. Then examine the following qualitative article:

Brown, J., Sorrell, J. H., McClaren, J., & Creswell, J. W. (2006). Waiting for a liver transplant. *Qualitative Health Research*, 16(1), 119–136.

Using Table 2.2, go through each characteristic of qualitative research, and determine how it was used in the qualitative study.

## Further Resources

In John's book on educational research, you will find an extended discussion of the differences between qualitative and quantitative research and how they differ on a continuum:

Creswell, J. W., & Guetterman, T. C. (2019). *Educational research: Planning, conducting,*

*and evaluating quantitative and qualitative research* (6th ed.). Upper Saddle River, New Jersey: Pearson.