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Research Methods

by

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Researchers conduct studies to answer questions; questions which run the gamut from inquiries about why something works the way it does to musings about how much one thing affects something else.

Broadly speaking, questions about why something works the way it does suggest the need for an explanation or theory as the answer. Whereas, questions about how much one thing affects another call for some kind of measurement as the answer.

As a rule, to answer “why” questions, you need to use a qualitative research method; however, to answer “how much” questions, you need to use a quantitative research method. If your research addresses both types of questions, then you will need to combine both qualitative and quantitative research methods in a mixed-method study.

Where do these all important research questions come from?

The answer is that you make them up to suit the purpose of your study.

The Research Process

The table below, from *Student to Scholar: The Guide for Doctoral Students*, summarizes the six steps in the research process (Levasseur, 2006, p. 69):

Step	Purpose
Problem Statement	Define your broad problem area.
Literature Search	Ground your dissertation research.
Purpose Statement	Specify the niche you intend to study.
Research Questions/Hypotheses	Determine your goals.
Research Method	Specify your general approach.
Research Design	Create your specific research plan.

The first three steps of the research process are the focus of another report—*Finding a Dissertation Topic*—available from MindFire Press. Suffice it to say in this regard that a good researcher follows a process of identifying the purpose of a

research project, such as a dissertation study, by examining the relevant literature in the field regarding a broad problem of practical significance that needs further study. This grounding of the research project in the literature ensures that it will move the boundaries of knowledge forward in a way that builds on what other researchers have found in their previous studies.

For example, if prior research has resulted in the development of a theory of why or how something works (e.g., a transformational leadership style leads to higher follower performance than a traditional leadership style), then a need may exist to test this theory by deriving one or more hypotheses based on the theory and conducting a quantitative research project (e.g., an experiment) to test these hypotheses.

Alternatively, if the literature on a topic offers little in the way of explanation for how or why something works (e.g., why so many technology-based projects fail), then a need may exist for an in-depth qualitative study (e.g., using grounded theory methodology) aimed at developing a theory of how or why it works.

In this report, we will concentrate on step 5 of the research process, the choice of a research method. Step 6, which involves specifying the details of a research design to implement the research method, is beyond the scope of this article. However, *Student to Scholar: The Guide for Doctoral Students* examines this important last step in detail.

Overview of Research Methods

Once you have selected a research paradigm for your dissertation research—qualitative (for theory building), quantitative (for theory testing), or mixed-method (for both), you must decide what specific research methods will yield the best results. There are numerous research methods, some of which you may have to study in depth prior to embarking on your specific research project. We will briefly describe several, along with their primary purposes.

One of the most popular qualitative research methods is the case study. Most students are familiar with cases used in face-to-face and online classes for instructional purposes. However, when used as a research method, the case study has a very different purpose. According to Yin (2003), the goal of a case study is "to expand and generalize theories (analytic generalization) and not to enumerate frequencies (statistical generalization)" (p. 10).

Other qualitative methods are ethnography (used to study the culture of a group of people), phenomenology (used to study the essence of a common experience),

grounded theory (used to develop a theory based on qualitative data), and action research (used in an iterative fashion to initiate changes, observe the effect of the changes, and make additional changes as required to improve the performance of a system).

Quantitative research methods fall into three main categories. The first is the classic experiment in which the researcher carefully selects test and control groups at random from a population, administers a treatment to the test group, measures the differences between the test and control groups, and statistically analyzes the differences to confirm or refute one or more hypotheses.

The second category involves the analysis of existing data. Typically, this takes the form of a quasi-experiment in which a change, either intentional or not, (a) has affected a subset of the population (not chosen at random) differently than the rest of the population, or (b) has affected all of the population in some way different from the past. In each case, it is possible to argue, although not as convincingly as for a true experiment, that the differences between the affected and unaffected segments of the population (in the first case) or between the population after versus before the change (in the second case) is a result of the change that took place.

For example, if the management of a firm believes that providing a new benefit, such as a shorter work week, flex-time, or job sharing, will motivate its workforce and lead to higher morale and performance, they may decide to make this new option available. By comparing the morale and performance of employees who opt for this new benefit to those who don't and the historical vs. current performance of those who do, the company can estimate the effectiveness of the new benefit.

Note: Another form of existing data analysis, which is a viable option for students who are good in mathematics, is meta-analysis. "Meta-analysis can be best understood as a form of survey research in which research reports, rather than people, are surveyed" (Lipsey & Wilson, 2001, p. 1). I used meta-analysis in my dissertation research.

The third category of quantitative methods involves, like experiments, the collection of new, primary data. However, unlike experiments, which obtain objective measurements, this category, called survey research, focuses on the collection and analysis of subjective data in the form of opinions self-reported in questionnaires by study participants. Everyone who has filled out a questionnaire is familiar with the variety of questions asked, from personal information to ratings of any number of factors on various scales.

When appropriately designed (i.e., to provide valid and reliable data), surveys provide data that is useful in testing the validity of hypotheses about the association (i.e., correlation) of variables. While evidence from survey research is not as inherently strong as evidence from experimental research, it is often the only way to get meaningful quantitative assessments of important (i.e., subjective) factors that researchers cannot otherwise measure, such as the effect of leadership style on employee job satisfaction.

Conclusion

The purpose of this article was to (a) provide you with a framework for conducting research (i.e., the research process), (b) describe the inherent connection between research questions and research methods, and (c) briefly describe some of the most commonly used research methods. Hopefully, the information in this article will enable you to find an appropriate method for a research project, such as the dissertation.

References

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- Lipsey, M. W., & Wilson, D. B. (2001). *Practical meta-analysis*. Thousand Oaks: Sage.
- Yin, R. K. (2003). *Case study research: Design and methods* (3rd ed.). Thousand Oaks: Sage.

If you enjoyed this article, be sure to share it with other doctoral students.

Finally, to learn more about the research process, go to www.mindfirepress.com or www.Amazon.com and order a copy of *Student to Scholar: The Guide for Doctoral Students* by Robert E. Levasseur, Ph.D., the book from which most of this information on research methods came.

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