A Reference Guide to Basic Research Design

A Visual System for Research Designs in Education and the Social & Behavioral Sciences

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Learning Solutions

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Dedications

I’d like to dedicate this book to all my past supervisors, professors, teachers, and dedicated students. They have provided me the support, skills, interest, and motivation to continue the lines of scholarly work and achievement in a never ending effort to expanding our minds.

—Alex

I’d like to dedicate this book to my wife Karen and my three boys, Aiden, Ethan and Ashton. I love you. Thank you!

—Tom
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Preface

Objective

The objective of this reference book is to visually present basic quantitative, qualitative, and mixed methods research designs in education and the social and behavioral sciences in a way that students and researchers can readily understand and accurately apply in their own investigations. We have discovered, in teaching research methods courses and supervising dissertation committees, that students often have a difficult time conceptualizing the most appropriate research design, en route to collecting the data and answering the stated research questions or hypotheses. Based on this observation, we sought to find the best text that could help resolve this critical issue. What we discovered is that most research methods texts are more exhaustive, covering the entire spectrum of the research process while devoting a single chapter, or a few sections embedded throughout (often incomplete) to research designs. Furthermore, the authors’ often present the research designs without quality visual representations and sound real-life examples. In addition, in the Methods portion of published manuscripts, authors often do not include, or partially include, an accurate description of the research design that was employed. Lastly, there are many inconsistencies and variations, both within and between textbooks in research in education and the social and behavioral sciences, with the use of the terms method, research, approach, and design. We offer a solution to this problem that is discussed in more detail later in this book. These inconsistencies lead to more confusion and difficulties when attempting to conceptualize and choose the design that best fits the research problem and subsequent questions or hypotheses. Considering these aspects, students often find themselves lost at that critical part of the research process when attempting to (a) choose a design that will allow for the acquisition of data best suited to answer their research questions or examine their hypotheses and (b) incorporate a design into the Procedures section of the Methods chapter of the dissertation.

The aim of this book is to help students select appropriate designs for their research. We cover the basic designs in quantitative, qualitative, and mixed methods. Although the book does not go into great detail regarding the theory or philosophy of research designs, we do provide recommended texts for the reader who is interested in a more thorough understanding of a particular approach, method, or design. The intent of this book is to give students and researchers a quick reference guide for conceptualizing and creating a design that best fits the primary research question. Thus, it is an applied text, using visual aids and real-world examples, rather than covering foundational theoretical issues.
This book is designed to improve the student’s ability to conceptualize, construct, test, problem solve and acquire knowledge, all of which are characteristic of scientific inquiry and the creative process required when conducting research. Visually delivering the information coupled with relevant examples can optimize the learning process and subsequent application of learning. The book is meant to cover the most basic or common research designs currently used in educational and social and behavioral research. Referring to these research designs as “common” or “basic” is somewhat a misnomer, and does not mean that the designs are less powerful or that the results yielded will have less meaning. In reviewing many articles over the years, we have noticed that, all too often, researchers use unnecessarily complex research designs, which complicate the application and subsequent statistical analyses leaving much more room for error. Parsimony is actually a favorable word in science, that is, a design should be as complex as it needs to be and, at the same time, as simple as it needs to be.

Audience

This book is written for (a) undergraduate students working on honors theses, (b) graduate students working on theses, and (c) graduate students working on dissertations. This book will assist all students who (a) have a basic understanding of research methods, (b) are in the process of conducting research, or (c) plan on conducting research at some point during their careers. Furthermore, it can also be used as a tool by professors who are either teaching research courses or supervising students on theses and dissertations. Specifically, professors will find this reference guide useful in assisting and guiding students interested in improving their understanding of how research is set up and conducted. The target is the researcher in the fields of education, sociology, psychology, nursing, and other human service fields. We have attempted to create a visual system in the form of a practical, easy-to-follow reference guide to help in the conceptualization and development of many of the common research designs. We offer examples of this visual system “in action” for each of the designs presented with the use of published studies. In addition, further recommendations and suggestions are provided for those interested in acquiring a more comprehensive understanding of basic research designs. The book includes the core designs that are used by quantitative, qualitative, and mixed method researchers.

Features

We have maintained a singular focus on research designs and have provided an example for each research design with a relevant peer-reviewed article. We have incorporated a number of features throughout
the book that will assist students in designing their own studies. In each example, we summarize the procedures and include the relevant variables in a design notation model. In many cases, the research article examples include multiple research questions or hypotheses. However, for the sake of clarity, we attempt to present one overarching research question that summarizes the major goal of the study. In some instances for qualitative research we include a research aim. In addition to the example research designs, we also include brief discussions on (a) the relevant aspects of research, (b) different types of designs, (c) the scientific method, and (d) a list of recommended readings pertaining to each area.