

# **RESEARCH IN SPECIAL EDUCATION**



Second Edition

# RESEARCH IN SPECIAL EDUCATION

Designs, Methods, and Applications

*Edited by*

**PHILLIP D. RUMRILL, JR.**

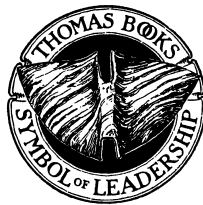
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*For Jean and Gary . . . BGC*

*For Lee and Larry . . . ALW*





## PREFACE

This second edition was written as a text and resource guide for graduate-level students, practitioners, and teachers in the fields of special education, disability studies, early intervention, school psychology, and child and family services. The primary purpose of the book is to offer a broad-based examination of the role of scientific inquiry in contemporary special education. As with the first edition, which was published in 2001, our aim was to provide a comprehensive overview of the philosophical, ethical, methodological, and analytical fundamentals of social science and educational research—as well as to specify aspects of special education research that distinguish it from scientific inquiry in other fields of education and human services. Foremost among these distinctions are the research beneficiaries, i.e., children with disabilities, their parents, and special educators; the availability of federal funds for research and demonstration projects that seek to improve educational outcomes for children with disabilities; and the historical, philosophical, and legislative bases for the profession of special education.

This new edition represents a revision of more than 40 percent in comparison to the 2001 volume. We added more than 150 new references and thoroughly updated every chapter with new developments in research topics, designs, and methods that have emerged over the past decade in the field of special education. We also added considerable text related to evidence-based practice and quality indicators for special education research in a design-specific context.

Like the 2001 version, this second edition is divided into ten chapters. Chapter 1 establishes the theoretical underpinnings of social scientific inquiry; provides a foundation in the philosophical, epistemological, and methodological considerations related to the design and execution of research in general and special education research in particular; and discusses the broad purposes of research in special education and disability studies. Chapter 2 addresses issues that are preparatory to designing and evaluating special education research, such as sources of research ideas,

translating research ideas into research hypotheses, identifying variables, and sampling issues. Chapter 3 discusses key measurement and statistical concepts used in the quantitative research tradition, including reliability and validity of measurement instruments; the purposes of descriptive, inferential, and nonparametric statistics in analyzing numerical data; and selected methods of statistical analysis. Researchers will note an expanded and updated section on the psychometric properties of educational and psychological instruments as well as a new section in Chapter 3 devoted to nonparametric and multivariate statistics. Chapter 4 reviews ethical issues and guidelines for the design, implementation, and reporting of research in special education. Chapter 5 addresses key criteria for evaluating the quality of special education research, drawing valid inferences from results, and generalizing findings from the research sample to the target population.

Chapters 6, 7, and 8 review the wide range of quantitative, qualitative, and integrative approaches to conducting research in special education, and they feature examples of these designs that we drew from the contemporary educational and disability studies literature. All three of these chapters have been completely updated with new examples and new text describing topic areas and research methods that are most commonly seen in the special education literature. Chapter 6 addresses intervention/stimulus, relationship, and descriptive studies in the quantitative paradigm. Chapter 7 discusses qualitative research methods as they apply to special education. Chapter 8 examines and categorizes a variety of narrative literature reviews according to their purposes. Chapter 9 presents a published research article section by section; annotates the components and composition of a research report; and provides a protocol that students, practitioners, and educators can use to evaluate the technical soundness and scientific merits of published research articles. The final chapter addresses future trends in special education research as they apply to a variety of stakeholders (e.g., administrators, policymakers, educators, researchers, children with disabilities, parents, funding agencies, consumer advocates).

Because this book was written as an introductory text for graduate students and practitioners in special education, we focus much of the information contained herein on the role of the reader as a “professional consumer” of research. In so doing, we not only orient the student or practitioner to the fundamentals of research design, we also introduce him or her to the professional literature in this dynamic field of inquiry. Like the companion text written by James Bellini and Phillip Rumrill, *Research in Rehabilitation Counseling* (Charles C Thomas Publisher, 2009), this book provides the “basics” that one would need to begin conducting a research investigation, but we would encourage that person to supplement this book with course-

work in statistics and advanced research design before initiating an empirical study.

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# **RESEARCH IN SPECIAL EDUCATION**



## Chapter 1

### INTRODUCTION TO RESEARCH IN SPECIAL EDUCATION

The purpose of this chapter is to establish practical and scientific bases for the special education research enterprise. We begin with an introduction to and overview of the field of special education. We then proceed with a discussion of the role that research plays in developing a profession's knowledge base, with special attention given to ways of knowing and the defining properties of scientific inquiry in an applied field such as special education. We conclude by synthesizing our discussions of the field of special education and general scientific principles into a summary examination of the current special education research scene—including the primary goals of special education research, its relevance to practice, and how research findings in our field are disseminated to and used by stakeholders in the education of children with disabilities.

#### THE PROFESSIONAL PRACTICE OF SPECIAL EDUCATION

Special education is a multifaceted and extensive service delivery system. The Twenty-eighth Annual Report to Congress (U.S. Department of Education, 2009) documents that, in the 2004 school year, over seven million American children with disabilities received special education services. Students in special education range from 0 to 21 years in age and are identified as having specific learning disabilities, speech and language impairments, mental retardation, other health impairments (including attention deficit hyperactivity disorder), emotional disturbance, autism, multiple disabilities, orthopedic impairments, traumatic brain injuries, visual impairments, hearing impairments, deaf-blindness, and developmental delay. Because the characteristics and needs of students with disabilities vary so dramatically, a vast

number and array of professionals are needed to attempt to meet the needs of this large and diverse population. As of fall 2003, approximately 440,000 special education teachers and hundreds of thousands of other educational professionals (e.g., teacher aides, psychologists, speech pathologists, physical therapists, vocational education teachers, and interpreters) were employed in the delivery of special education services throughout the U.S. and outlying areas (U.S. Department of Education, 2009). Moreover, a variety of policies, settings (e.g., general education classes with and without special education support, resource rooms, separate special education classes in public schools, special schools, institutions, hospitals), and service delivery techniques are used in hopes of attaining the most appropriate outcomes possible for students with disabilities.

Although large numbers of students with disabilities now attend American public schools, it is important to remember that a history of legislation and court decisions was necessary to provide children with disabilities, especially those with severe disabilities, access to these schools. Historically, the common belief that people with disabilities are not capable of learning kept them out of educational settings. Indeed, a common characteristic of the diverse group of children and youth served in special education is that they do not perform adequately given typical instruction in typical environments (Cook, Tankersley, Cook, & Landrum, 2000). However, over the past decades, it has been widely recognized that students with disabilities can learn and are entitled to an appropriate education (Hallahan, Kauffman, & Pullen, 2008). Thus, one of the central functions of special education involves the development, identification, and application of instructional practices to best educate these most difficult-to-teach students. Or, as Hallahan et al. (2008) stated, "the single most important goal of special education is finding and capitalizing on exceptional students' abilities" (p. 13).

Enacted to provide an appropriate education for students with disabilities, the Individuals with Disabilities Education Act (IDEA, originally the Education for All Handicapped Children Act) mandates that an educational team formulate an Individualized Education Plan (IEP) that stipulates the annual educational goals, objectives, services, and placement for each identified student with a disability. However, there is no guarantee that the individuals comprising a student's IEP team (e.g., general and special education teachers, specialists such as speech therapists, school administrators, and parents) will decide on goals, services, and placements that will produce optimal outcomes for the student about whom they are concerned. Further, IEPs serve only as a loose guide for day-to-day student-teacher interactions. Teachers are largely free to implement whatever instructional methods they see fit. Thus, the determination of what instruction students, even the most difficult-

to-teach students in special education, receive is largely made by teachers who strive to do their best for their students, but who often have not received sufficient relevant training and do not have enough time or resources to optimally meet the needs of their large and diverse classrooms of students. Furthermore, especially since the advent of the internet, teachers are inundated with information regarding recommended or best practices. Some of these recommendations have merit, some are well-intended but inaccurate, and occasionally some come from individuals who intentionally mislead educators to try to make a buck (Landrum & Tankersley, 2004). Unfortunately, most educators do not have the training to critically evaluate the research (or lack of research) supporting the effectiveness of recommended practices. It is little wonder, then, that interventions known to be effective are frequently not implemented, whereas some interventions that have been shown to be relatively ineffective are commonly used (Kauffman, 1999).

Reflective of the importance and necessity of developing, identifying, and applying effective educational policies and practices, the Council for Exceptional Children (CEC [the nation's largest advocacy group associated with exceptional students], n.d.) lists among its Standards for Professional Practice that special education professionals, "identify and use instructional methods and curricula that are . . . effective in meeting the individual needs of persons with exceptionalities." However, it is seldom an easy process to determine what method is most likely to result in appropriate outcomes for students with disabilities. Indeed, if selecting appropriate and effective teaching methods for students with unique and often problematic learning needs were simple determinations, there would likely be little or no need for special education.

Research is one way—we argue that it is the most reliable and valid way—for determining the relative educational efficacy of a given procedure. In fact, special educators have used research, in one form or another, to determine which policies and practices are most effective since the inception of the field. For example, one of the critical and recurring issues in special education is attempting to determine what educational environment (i.e., inclusive or segregated) results in the best outcomes for students with disabilities. To address this issue, dating back to the 1920s, special education researchers have conducted a series of research studies (known as the efficacy studies) comparing the outcomes of students with disabilities who have been included in general education classes to those of students placed in segregated special education classes (see Semmel, Gottlieb, & Robinson, 1979, for a review of this research). As detailed in the sections and chapters that follow, we hope that this text will enable special education professionals to use research as a means to better understand the enterprise of special education and identify effective instructional practices, with the ultimate goal of improving outcomes and quality of life for students with disabilities.