ROUTLEDGE

HANDBOOK OF CRITICAL EDUCATION RESEARCH

QUALITATIVE, QUANTITATIVE, AND EMERGING APPROACHES

EDITED BY MICHELLE D. YOUNG AND SARAH DIEM

Handbook of Critical Education Research

This handbook offers a contemporary and comprehensive review of critical research theory and methodology. Showcasing the work of contemporary critical researchers who are harnessing and building on a variety of methodological tools, this volume extends beyond qualitative methodology to also include critical quantitative and mixed-methods approaches to research. The critical scholars contributing to this volume are influenced by a diverse range of education disciplines, and represent multiple countries and methodological backgrounds, making the handbook an essential resource for anyone doing critical scholarship. The book moves from the theoretical to the specific, examining various paradigms for engaging in critical scholarship, various methodologies for doing critical research, and the political, ethical, and practical issues that arise when working as a critical scholar. In addition to mapping the field, contributions synthesize literature, offer concrete examples, and explore relevant contexts, histories, assumptions, and current practices, ultimately fostering generative thinking that contributes to future methodological and theoretical breakthroughs. New as well as seasoned critical scholars will find within these pages exciting new ideas, challenging questions, and insights that spur the continuous evolution and grow the influence of critical research methods and theories in the education and human disciplines.

Michelle D. Young is Dean of the Berkeley School of Education and Professor of Education Policy and Leadership at University of California – Berkeley, USA.

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Qualitative, Quantitative, and Emerging Approaches

Edited by Michelle D. Young and Sarah Diem

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To Dr. Jay D. Scribner—beloved mentor, friend, professor, and critical scholar. We strive to emulate what we learned from you in our work by fostering opportunities for others to explore new ideas, engage around critical theories, build new strategies for exploration, and push the boundaries toward creating a just society.

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Preface

In their groundbreaking *Handbook of Qualitative Research*, first published in 1994, Denzin and Lincoln brought together qualitative research scholars to synthesize the activity and change taking place in the field. The editors described the change as a "quiet methodological revolution" (p. ix), through which new methodologies were offered that pushed the boundaries of traditional research practice in the social sciences. Through the handbook work, the editors and contributing authors not only offered a map of what was, they also provided wider and deeper access to cutting edge thinking and methods and, as such, fostered fertile ground for further extending thinking, theory, and the development of research tools.

It is now 2023, almost 30 years since Denzin and Lincoln's *Handbook of Qualitative Research* was first published, and researchers have continued to open up new approaches to research and theorizing. Scholars are linking research to social change in new ways; exploring further and deeper the interconnections of race, ethnicity, gender, language, socioeconomic status, age, religion, sexual identity, and dis/ability; and experimenting with new ways of gathering and understanding data.

Within these evolving approaches is another important trend: the use of critical theoretical frameworks. Specifically, a growing number of researchers are explicitly applying critical theories to engage in case studies, ethnography, narrative inquiry, policy analysis, historical and archival work, among others. Their work has brought new perspectives on social and educational dynamics, raised new and enduring questions about ethics, contradictions, politics, identity, and power, and it spurred more new approaches to data collection and analysis. Within this generative body of work is a network of scholars working to apply critical perspectives to quantitative methodologies. What many thought to be impossible—if not blasphemy—30 years ago is now a burgeoning area of scholarship.

With appreciation of the role Denzin and Lincoln's handbook played in our own journeys as social science researchers, and our understanding of how far the field has continued to evolve since 1994, the intention of this handbook is to similarly map the field. Mapping is a particular interest of ours. We began working together in 2007 at The University of Texas at Austin. Michelle D. Young was a faculty member at the time and developed a new course titled "Critical Policy Analysis," which she co-taught with Jay D. Scribner. The course had a significant impact on the methodological and theoretical trajectories of several of the graduate students in the class. One of those students was Sarah Diem, who worked with Young and a team of other graduate students to understand the landscape of critical policy analysis (CPA) (see Diem et al., 2014).

Since that time, Diem and Young have continued to collaborate and explore CPA, critical methodologies, and critical theories; to provide insight into the key questions critical

policy scholars were pursuing and the theoretical frameworks they used in their work and their methodological approaches; to foster collaborations that extend thinking and doing in this area; and to expand the network of scholars engaged in critical research of educational phenomena. In addition to organizing conference symposia around critical theory and methodologies, Diem and Young edited two special issues (Diem et al., 2019; Young & Diem, 2014) and edited a book on CPA (Young & Diem, 2017). These efforts provided publication and collaboration opportunities to some scholars who were finding it difficult to place their work in academic journals and helped to increase the visibility of critical policy work. Today, there are entire journals dedicated to critical theory and methodologies, and we are beginning to see work of this nature published in some of the top journals in the field. We are also seeing a growing network of scholars engaging in generative discussions and collaborations that are further developing critical forms of scholarship in education. We hope this handbook contributes to this momentum.

Organization of the Handbook

The ideas underpinning this handbook evolved over the course of a few years, and several purposes shaped its organization. First, we wanted to capture some of the field's flow and evolution—stories of how we got to now, if you will. We also wanted to provide insight into emerging questions, concerns, and practices from a diverse group of scholars actively exploring new ways of working with research questions, data, and collaborators, scholars who are pushing the boundaries of qualitative and quantitative research in education. Finally, we wanted to support the continued expansion of the community of scholars engaged in critical education research.

The study of educational and social phenomena have much in common. Though the fields are often thought of as separate, it has been our experience that researchers from both "fields" draw on similar theories and research strategies. In this handbook, we have taken an inclusive approach to bring critical scholars representing several disciplines together to map the landscape of critical research and theory. We believe doing so offers greater possibility for further evolution of theory and research strategy, as well as generative discussions around critical issues concerning the purpose, the processes, and the impact of research.

The handbook is divided into eight sections, each of which is discussed in great detail in each of the section introductions. Section One, ***Why Critical Research? Why Now?***, contains four chapters that explore the evolution of critical research, the focus and practice of critical research, and the paradigm wars. Section Two, ***Epistemology, Theory, and Paradigms***, contains six chapters exploring questions of theory, epistemology, ontology, and methodology, as well as the evolution of reflexivity and intersectional analysis. Section Three, ***Critical Qualitative Research Design***, contains seven chapters that examine critical research designs from case studies and participatory action research to ethnography and auto-ethnography. The section also examines designs that explore historical, archival, and narrative data sources. Section Four, ***Critical Quantitative Research Design***, explores the burgeoning body of research focused on the use of critical theories in quantitative research. The four chapters in this section demonstrate the impact of the use of critical theories on the tools and approaches used in quantitative research as well as how large datasets can be reimagined through a critical framing. Section Five, ***Critical Emerging Approaches***, explores newer approaches to mixing methodologies and exploring research questions, including the use of geographic information systems, network analysis, and multi-modal inquiry. Section Six,

Data Collection in Critical Research, explores approaches to collecting data using a critical perspective, including critical qualitative and oral history interviews, observations, and survey research. Section Seven, ***Critical Data Analysis***, includes five chapters that explore the use of critical frameworks in the analysis of data, including the use of data analysis software, data management, discourse analysis, data mapping, and content analysis. The final section, Section Eight, ***Politics and Ethics of Doing Critical Educational Research***, explores issues of validity, the tensions inherent in critical scholarship, social movements, public scholarship, the politics and ethics of research, and navigating institutional review boards.

Many research handbooks have been published since 1994, including several editions of the original *Handbook of Qualitative Research*. It is not our intent to duplicate that effort; rather, we seek through this handbook to offer insight into new and established methods that have explicitly embraced a critical perspective. And while there are a number of books and special issues that have critical research approaches as their focus, there is no handbook that captures the state of critical research and theory in the social sciences, and in particular, as they are used to understand educational and social phenomena.

Reading the Handbook

This handbook is designed to map the field; however, it does more than that. It also offers insight into the adjacent next. The contributing authors backwards-map, synthesize literature, and provide a sense of the tap roots of current practice. The authors also offer concrete examples of what is, pulling illustrations from contemporary scholarship to reflect on "what counts" as a critical approach. Finally, the scholarship in this handbook fosters the kind of generative thinking that contributes to future methodological and theoretical breakthroughs.

We anticipate that readers, based on their familiarity and engagement in critical research, will experience the handbook differently. However, we anticipate that both those newer to the field and the most seasoned critical scholars will find within these pages exciting new ideas, challenging questions, and insights that spur the continuous evolution and grow the influence of critical research methods and theories in the education and human disciplines.

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Similarly, our thanks go to the contributors to this volume, many of whom faced significant challenges over the course of time this volume was under development. We began conceptualizing this project well before the first case of COVID-19 was officially reported in January 2020, and we could not have imagined the devastation that would ensue over the subsequent years—devastation that is still ongoing. As of this writing, Johns Hopkins University's Coronavirus Resource Center reports that nearly 6.6 million people in the world have died from COVID-19.

On May 25, 2020, George Floyd, a 46-year-old Black man, was murdered by Derek Chauvin, a white police officer, when Chauvin kneeled on Floyd's neck for almost ten minutes. The death of George Floyd sparked worldwide uprisings against police brutality and racism—specifically, anti-Black racism—that has long existed in the United States, as well as across the globe. The scale of the uprisings was unprecedented and occurred across geographic regions, big and small, and included a diverse group of people. Sadly, despite the civil unrest that occurred in 2020 and vows of solidarity among and between disparate groups, we continue to witness the murders of Black, Latinx, Asian, and Indigenous people, and white supremacy persists. This is particularly evident in education with legislation aimed at restricting the curriculum focused on racism, equity, and social emotional learning, as well as the banning of books authored primarily by Black and LGBTQ+ individuals.

Many of authors of this handbook reflected on COVID-19, the murder of George Floyd, and the 2020 uprisings in their chapters. We would be remiss not to acknowledge these tragic events as they undoubtedly impact how we move forward with critical scholarship and why it is ever more important to engage in this work.

We thank each of the authors for sharing their knowledge and wisdom.

We acknowledge that there is a growing interest in critical theories and methodologies in the field of education, making this an exciting and creative time.

It goes without saying that we came out of this project, like we do many of our projects, enriched in our understanding and our relationships with new colleagues.

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Introduction

Michelle D. Young and Sarah Diem

This handbook offers a contemporary and comprehensive review of critical research theory and methodology. The significant focus on and activity around critical research methodologies in recent years can be compared to the generative expansion of qualitative methodological innovation during the 1990s when Denzin and Lincoln were planning and developing their first handbook (Denzin & Lincoln, 1994). One significant difference is that contemporary critical researchers are harnessing and building on a variety of methodological tools, including but extending beyond qualitative methodology to also include critical quantitative and mixed-methods approaches to research. A second difference involves the evolution and expansion of critical theories and their use. The contributors to this handbook are part of a growing community of educational researchers who are using and adapting new and established critical theories. A third difference is the nature of the sociopolitical context in which research takes place; this has shifted dramatically over the last 30 years, and scholars are exploring societal issues in new and different ways. The opening chapter in Section One, by Linda C. Tillman, explores some of this history in an attempt to capture key developments that brought us to the current moment. In this introductory chapter, we contextualize the handbook within the field of critical (and primarily qualitative) research, define the field of critical education research, and provide a brief introduction to the handbook sections and chapters that follow.

Rich Ferment

Critical research enjoys a long history. At the risk of oversimplification, we begin our discussion in the mid-1980s, at which time there was an explosion of published work pushing back against positivism as inadequate for fully exploring the complexities of human experience (Lather, 1986; Lincoln & Guba, 1985). Scholars ushered in a discourse that expanded thinking about epistemology, theory, and methods, particularly qualitative research methods, and as a result expanded ways of thinking about the phenomena being examined. Stephen Ball's study of the 1988 Education Reform Act, for example, offered a new way of exploring the education policy process. His use of what he described as critical policy analysis challenged conventional thinking (Ball, 1990) and, subsequently, influenced a generation of critical policy scholars.

Textbooks, handbooks, and new journals appeared in what Lather (1986) described as a "rich ferment" (p. 63). One could argue that Denzin and Lincoln's 1994 *Handbook of Qualitative Research* was the result of this ferment, as well as an accelerator of its expansion. Communities of scholars emerged and special interest groups formed, many committed to particular paradigms and/or theoretical families. Some of these groups developed their

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own journals, enabling their maturation and growth to continue further (Denzin & Lincoln, 2011, p. 2).

Today, we are seeing a similar explosion of interest in the use of critical theoretical frameworks to conduct overtly equity- and social justice–oriented research. As demonstrated by the chapters in this handbook, scholars are expanding the boundaries of "what counts" as critical research. They are exploring the relationship between theory and method, exploring new sources of information, imagining new ways of making data useful, interrogating and reflecting on their practices, and "putting critical theory to work" (Lather, 2004, p. 759). And just as qualitative researchers are deploying methodology for explicitly critical social purposes (Cannella & Lincoln, 2012), quantitative methodologists are finding ways to engage critically in their work and with/through a critical lens. Even methodologically entrenched journals like *Educational Evaluation and Policy Analysis*, known for their devotion to traditional positivist research traditions, recently released a call for a special issue edited by Erica O. Turner, Dominique J. Baker, and Huriya Jabbar highlighting critical approaches to education research. Thus, despite the "government-sanctioned, exclusivist assertion of positivism . . . as the 'gold standard' of educational research" (Wright, 2006, pp. 799–800), new critical approaches are being developed, existing approaches are being adapted and combined, and practices and assumptions are being challenged.

In the late 1980s, Lather (1986) pointed to the lack of clear strategies for linking theory and research methods. She noted that "the methodological implications of critical theory are relatively unexplored. There is also a lack of self-reflexivity" (Lather, 1986, p. 65). Although the field has evolved, work remains and the ferment continues. Such developments are accomplished through continuous self-reflective practice.

> What is needed most is for practitioners to experiment with the new designs and to submit their attempts and results to examination by other participants in the debate. The new historians of science have made it clear that methodological questions are decided in the practice of research by those committed to developing the best possible answers to their questions, not by armchair philosophers of research.
>
> (Polkinghorn, 1983, p. xi)

What Is Critical Research?

Critical research—and in particular, critical educational research—is a complex set of understandings, assumptions, and practices. The theoretical and methodological eclecticism which characterizes critical research seem to defy definition. Some trace their roots to the work of Karl Marx and/or The Frankfurt School, others to the work of Paulo Freire, and still others to Black intellectual traditions. Theoretically, they include epistemologies, ontologies, and methodologies associated with post-positivism and poststructuralism, theoretical perspectives focused on elucidating power and inequity. To name just a few, the critical theories appearing in this book include queer theory, critical race theory, critical feminisms, critical discourse theory, and critical advocacy. Some take an intersectional, interdisciplinary, and cross-disciplinary approach, including queer critical race theory and critical race disability theory.

Unsurprisingly, authors in this handbook define and describe critical research in a variety of ways. Many hold the belief that critical research begins with concerns and questions about equity and disparity, a rejection of dominant reductive notions of research, a resistance to—or refusal of—positivist analyses grounded in western colonial thought, an intent

desire to understand these factors, and a commitment to delineate taken for granted foundational assumptions underlying practice, as well as an interest in identifying practices that can transform the current state of affairs into a more just and sustainable tomorrow. In this way, critical research is overtly political, critically political. That is, critical scholars wish to do more than understand, provide insight, critique, and refute; they want their work to either directly or indirectly contribute to transformation or to the struggle for transformation and against oppressive systems and structures.

On the surface, the work to define what counts as critical theory and methodology in each of the chapters may not seem too dissimilar from conventional approaches, in that they are interested in understanding what is truly going on within a particular context and why. However, there are important distinctions. As Carolyn M. Shields points out in her essay introducing Section Six, “Critical research begins with the premise that a researcher’s role is not to describe the world as it is, but also to demonstrate what needs to be changed.” As such, what counts as critical in this handbook often involves deep analysis and concentrated looking into the social and historical context in which phenomena exist in order to reveal underlying patterns, relationships, meanings, and structures; the use of more than one perspective or an intersectional critical perspective for analysis; deep reflection and introspection on positionality, power, intention, and voice; and a concern with doing more in the research process than understanding or critiquing.

The perspectives on critical research in this handbook also draw from a variety of critical traditions, communities, and perspectives. As James Joseph Scheurich points out in his introduction to Section Two, critical theory in the past has largely been a home for white scholars; more recently, however, an increasing number of scholars of color are engaging in explicitly critical work. While there is overlap in the intellectual and scholarly traditions scholars of color and white scholars draw on, there are also important differences. Through their chapters, authors of this handbook have thrown open a window into multiple intellectual and scholarly traditions that offer opportunities for engaging in research critically.

Concerns with positionality and reflexivity are central to critical methodologies. Thus, it is no surprise that the majority of chapters in the handbook address the importance of the researcher’s critical reflexivity and include an acknowledgment of their social positionalities. For example, Duarte writes that critical reflexivity is central to the design and implementation of his critical mixed-methods approach. Critical researchers recognize that not everyone sees the world in the same way, nor do they experience it the same way, and they recognize that research questions, design, and implementation stem from researchers’ motivations—motivations that are tied to subjectivities and identities. Without critical reflexivity, critical approaches can fall victim to empiricist traps that advance the status quo and undermine critical research aims. When researchers are reflexive and transparent about their identities, however, it strengthens the research.

Critical research, nevertheless, is not without controversy or detractors. In addition to a political environment, which since the turn of the century has encouraged researchers to use scientific and objective methods that produce scientifically based research (SBR), paradigmatic purists have “extended and repeated the argument that quantitative and qualitative methods and postpositivism and the other ‘isms’ cannot be combined because of the differences between their underlying paradigm assumptions” (Denzin & Lincoln, 2011 p. 2; Tashakkori & Teddlie, 2003). This handbook purposefully includes multiple perspectives, methods, and strategies, and among those are ten chapters featuring critical approaches to quantitative research. A growing and diverse community of scholars have taken on the task of bringing criticality to the quantitative. The chapters in this handbook

critique traditional quantitative strategies and offer new ones, opening up possibilities for CritQuant, QuantCrit, and critical mixed-methods studies to develop rich, in-depth, and complex understandings of phenomena.

Current social, political, and educational contexts warrant increased critical research attention. As we emerge from the COVID-19 pandemic, school districts are plagued with both demands and obstacles, from the teacher shortage to addressing learning gaps to keeping students and school staff safe. In addition, school curriculums, vaccinations/masking, and children's bodies are being increasingly politicized, taking attention away from the social-emotional and academic strategies needed to support student learning and their flourishing as human beings. In higher education, academic capitalism continues to grow in higher educational financial and policy decisions—even in public institutions, drawing the purpose farther and farther away from the public good. And throughout the United States, Black, Indigenous, and other people of color (BIPOC) communities continue to sustain racial suppression and violence. Each of these challenges is complex, multifaceted, and persistent, even after years of struggle and work for equity and justice. For these and other reasons, critical research—research that seeks to identify and interrogate oppressive hierarchies, reject notions of objectivity, and to work toward emancipatory and empowering ends—is needed.

Using the Handbook

The handbook was designed to provide insight into the current state of critical research theories and methodologies, particularly as they exist and are used within the fields of education and human development. The chapters are organized into eight sections that move from the theoretical to the specific, examining various paradigms for engaging in critical scholarship, various methodologies for doing critical research, and the political, ethical, and practical issues that arise when working as a critical scholar. Individual sections are dedicated to specific qualitative, quantitative, and mixed-method designs, given the "separate and detailed literatures on the many methods and approaches that fall under" each category of research (Denzin & Lincoln, 2011, p. 3). Scholars in these sections explore the influence of critical frameworks on different research strategies and designs, document and data management, and reporting.

Section One of the handbook, ***Why Critical Research? Why Now?***, focuses on the nature, purpose, and history of critical scholarship. The section opens with an introduction by Penny A. Pasque, who raises critical questions about critical research and the role it plays in education and society. The section includes four chapters: an introduction and historical review of critical education research by Linda C. Tillman (Chapter 1), an examination of the paradigm wars and their legacy by Robert Donmoyer (Chapter 2), an overview of emerging critical approaches to quantitative research by Kamden K. Strunk (Chapter 3), and an examination of the possibilities that critical research offers for studying anti-Blackness in schools by Jeremy D. Horne, Terrance L. Green, and Tabitha Reynolds Hoang (Chapter 4). Pasque draws connections in her introduction between the work in the handbook and this particular section to critical advocacy research, a multi-paradigmatic approach that draws upon and integrates tenets from critical theory in the interest of fostering understanding and social change.

Section Two, ***Epistemology, Theory, and Paradigms***, opens with an introduction by James Joseph Scheurich, who points out that though systemic racism, systemic sexism, and systemic heterosexism remain well ensconced in social science research, "the epistemology

and paradigms scholarship of scholars of color, feminist scholars, and queer scholars has become much larger and moved much more toward the civilizational center." The section includes six chapters which reflect to some degree this movement. The chapters explore a variety of epistemologies, theories, and paradigms, examining in detail the values, priorities, tenets, and limitations of each, as well as their implications for critical research. Chapter 5, by Zeus Leonardo, Michael V. Singh, and Ziza Delgado Noguera, presents three frameworks for examining education and colonialism. Chapter 6, by James Jospeh Scheurich, explores the ontological architecture of western modernity as a White supremacist project. In Chapter 7, author Michael P. O'Malley delineates the methodological implications of queering critical educational research. Using "feminist decolonial, Black studies, queer theory, posthumanism, and . . . the 'new' feminist materialisms," Wanda S. Pillow takes up the issue of reflexivity and its role in postqualitative inquiry in Chapter 8. In Chapter 9, Elizabeth de Freitas turns her attention to the spatial logic of epistemic imaginaries. In Chapter 10, the final chapter in this section, Cleveland Hayes turns the conversation toward intersectional analysis, specifically "Where are the Black Folx? A Queer Critical Race Theory Intersectional Analysis."

The next five sections focus on issues of qualitative, quantitative, mixed, and emerging critical research designs, and the collection and analysis of data in critical research projects. Section Three and Section Four focus on research design, Section Three on qualitative and Section Four on quantitative. Subsequently, Section Five captures emerging approaches in critical education research.

Section Three, ***Critical Qualitative Research Design***, is introduced by Angel Miles Nash and Michelle D. Young, who discuss the theoretical intentionality of research that is explicitly designed from a critical perspective. The section includes seven chapters, beginning with Chapter 11 by Sarah Diem, Madeline Good, and Sarah W. Walters focused on the critical case study research approach. This is followed by Chapter 12 on the design and implementation of critical ethnographic research by Teresa L. McCarty and Kyle Halle-Erby. In Chapter 13, Bryant Keith Alexander explores critical auto (-/) ethnography in both the everyday as well as within educational research. Meagan Call-Cummings and Giovanni P. Dazzo's Chapter 14 explores critical narrative inquiry. Walter Heinecke, Sarah Beach, Hunter Holt, Alexis M. Johnson, and Kristan L. McCullum focus their Chapter 15 on critical participatory action research, Lisa M. Dorner, Sujin Kim, Edwin Nii Bonney, and Isabel C. Montes's Chapter 16 looks at critical discourse analysis. Finally, in Chapter 17, Kristan L. McCullum and Derrick P. Alridge offer theoretical, methodological, and practical insight into a critical approach to researching the history of education.

In the introduction to Section Four, ***Critical Quantitative Research Design***, Lolita A. Tabron explores the importance of "critically interrogating and tracing the origins of assumptions, ideas, discourses, and the accepted and normed research paradigms and practices within ourselves and the collective" in quantitative inquiry. The section includes four chapters that explore critical quantitative research design and the importance of un(learning), deconstructing, and reimagining how statistics can be used for social justice. In Chapter 18, Lolita A. Tabron and Amanda K. Thomas focus intently on the (un)learning required with regard to advancing critical approaches within strongly entrenched white supremacy ideologies. Gillian Parekh in Chapter 19 pairs a critical disability lens with critical race theory in quantitative inquiry to reveal systemic inequities around dis/ability and intersecting constructed identities such as race, gender, and class. Also taking an intersectional approach, Anne-Marie Núñez, Matthew J. Mayhew, Musbah Shaheen, and Eric McChesney explore in Chapter 20 the methodologic challenges and opportunities for interrupting the white

supremacist statistical tools and applications. In Chapter 21, Katherine S. Cho and Cecilia Rios-Aguilar focus on the power, politics, and oppression that are part of the building, analyzing, and using large-scale datasets, and offer insight into how researchers can reimagine databases to advance equity.

As Decoteau J. Irby conveys in his introduction to Section Five, ***Critical Emerging Approaches***, the four chapters in this section present several emerging critical research approaches, drawing from multiple traditions to pursue critical questions. In addition to introducing and discussing the chapters in the section, Irby recounts his own engagement with ethnographic content analysis. This is followed by Chapter 22 by Bryan J. Duarte, which focuses on the use of mixed-methods approaches informed by critical theoretical perspectives. Subsequently in Chapter 23, Kara S. Finnigan and Huriya Jabbar discuss critical network analysis and its utility and potential in the current context. In Chapter 24, Ee-Seul Yoon focuses on the critical (as opposed to technical) use of geographic information system in education research. Chapter 25 explores multimodal approaches to educational research; specifically, Candace R. Kuby, Rebecca C. Christ, Lauren A. Hermann, Erin Price, and Traci Wilson-Kleekamp argue that the inclusion of multiple modes—including auditory (e.g., spoken language, music), visual (e.g., gaze, print, images), actions (e.g., posture, facial expression, object handling), and material (e.g., the built environment, layout of materials and furniture)—provides avenues for interrogating power dynamics that perpetuate harm.

Section Six focuses on ***Data Collection in Critical Research***. It begins with an introduction by Carolyn M. Shields in which she makes the point that "if data collection does not reflect a critical stance, it is difficult to assert that the research is critical." The section includes four chapters which present critical data collection methods focused that help to unpack assumptions, positions, policies, and practices that perpetuate inequity and discrimination. Chapter 26 by Courtney Mauldin and Terah Venzant Chambers focuses on techniques for interviewing critically, a focus that is built upon in Chapter 27, wherein Curtis A. Brewer and Elisha A. Reynolds focus on oral history interviewing as a form of critique. In Chapter 28, Melinda Lemke focuses on the use of critical and feminist theories in qualitative observations. The chapter considers this work in terms of the procedural, the personal, and the political. The final chapter in this section, Chapter 29, by William Perez, Roberta Espinoza, and Maria Melendrez, discusses critical survey research. They argue, similarly to the chapters in Section Four, that critical qualitative methods should not be defined by their methodology, but by the research questions asked.

Section Seven, ***Critical Data Analysis***, offers diverse critical conceptual and methodological analyses for qualitative and quantitative data. In the section introduction, Magaly Lavendez discusses the potential of critical data analysis to *rehumanize* research and charts how each of the authors in the section centralize their positionalities and roles to *rehumanize* critical data analysis in each of their chapters. In Chapter 30, Carrie Sampson and Lok-Sze Wong discuss the critical use of qualitative data analysis software to explore critical research questions. In Chapter 31, Sue Winton and Paulie McDermid discuss critical argumentative discourse analysis and historical policy research. We recommend reading this discussion with Chapters 16–17, which focus on critical discourse analysis and critical historical analysis. Chapter 32 focuses on data management. In the chapter, Karen Robson and Nicole Malette take a "Foucauldian" approach to critique the bureaucratization of data management in Canada and then offer insight into how this can be done differently. In Chapter 33, Verónica N. Vélez and Nichole Margarita Garcia explore the methodological possibilities of advancing QuantCrit in critical race spatial research, extending the

conversation started in Chapter 24 on the emerging use of geographic information systems in critical education research. In the final chapter in this section, Chapter 34, Kelly Deits Cutler and Daniel D. Liou discuss the issue of content analysis and introduce a new critical data analysis approach: decoloniality content analysis.

The final section, Section Eight, focuses on the politics and ethics of doing critical education research. Beginning with a section introduction by Cynthia I. Gerstl-Pepin, ***Politics and Ethics of Doing Critical Educational Research***, the section includes six chapters. Lauren E. W. Stark's Chapter 35 examines the work of critical educational research as part of larger social movements. In Chapter 36, Érica Fernández and Samantha Paredes Scribner explore the inherent tensions within critical scholarship concerning to whom researchers and their work is ultimately accountable—a theme that is picked up later in Chapter 38, by Davis Clement, Michelle D. Young, and Angel Miles Nash, who explore validity as democratic deliberation. In Chapter 37, the issue of social movements is focused locally by authors Laura Hernández, Paul J. Kuttner, Gerardo R. López, Jennifer Mayer-Glenn, Leticia Alvarez Gutiérrez, Taeyeon Kim, Amadou Niang, Sonny Partola, and Alma Yanagui, who explore the role of families and educators in co-designing critical education research as participatory public scholarship. The relational is further explored in Chapter 39 by Vidya Shah, who examines the politics and ethics of positionality and relationality in research. Finally, in Chapter 40, Leslie Ann Locke and Lisa Polakowski Schumacher take on the question of institutional review boards and their role vis-à-vis the critical research movement.

Each of these chapters plays a key role in the handbook, helping to build out an understanding of the state of critical education research in 2023. Contributions explore relevant contexts and histories, major assumptions and ideas, controversies, and current practices for their areas of specialization. Chapters also consider future directions for such work, identifying potential trends and challenges. Importantly, in exploring current practice, chapter authors take care to provide insight into the "how tos" and "whys" of their practice. Just as this handbook represents a resurgence of interest and engagement in critical scholarship, it also represents an important resource for intensifying the expansion and momentum of critical research.

A Growing Research Community

Over the course of the last 15 years, we have endeavored to collaboratively build a deeper understanding of critical research. Beginning in 2007, we formed a research collaborative of education leadership and policy scholars to conduct a meta-analysis of critical policy analyses (CPA) and to interview CPA scholars in the education field regarding their research agendas and motivations. The rationales provided by these scholars included the importance of critique in a democratic society (Diem et al., 2014). Similarly, critical researchers engage in critique, interrogate practices and their epistemological roots, examine the players involved in education, and/or engage in activism.

The critical scholars contributing to this volume represent or have been influenced by a diverse range of education disciplines, and represent multiple countries and methodological backgrounds, making the handbook an essential resource and benchmark for anyone doing critical scholarship. For these scholars, critical research is beyond an academic exercise. It is deeply personal and conducted with the goal of impacting policy and practice that will lead to a more just society. This work is of critical importance today as democracy is on the brink and authoritarianism and disinformation are on the rise across the world.

While there is much more growth needed in critical education research, the contributors of this handbook give us hope for the future of the field.

We welcome you to this work.

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Section One

Introduction

Why Critical Research? Why Now?

Penny A. Pasque

Why critical research? Why now? The current educational moment is intertwined with our historical, economic, legal, and sociopolitical contexts. This historical present implores us to intervene and foster critical change through an iterative process of research <- and -> practice. For example, in our current (not yet post-) COVID-19 moment, school districts are plagued with obstacles including lack of teachers, substitutes, and even bus drivers (Lieberman, 2021; U.S. Bureau of Labor Statistics, 2022). Schools and universities continue expansion on Indigenous land (Dunbar-Ortiz, 2014). Academic capitalism and managerialism perspectives remain pervasive in higher educational policy decisions (Kuntz et al., 2011; Slaughter & Rhoades, 2004). In addition, our trans children are being excluded from playing school sports that match their gender identity even though ample evidence reveals that participation "results in positive outcomes, such as better grades, greater homework completion, higher educational and occupational aspiration, and improved self-esteem" (American Psychological Association, 2022, para. 7) and during a time when suicide is a high risk. Further, Black urban communities rightfully identify "data-driven decision making" as "part of a broader, sustained policy of racial suppression" (Khalifa et al., 2014, pp. 148–149), thereby connecting the historical with the present as "Black, Indigenous and other People of Color (BIPOC) communities, have been working to disrupt racial injustices in education for centuries" (Ishimaru et al., 2022, p. 465). These are just a handful of brutal and very real examples of why critical research is required for the current educational moment.

To be sure, these educational challenges are complex, entangled, and persist even after years of struggle against oppression. This essay focuses on the complexities of race in critical educational research as one concept, of many, as it introduces the chapters in this section. The use of race as an example is instructive, as Lori Patton Davis et al., and I (Pasque et al., 2022) argue in our manuscript and webinar series *Unapologetic Educational Research: Addressing Anti-Blackness, Racism and White Supremacy*. We state that educational research is often designed

> from a place of academic privilege, with violence, systemic policy, and white supremacy infused throughout dominant research practices, programs and policies. Racism embedded in research is often cloaked with dominant white perspectives . . . we/qualitative scholars can and must take action with intentional research designs and their implications as we interrupt and overturn dominant paradigms that persistently inflict epistemic harm on Black [and racial minoritized] lives in the research process.
>
> (pp. 3–4)

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Consider court cases such as *Brown v. Board of Education* (1954), which established that racial segregation in schools was unconstitutional following decades of segregation and contestation. The philosophical underpinnings of this case still influence in/equity in schools every day. By way of tangible example, Khalifa et al. (2014) identified that U.S. school administrators implemented "technical-rational" policies as sanction for school closures and the persistence of segregation. In an in-depth analysis of schools, neighborhoods, workplaces, and social networks from 1970–2020, Mijs and Roe (2021) describe the trends in schools and school districts, student tracking, and homogeneous districts as racial and socioeconomic segregation at work; this "despite the 1954 ruling in Brown v. Board of Education of Topeka [not italicized], American schools remain both separate and unequal" (p. 7).

In higher education examples, challenges to affirmative action in college admissions continue, albeit racial discrimination has not yet been upended. Specifically, white people are bold enough to continue to think that acceptance letters sent to people of color should have been sent to them instead. While the U.S. Supreme Court in the *Regents of the University of California v. Bakke* (1978) case determined "quotas" were not acceptable, in *Grutter v. Bollinger* (2003), the justices maintained that race in admissions was still a compelling interest if it is used as one factor of many in admissions decisions. Importantly, it was scholarship from educational researchers that proved influential in this case (see, for example, Gurin et al., 2002). Relatedly, race-conscious admissions policies were upheld as lawful years later in *Fisher v. University of Texas* (2016) (see educational research from Garces, 2015, on the specifics of this case; also see Jayakumar & Garces, 2015). Again, our history influences our present—a present that continues to cry out for critical researchers to address racial inequities in bold and meaningful ways; why now.

In another tragic example of why now, Trayvon Martin, a Black child who should have lived to see another day in a school classroom and possibly attend college, was brutally murdered instead. Deeply personal and historical-sociopolitical shared experiences such as this one have turned into international movements, including #BlackLivesMatter after the murders of George Floyd and Tyre Nichols by police officers, Tamir Rice (a 12-year-old playing with a toy gun in a public park) also by a police officer, and far too many other examples to list (see blacklivesmatter.com). #StopAsianHate, another important national movement, galvanized the country and the globe after crimes including the deaths of Martha Enciso and the eight people shot and killed at work in a salon, 84-year-old Vicha Ratanapakdee, who was shoved to the ground while walking in San Francisco, and Michelle Go, who was killed after being pushed onto a New York City subway track (see stopaapihate.org). Further still, we have lost of thousands lives because Indigenous women and girls are murdered and identified as missing daily; 5,712 were reported in 2016 (Lucchesi & Echo-Hawk, 2018) (see nativehope.org), and the era of #MeToo as started by Tarana Burke that impacts hundreds of thousands of women, men, and trans people's past and present (see metoomvmt.org). Each of these movements represents some of the worst of humanity along with the power of people, remarkable resilience, and activism toward the change we need to see in the world. The present implores us/you to work to change our future, and one way is to respond through an iterative process of critical research <- and -> practice.

Another example of escalation and why the current moment begs for critical research are the recent calls for the elimination of critical race theory—a theory taught in graduate schools and *not* in pre-K–12 education. Relatedly, book banning has spiked again with the banning of authors/topics that focus on race, gender, sexuality, and beyond (Kim, 2022). These calls serve to allow white people to ignore racial oppressions of the past and present

instead of transforming white guilt into concrete strategies that break down racist perspectives, laws, and policies (Sawchuck, 2021). This social and educational imperative requires that we, as scholars, pay attention to the living history that influences us today and will impact our children in the future.

A final salient example, from myriad examples of "why now," is the violent takeover of entire communities, including the intentional targeting of schools in Ukraine. What is happening in Ukraine echoes centuries of imperialist and colonizing atrocities from, *but not limited to*, 1899 and the 1990s in Rwanda, 1995 in Bosnia, 1914–1918 and 1930s–1940s throughout Europe, and 1492 (and beyond) in Latin America and the United States (see Ferro, 1994). Further, it is important to consider how these histories are (and are not) taught to our children (see Ferro, 2003). Embedded in each of these atrocities live simultaneous stories of perseverance, empathy, heroism, and the power of survival.

Our current moment is intertwined with our historical experiences, and these are just a few instances of our historic present. These examples of our current moment are why it is imperative we (yes, you—and me; we) take up critical research, which is devoted to liberation, equity, justice, and change.

The tremendous benefits of critical research over time have been crucial in our understanding, unveiling, and/or addressing educational inequities thus far. Myriad inspiring examples exist for us to explore and build upon—W. E. B. Du Bois (1899) took up a critical approach as an assistant instructor in sociology at the University of Pennsylvania as he underwent a systematic investigation of the social conditions in the seventh ward of Philadelphia, Pennsylvania—a study that has influenced scholars for generations. bell hooks's (1994) *Teaching to Transgress* has shaped teaching and learning for decades. In a more recent example, Michelle Salazar Pérez and Gaile Cannella (2013) employ a critical approach to mapping disaster capitalism and the privatization of the public education system in post-Katrina New Orleans—a topic that remains relevant with climate changes. Importantly, Patel (2016) extends decolonizing research to the field of education.

Transforming Our Future Through Critical Research <- and -> Practice

Our historic present calls for critical research to transform our future through iterative educational research <- and -> practice. If we do not learn from our past, we will repeat it—and, in some cases, we are deep in the throes of (re)repeating history. Notably, we stand on the shoulders of ancestors who intervened in the past to make concerted change—the benefits of which we are the recipients. As educational scholars, it is our responsibility—our imperative—to make change for current and future generations. Critically, we must interrupt dominant paradigms that cause harm, particularly to multiply minoritized communities across race, gender, sexual orientation, age, class, and beyond.

I argue, and have argued elsewhere, that we cannot continue to reify academia's traditional, dominant, and reductive methodologies—as well as taken-for-granted methods—to address the issues of the current day because they are not poised to address the issues we face today and have not fostered equity thus far. To reiterate, "approaches to research often follow similar patterns, admittedly from a place of academic privilege, with violence, systemic policy, and white supremacy infused throughout dominant research practices, programs, and policies" (Pasque et al., 2022, p. 3). As such, critical research provides hope for our future as it informs policies, laws, programs, and practices that address inequities and transform lives.

Specifically, critical education scholars identify and interrogate oppressive hierarchies as they work to apply their knowledge toward emancipatory and empowering ends, contributing to psychological and physical change in the lives of historically oppressed individuals, groups, and communities (Alvesson & Deetz, 2006; Brookfield, 2005; Leonardo, 2004; Tierney, 1991a). In this way, critical scholars work in collaboration with communities and not as the savior or protector to provide emancipation *for* communities. In addition, critical scholars reject notions of objectivity as they center this human emancipatory and transformative social change as central to the research inquiry (Pasque & Carducci, in press; Tierney, 1991a); researchers are constantly in relationship *with* communities. Beneficially, Ishimaru et al. (2022) identify "three pivots for RRPs [research-practice partnerships] to begin to address deep-seated racial inequalities in education: (1) center justice in multidimensional systems change; (2) develop equity-centered data systems; and (3) enlist the expertise of racially minoritized youth, families and communities" (p. 465).

In the current moment, critical inquiry has become an important paradigmatic approach and logic to build upon from the past—and modify it for our future. A critical approach informs one's philosophy, theories, methodologies, methods, tools for analysis, and recommendations for change. It is a logic of identification, deconstruction, and liberatory frame for research *by and with* minoritized communities (Pasque & Carducci, 2015). As researchers, scholar-practitioners, and policymakers, the topics we take up confront educational inequities and chapter authors in this section offer critical educational research as one form of liberatory hope.

In the next section of this essay, I introduce the authors who—in this handbook section—extend our understandings of critical educational research history, theory, methodology, and practice. I further define critical inquiry—as it has been developed and utilized for decades. Next, I extend this approach by defining critical advocacy inquiry, useful for our current moment in that it operates at the nexus of critical, transformative, and participatory paradigms. I conclude with words of encouragement for critical education researchers.

In This Section

Critical inquiry and the critical inquiry paradigm are often defined quite loosely to include critical, decolonial, postcolonial, postqualitative, poststructural, and beyond (Macey, 2000). As such, it may be difficult to understand critical inquiry without immersing oneself in the literature (another important rationale for a deep read of the current handbook), as well as being cognizant of your own positionality.

As I introduce this section, I want to acknowledge the vision and foresight of Michelle D. Young and Sarah Diem, editors of this volume, as it is timely and provides the depth of thinking needed for scholars to take up the challenges of our historical present. Further, I must acknowledge my place of residence and work, central Ohio, and The Ohio State University campus, as the traditional homeland of the Shawnee Nation, Miami, Wyandotte, and other Indigenous nations who have strong ties to these lands. There is a long history of violent and harmful dehumanizing research "on" Indigenous communities by university researchers that has led to distrust (Patel, 2016; Tuhiwai Smith, 2021). Relatedly, there is much distrust between schools, communities, and universities (Fine & Torre, 2004; Pasque, 2017). As educational scholars, it is vital that we understand the complexities of our inter/national history and local contexts—and take action accordingly within our own research

decisions, methods for community participation, grant pay equity, authorship, and venues for dissemination of recommendations.

The chapters in this section set the context for the remainder of the volume. Taken together, the authors explore historical moments in critical qualitative, quantitative, and mixed-methods educational research. In addition, they reflect on past controversies and how said controversies set the context for contemporary iterations of critical educational research. As such, I encourage readers to take up these four chapters simultaneously, not in isolation, and put them in conversation with each other and in conversation with the rest of the volume. As you will learn from this section, critical research has changed over time and the authors push us toward the next instantiation of critical educational research.

First, in Chapter 1, Linda C. Tillman addresses "Critical Education Research: Emerging Perspectives on Methods and Methodologies." Tillman introduces readers to—or, for some readers, she remembers with you—the origins of critical education research. This includes the important context that education research has been dominated by narrow Eurocentric quantitative approaches. Importantly, she shares the evolution of critical race theory, Black feminist thought, decolonizing methodologies, and culturally sensitive research approaches, which have transformed the field in meaningful ways. It is these approaches that give hope for the next generation of critical education scholars. Tillman includes encouraging words for scholars about how we may continue to amplify voices of multiply minoritized people, as well as new theories and frameworks for the next moment in history. She concludes with implications for using critical education research approaches that address myriad social, cultural, economic, and educational realities in the United States.

In Chapter 2, Robert Donmoyer reflects on "The Paradigm Wars Reconsidered: Looking for a Legacy." Donmoyer picks up the main historical threads in qualitative research discourse in educational research, including non-dominant perspectives that push against Thorndike's original conceptualizations. Of course, it is important to understand the past, so we learn from it and do not repeat it. Donmoyer's chapter is important for this context. The critical educational research of the past is predicated on dominant Euro/white male perspectives, and these are important to understand. Even when emancipatory in nature, these past conceptualizations often omit important multiply minoritized perspectives that have also existed for centuries. For example, when reading this chapter, consider the commonly used metaphor of "three waves" of feminist theory that make up white women's important and emancipatory actions and consider how these three waves often exclude concurrent waves that existed within the United States and across the globe, including Arab feminism; Asian and Asian American feminism; Latina/Chicana feminism, Black feminist thought; postcolonial feminism, transnational feminism, queer feminism, eco feminism, and well beyond (Pasque, 2011; Wong & Botts, 2018). Critical educational research, theory, and inquiry exists in much the same way—with simultaneous and concurrent critical perspectives as captured from within, and outside of, the traditional paradigm wars. As such, this chapter is especially beneficial when read in context with the other chapters in this section.

Kamden K. Strunk's Chapter 3 explores "Critical Approaches to Quantitative Research: Review, Critique, and Applications." This chapter summarizes the multitude of ways in which critical quantitative scholarship is utilized in educational research, from rewording survey items to rethinking traditional criteria for significance. Strunk offers a clear articulation of QuantCrit and its distinction from other forms of critical quantitative scholarship. The historical threads of racism in quantitative methodologies are seamlessly connected to the ways in which quantitative educational research methods continue to

perpetuate oppression in this current moment. This incredibly strong chapter offers both a critique of quantitative methodologies and their history, as well as possibilities for their continued use in educational research. Directly, Strunk explores ways that quantitative research historically has reproduced and reified white supremacist cisheteropatriarchal logics while also exploring possibilities for quantitative research to take up Black, queer, and multiply minoritized perspectives. I encourage critical scholars to take time with this contribution; it is poised to make a concerted difference in quantitative research as it is one of the most thoughtful arguments for critical quantitative in the literature thus far. It also points out "several core weaknesses" to current critical quantitative arguments that are quite useful. Strunk draws from higher education scholars and extends current arguments in thoughtful and complex ways. The author concludes with several practical strategies for readers.

Finally, Jeremy D. Horne, Terrance L. Green, and Tabitha Reynolds explore critical education scholarship in Chapter 4, "Black in Time: Critical Research Practices for Studying Anti-Blackness in Schools." The authors examine how critical education scholarship might consider the ontological realities of Black peoples by centering anti-Blackness in the research process. The chapter paints a brilliant picture of anti-Blackness in education, both historical and present, draws from BlackCrit in meaningful ways, and discusses ways that theorizing anti-Blackness can be used within educational research methodologies. Further, the authors introduce Black temporality of thought. As such, they encourage us all to be decidedly pro-Black in our research topics and research approaches. Horne, Green, and Reynolds do this by including perspectives across higher education and pre-K–12 scholars, which are not always understood. This chapter offers many critical questions that scholars of anti-Blackness must ask our/themselves, as well as thoughtful ideas for reimagining Black resistance in education, such as through "educational fugitive space."

I commend each of the chapter authors for their thoughtful contributions that further advance our understandings of critical educational research—and why now. Before turning to these chapters, I define critical inquiry in more detail then extend our understandings of critical approaches with an introduction of critical advocacy inquiry.

What is Critical Inquiry?

Critical theory's origins are described in the chapters in this section, including a rich historical foundation that traces back to the 1923 establishment of the Institute of Social Research or the Frankfurt School, and the works of Max Horkheimer, Freidrich Pollack, Theodor Adorno, Herbert Marcuse, Leo Lowenthal, and Jürgen Habermas (Brookfield, 2005; Held, 1980; Tierney, 1991a). These philosophers, sociologists, and economists labored to create critical perspectives that would "contribute to a critique of ideology and to the development of a non-authoritarian and non-bureaucratic politics" (Held, 1980, p. 16).

That said, it is important to emphasize that critical perspectives have existed for centuries in Indigenous and racially minoritized communities. Through my own review of the literature, I find these seminal critical perspectives have become more readily utilized and further developed by scholars as they simultaneously disrupt the hegemonic academy. For example, critical inquiry rightly comprises a diverse array of theoretical perspectives, including Indigenous, critical race, postcolonial, queer, feminist, crip-crit, and so much more (Champagne, 2015; Love, 2019; Pasque & alexander, 2022b; Pasque & Carducci,

2015, in press; Tierney, 1991b). Readers are encouraged to understand historical discussions of how critical social theory has evolved over time (Cannella et al., 2015; Held, 1980; Leonardo, 2004; Morrow & Torres, 1995), including discussions of specific critical theories such as critical race theory, BlackCrit, LatCrit, TribalCrit, and multiple perspectives of feminism, as found throughout this handbook. (For more on culturally responsive approaches to qualitative, quantitative, and mixed-methods research, see Pasque & alexander, 2022b.)

Flowing from these foundations, critical inquiry researchers' principles and assumptions are to interrogate and upend societal and institutional constructions of hegemonic power, in/exclusion of voices, and individual and systemic oppression (Battiste, 2008; Cannella et al., 2015; Denzin & Lincoln, 2005; Pasque & Carducci, 2015, in press; Pasque & alexander, 2022a, 2022b). More specifically, critical scholars seek to identify and critique dominant ideologies (e.g., values, myths, norms, beliefs, discourses) which establish and reify oppressive social, economic, and political conditions (Alvesson & Deetz, 2006; Brookfield, 2005; Leonardo, 2004; Tierney, 1991b). Unfortunately, and importantly for critical education researchers to understand, dominant ideologies may be difficult to identify. As Brookfield (2005) explains,

> ideologies are hard to detect since they are embedded in language, social habits, and cultural forms that combine to shape the way we think about the world. They appear as common sense, as givens, rather than as beliefs that are deliberately skewed to support the interests of the powerful minority.
>
> (p. 41)

It is the commonsense nature of these ideologies that is particularly pernicious and thus a focal point in critical scholarship. Critical scholars engage in ideological critique in the interest of collaborating with historically minoritized individuals and groups, recognizing that oppressive conditions are not natural and inevitable, but rather products of social constructions that should be challenged and overturned (Alvesson & Deetz, 2006; Brookfield, 2005; Denzin, 2015; Pasque et al., 2012; Tierney, 1991b). Thus, ideological critique is a powerful vehicle for realizing the second defining feature of critical social theory: a commitment to social transformation (Pasque & Carducci, 2015, in press).

Critical research toward social transformation and justice requires new ways of being, knowing, and valuing as it extends from activist beliefs that inquiry has the potential to realize social change (Pasque et al., 2012, p. 22). Critical educational research can be transformational and an approach of resistance (Brown & Strega, 2005; Huckaby, 2019) that works toward equity. As such, it makes visible as it works toward disrupting, overturning, and implementing the "*goals of social justice and radical, progressive democracy*" (Denzin & Giardina, 2010, p. 14; emphasis in original).

Why Critical Advocacy Inquiry Now, and What Is It?

As discussed, the historical present implores us to intervene and foster critical change through an iterative and liberatory process of research <- and -> practice. Critical research begins with questions of inequity and disparity and, I argue, holds promise for promoting laws, policies, programs, and practices that can lead to economic, sociopolitical, and human justice. Critical advocacy inquiry is sister to critical inquiry (i.e., related and contains all the same features, plus some additional features). I encourage readers to explore

critical advocacy inquiry in more depth elsewhere (Pasque & Carducci, 2015, in press; Shields, 2012). Critical advocacy inquiry is

> a multi-paradigmatic approach to research that draws upon and integrates tenets from critical (including transformative) and participatory paradigms in the interest of advancing scholarship that expands understanding of the historic roots and current realities of systemic inequity and contributes to the realization of meaningful socio-cultural, political, and economic change. Critical advocacy scholars share a commitment to documenting, describing and overturning injustice. As such, every decision of the research process from beginning to end . . . reflect a critical advocacy approach, including a research topic and design that are attentive to issues of power and inequities.
>
> (Pasque & Carducci, in press, p. 1)

Critical advocacy research is *rigorous throughout its design* (Pasque & Carducci, 2015; Shields, 2012). Moving beyond the mere documentation of oppression and hegemonic power, "critical advocacy-oriented research requires a commitment of the researcher to support and advocate for those whose voices are not always clearly heard. It implies a commitment to work to influence policies and practices that perpetuate marginalization and exclusion" (Shields, 2012, p. 10). In this way, the circular connections between research <-> practice seek to provide tangible strategies for equity and justice in partnership with communities (Ishimaru et al.,2022; Khalifa et al., 2014).

Further, critical advocacy scholars are deeply reflexive about the "seen, unseen and unforeseen dangers" they could be inflicting through their research (Milner, 2007, p. 388). And, once understood, researchers should adjust their research approaches in collaboration with individuals, schools, and/or communities—and "pivot" (Ishimaru et al., 2022, p. 465).

While critical advocacy scholars have successfully developed a robust body of critical and Indigenous methodological scholarship, critical methodological frameworks remain subject to attacks from neoliberals who seek to sustain the dominance of positivist and post-positivist research paradigms and language (e.g., scientific method, evidence-based inquiry) in the interest of perpetuating the inequitable status quo and the economic engine of higher education. To be sure, it is difficult to let go of what we know and current reward structures (Brookfield, 2005). Given that critical advocacy scholars seek to advance a critical research agenda, they will find themselves conducting and (unfortunately) defending these discourses, and methodological, and paradigmatic approaches, within an era of methodological conservatism (Kuntz et al., 2011; Pasque et al., 2012). In these instances, it is important to raise awareness that naming truth to power and actively working to dismantle oppressive conditions may place critical advocacy researchers in vulnerable positions with material consequences for employment, relationships, safety, tenure, and/or promotion. Despite the professional risks associated with engaging in critical advocacy research, proponents of this approach to inquiry believe they have a moral imperative (Shields, 2012) to engage in activist scholarship that translates rigorous critical analysis into tangible action and substantive change.

Encouragement for Critical Researchers

Yes, engaging in critical research and/or critical advocacy inquiry requires a tremendous amount of time, energy, and passion. It also necessitates a willingness to participate in the

political work of challenging established epistemological, theoretical, and methodological boundaries of scholarly communities. These boundaries have historically—and purposefully—served to constrain attempts to reimagine what it means to engage in inquiry toward justice and equity.

Critical education scholars (you/we) have a responsibility to those we teach, the communities with whom we engage, the people to whom we provide recommendations, and our own research practices. We have a responsibility to the communities whose stories we tell through our critical research—from qualitative, quantitative, mixed-methods, historical, and philosophical approaches, and approaches beyond these boundaries. Critical research is poised to help us see each other, understand each other, raise our consciousness, and think outside of the current dominant and hegemonic paradigms that currently exist. Understanding the alchemy of critical research—and its transformative reach over time—is paramount as we work to disrupt the approaches of the past and craft critical approaches with the potential to transform for our future.

The chapters in this section are important concepts for critical research in quantitative, qualitative, mixed-methods, and historical approaches, and approaches beyond these boundaries. The authors are engaged in this transformation—and so are you as readers of this information who apply these perspectives to your own research studies and practice. I look forward to your exploring the chapters in this section and pushing on the next iteration of critical educational research.

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1 Critical Education Research

Emerging Perspectives on Methods and Methodologies

Linda C. Tillman

Introduction

Educational research dates back to the mid-1800s, and much of the research about topics in education until the mid-1960s was dominated by quantitative methods based on Eurocentric perspectives of scientific rigor and objectivity. Additionally, research designs, methods, and findings during this time period were often unquestioned, considered to be the norm, and considered to be legitimate. According to Mertler (2018), "This preference for quantification became widely accepted across academia in the United States and abroad and helped educational research become perceived as a legitimate science" (p. 571). Educational and scientific organizations such as the American Educational Research Association and the National Science Foundation became well-known and respected advocates for the use of scientific research methods to improve education.

Much of the educational research until the mid-1960s was also situated in a positivist paradigm. Giroux (1986) defined positivism as a discourse that "considers the most important concerns the matter of pedagogical techniques and transmission of knowledge instrumental to the existing society" (p. 85). The emphasis on research approaches grounded in positivist theory, objectivity, and quantitative methods often resulted in research findings that were pathological descriptions of the lives and issues that directly affected people of color and other marginalized groups. The impact of issues such as race, class, and socioeconomic status on groups that were a large part of the demographics of schools and society were considered only in an objective sense—statistics without a name, face, or voice. Additionally, the over-reliance on positivist theories and quantitative methods often led to generalizations about people of color and reduced their lives to numerical findings (Frazier, 1949; Moynihan, 1965). For example, one of the arguments made by Moynihan (1965) in his book about Black poverty in the United States was that Black single mother families were caused by a ghetto culture, rather than because of economic issues such as lack of jobs. The pros and cons of Moynihan's findings are still being debated and have been widely used to make assumptions and predictions about Black people.[1] Bernal (1998) noted that both quantitative and qualitative research have been used to "objectify, exploit and dominate people of color" (p. 558). Similarly, Sablan (2019) argued that quantitative methods have historically been used to normalize and justify the "biological inferiority of people of color" (p. 182). Thus, some of the research conducted from a positivist perspective has historically contributed to the marginalization of individuals and groups who have been labeled as problematic and who do not fit a dominant white profile.

Over the last three decades, there has been a dramatic and much-needed shift in the theorizing and use of research methods that consider and capture the lived experiences,

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voices, cultures, and ways of knowing of traditionally under-represented and marginalized groups (racial and ethnic minorities, women, LBGTIQ), and how particular structures, policies, and practices impact these groups (Howard, 2020; Murakami et al., 2013; O'Malley, 2013). These theories, methods, and methodologies usually focus on important issues of equity, social justice, and social, economic, political, and educational power for under-represented groups.

The purpose of this chapter is to: (1) provide a brief historical overview of the origins of critical research in education; (2) discuss some of the most prominent critical research theories, frameworks, methods, and methodologies; and (3) discuss implications for using critical research approaches that address the myriad of social, cultural, economic, and educational realities in the United States.

What Is Critical Education Research?

Critical approaches to educational research move beyond traditional Eurocentric norms of research theory and practice to identify and interrogate persistent social and educational issues. Critical approaches to educational research problematize assumptions about groups based on various factors, including their race, ethnicity, and gender, as well as their access to power and privilege. Critical education research is also concerned with the *who*, *what*, and *why* of phenomena, and centers the voices and perspectives of the participants in the research to capture their unique, self-defined ways of knowing. Thus, the use of critical research theories, frameworks, methods, and methodologies in education research requires researchers to go beyond merely conducting interviews, making observations, administering surveys, or using other traditional research methods. Critical educational research *compels* critical scholars to seek answers that do not readily appear—answers that may be difficult to uncover and interpret, and that may lead to other more pressing questions, as well as answers that upend our own assumptions about particular groups of people, their cultures, their communities, and their histories.

Critical education research is now more than ever concerned with how failing schools, poverty, social injustices, civil rights issues, women's rights, sexual identity, immigrant stories, power and politics, and other persistent conditions impact individuals. Critical education research requires research models and methods that can question taken-for-granted notions of justice and injustice, and that can contribute to a more equitable and just society, particularly in schools (Dancy & Brown, 2013; Evans, 2013; Rogeman et al., 2014).

Critical Education Research: Paradigm Shifts

The 1960s can be considered a turning point with respect to a number of educational, social, economic, and political issues in the United States. The 1954 *Brown v. Board of Education* decision led to policies and practices that were meant to force states, and particularly Southern states, to provide equal educational opportunities to African Americans. Desegregation/integration and inequitable educational opportunities were in the forefront of the research on schools and schooling. On another front, the Women's Movement and a resurgence of feminism led to demands for women and gender studies in higher education, as well as demands for equitable treatment and pay in employment. The civil rights movement brought about specific demands for the rights of African Americans which

included voting rights, fair housing practices, and equal rights according to the law. Changing racial demographics and increased numbers of English learners, the rights of students with disabilities, and school reform were beginning to be more prevalent in society—and by extension, schools. Educational researchers began to think about educational research differently, ask different questions, and propose different ways to conduct research (Bell, 1980; Gordon, 1990; Harding, 1987).

Post-positivism was heralded as a more logical paradigm for addressing problems that plagued schools and society. Objectivity was no longer the predominant goal in conducting educational research; rather, knowledge was viewed as political and ideological. The post-positivist paradigm shift sought to bring clarity to issues related to race and racism, class, gender, and the roles of schools in re-producing social, economic, political, and educational inequities.

Post-positivism became popular in education. For example, educational administration and organizational theory scholars questioned the usefulness of traditional research theory and methods when investigating schools, and the role they served in educating all children. A 1991 special issue of *Educational Administration Quarterly* edited by Daniel Griffiths was "dedicated to nontraditional theory and research" (Griffiths 1991, p. 262). According to Griffiths, "The purpose of the special issue is to collect a sizable number of articles featuring many alternatives to traditional theory and research" (p. 263). The authors in the special issue presented new theories and new ideas for conducting research that aligned with particular problems in K–12 education. Articles in the special issue focused on topics including feminist theory, critical theory, school reform, and post-positivism. For example, Glazer's article titled "Feminism and Professionalism in Teaching and Educational Administration," focused on feminist theory and methodology in educational administration. Glazer (1991) emphasized the connection between feminism and professionalism and the ways in which a feminist perspective could transform teaching and educational administration. In another article titled, "Educational Reforms can Reproduce Societal Inequities: A Case Study," Scheurich and Imber (1991) discuss a case study of a school district reform effort and issues of unequal distribution of power, knowledge, and resources based on race and class.

One of the earliest approaches to critical education research was critical theory, a theory which is typically situated in debates about school reform and critical pedagogy. Bowles and Gintis (1976) used critical theory as a lens to discuss the relationship between public schools and a capitalist society. In a discussion of critical theory, Giroux (1986) advocated for a "more productive starting point for constructing a model of educational research" (p. 84), a model which would recognize the "centrality of politics and power in educational inquiry and research" (p. 84) and would include a critical theory of schooling. According to Giroux, a critical theory of schooling could uncover domination and oppression in schools and recognize that schools are essentially cultural and political sites and "represent areas of contestation among differently empowered cultural and economic groups" (p. 85). Much like the current movement to eliminate discussions of slavery, the civil rights movement, and critical race theory (CRT) in K–12 schools, Giroux noted that,

> But school culture, it was claimed, functioned not only to confirm and privilege students from the dominant classes, it also functioned through exclusion and insult to disconfirm the histories, experiences, and dreams of subordinate groups.
>
> (p. 86)

Foster (1986), in his book *Paradigms and Promises*, defined critical theory as a focus on "structural variables [in human relationships], particularly those of class and power" and as an effort to examine "sources of social domination and repression" (p. 72). Foster noted that the purposes of critical theory are to critique, educate, and understand—that is, critical theory should be used to analyze a capitalistic system. Foster was an early proponent of the use of culturally relevant research approaches, and he advocated for their use in the study of culture and politics. In his discussion of the science of school administration and organizational theory, Foster argued that a more critical analysis of school administration—as well as education in general—was needed in school reform efforts. According to Foster, a critical theory discourse and perspective was necessary because it "encourages us to view events in historical perspective, to doubt the validity of received truth (at least in how we manage our human affairs), and to continue our search for adequate solutions to our problems" (p. 13). Critical theory, then has three main purposes: (1) to produce empirically based, non-traditional studies of how organizations and schools function; (2) to interpret meanings; and (3) to evaluate how structures such as schools give and take power in school contexts. Foster termed these three purposes the empirical, hermeneutic, and emancipatory interests of critical theory.

Denzin (2010) noted that "Race, ethnicity, sexuality, class, the research rights of indigenous peoples, whiteness and queer studies are taken-for-granted topics today. These conversations were not occurring in the 1970s and 1980s" (p. 424). The paradigm shift to post-positivism, with critical theory as one of its most prominent schools of thought, introduced new themes of power, justice, and equity. Researchers and educational theorists began to focus more directly on the ways in which structures of power hindered or helped particular groups of people, and especially under-represented groups (Anderson, 1990; Yeakey, 1987). Additionally, the post-positivist paradigm urged educational researchers to consider different conceptual and theoretical frameworks that would allow both the researcher and the researched to tell different stories, to recognize different realities, and to move beyond some of the pathological and racist interpretations of the lives of the researched.

Today, there are numerous critical education research approaches, including CRT, feminist theories, Chicana feminist theories, and queer theories (See Chapters 3, 8, and 10 in this volume). Some of the tenets/principles in each of the theories and frameworks overlap. For example, tenets of CRT are found in some feminist, quantitative, LatCrit, and TribalCrit frameworks. Brayboy and Chin (2019) situate

> Critical Race Theory (CRT) and Critical Indigenous Research Methodologies (CIRM) as two intersecting ways of ensuring research looks to those who have been marginalized or hurt by it in the past, as an emancipatory project that forefronts community relationships and interests.
>
> (p. 51)

Brayboy and Chin use storytelling, a tenet of CRT, to expose oppressive structures, present stories of possibility, and disrupt taken-for-granted beliefs about the world. While there is no one-size-fits all critical education research framework, similar to Brayboy and Chin, researchers may use tenets/principles from more than one framework to approach their work. Additionally, the frameworks tend to share a fundamental commonality: an emphasis on race, racism, social justice, power, domination, and using counter-stories and storytelling as a key feature.

Critical Qualitative Research Methods

Research using qualitative methods began to gain popularity with the advent of post-positivist approaches to theorizing and conducting research. Qualitative research approaches are used across disciplines, and particularly in the social sciences (education, sociology, cultural studies). The field of history could be considered one of first disciplines to use qualitative research approaches, as historical research is often conducted using archival methods, interviews, and oral and life history narratives (Anderson, 1988; Siddle Walker, 1996).

Qualitative research is characterized by using words to explain a particular phenomenon, centering the voices and perspectives of the participants, and considering the cultural context of the participants and their communities. Researchers use a variety of methods including interviews, observations, participant observation, and document analysis to gain an in-depth understanding of the phenomena under study (See Chapter 26 in this volume). Researchers also seek to present thick, rich descriptions of the participants and their surrounding context to present detailed findings.

Qualitative research is also characterized by various approaches to conducting research including case study, ethnography, narrative inquiry, and grounded theory. For example, the case study method "is used to provide in-depth understanding of a phenomenon as it occurs in real time to portray the complexities, interactions, and occurrences that explain how, what, and why" (Behar-Horenstein, 2018, p. 1340). Ethnography focuses on "describing, analyzing, and interpreting a culture-sharing group's collective patterns of behavior, beliefs, and language" (Behar-Horenstein, 2018, p. 1340). Narrative inquiry is often used in research using qualitative methods. The lives and experiences of the participants under study can be captured by asking questions, probing, and considering the alternative realities of the participants. A seminal study about the lives of Black teachers was conducted by Foster (1997), who used life history interviews to investigate the lived experiences of 20 elder, veteran, and novice teachers who taught in pre- and post-*Brown* school contexts. Foster's study is an example of how research can be conducted using in-depth interviews over an extended period of time to collect data about the varied aspects of a participant's life, and using that data to tell the participant's story. Other examples of the use of qualitative methods to conduct critical education research include the investigation of student experiences in racially diverse settings (Chapman et al., 2019), using participatory action research combined with CRT to study the experiences of survivors of Hurricane Katrina, investigating African American teachers' perspectives on teacher burnout, and conducting oral history research with individuals who desegregated schools in the south (Dixson et al., 2019).

As qualitative research became more popular, researchers also began to write about various methodological approaches to using qualitative methods. Two books that helped to shape the field of qualitative research methods are Lincoln and Guba's (1985) *Naturalistic Inquiry* and Michael Quinn Patton's (1990) *Qualitative Evaluation and Research Methods*. Lincoln and Guba posited that science was primarily dominated by quantitative methods and proposed an alternative, naturalistic inquiry, where there is no manipulation of data. Rather, naturalistic inquiry allows participants to be studied in their natural settings. Patton argued that researchers could use qualitative methods to conduct investigations of the effectiveness of organizations using systematically and carefully designed and executed data collection and analysis strategies. Both of these books were popular texts in higher education research methods courses and gave students, as well as professors, a paradigm shift in the ways that the research act could be designed and executed.

Other qualitative methods textbooks also became popular in the 1980s and 1990s. For example, the books *Basics of Qualitative Research: Grounded Theory Procedures and Techniques* (Strauss & Corbin, 1990) and *Becoming Qualitative Researchers: An Introduction* (Glesne & Peshkin, 1992) were used as main or supplemental texts in qualitative research methods courses. Additionally, a series of qualitative handbooks edited by Denzin and Lincoln would add to conversations about qualitative research theory, methods, and methodologies. The handbooks feature hundreds of chapters about conceptual and empirical approaches to qualitative research methods. For example, the fifth edition of *The SAGE Handbook of Qualitative Research* (Denzin & Lincoln, 2017) features new and revised chapters from previously published handbooks, as well as chapters on topics including feminist qualitative research, CRT, case study methodology, and critical arts-based inquiry. In addition to the Denzin and Lincoln series of handbooks, there are also handbooks that focus on conceptualizing and conducting qualitative research in particular racial, ethnic, and marginalized communities, including queer theory (Rhodes & Alexander, 2022), the Asian context (Wa-Mbaleka & Rosario, 2022), and Indigenous methodologies (Denzin et al., 2008).

Qualitative research aligns with several critical education frameworks discussed later in this chapter, including CRT and culturally sensitive research. Qualitative methods are important to critical education research. For researchers interested in the stories of their participants, how the participants make sense of their lived experiences, and how participant perspectives can be used to inform policy and practice, qualitative methods offer a wide range of strategies to design, collect, analyze, and present data.

Quantitative and Mixed-Methods Research

Critical Approaches to Quantitative Research

Much of educational research is data driven. Policymakers, funding agencies, and governmental agencies have historically relied on numbers to make decisions about social, economic, political, and educational issues that impact millions of people. This historically rigid reliance on quantitative data has typically ignored the institutional structures that can lead to social injustice, and the marginalization of the voices and experiences of individuals who are impacted by policies that are supposedly designed to help them. Covarrubias and Vélez (2013) argued that much of the data based on quantitative statistics has failed to recognize the "historical roots in white supremacy and the logic of racial reasoning" (p. 270).

There is now a growing body of conceptual and empirical critical education scholarship that focuses on critical quantitative approaches (See e.g., DeCuir-Gunby & Schutz, 2019; Sablan, 2019, and Chapters 3, 18, and 19 in this volume). While there continue to be conversations about quantitative versus qualitative approaches, critical quantitative approaches are becoming more prominent as educational researchers attempt to address persistent issues in education and society. Race, class, gender, poverty, disproportionate school discipline, the under-achievement of students of color, inequitable funding across school types, educational policy, and immigration are all areas that can be studied using critical quantitative approaches.

Critical quantitative frameworks range from critical race quantitative intersectionality (CRQI) to QuantCrit (QC) to CritQuant (CI) (Jang, 2018).[2] Critical quantitative frameworks have been used to study K–12 and higher education issues, including in what ways space impacts educational opportunities for Chicana/o populations (Pacheco & Vélez, 2009), push-outs of Chicano students in high schools (Covarrubias, 2011), immigrant status

(Conway, 2014), gender (Kinzie, 2007), and Southeast Asian female students' educational outcomes (Jang, 2018). Additionally, several of the critical quantitative research frameworks draw on the tenets of CRT with respect to the conceptual framing of the research (Garcia et al., 2018; Jang, 2018; Sablan, 2019; Wells & Stage, 2015). For example, Garcia and colleagues (2018) noted that several tenets of CRT—including the centrality of racism, the challenge to white supremacy, and interest convergence—are useful in research using QuantCrit methods.

Wells and Stage (2015) addressed the topic of critical quantitative research in higher education in the third volume of *New Directions for Institutional Research.* Wells and Stage posited that the purpose of critical quantitative research is to

> use data to represent educational processes and outcomes on a large scale to reveal inequities and to identify social or institutional perpetuation of systematic inequalities in such processes and outcomes; and question the models, measures and analytic practices of quantitative research in order to offer competing models, measures, and analytic practices that better describe the experiences of those who have not been adequately represented; and conduct culturally relevant research by studying institutions and people in context.
>
> (p. 2)

According to Wells and Stage, higher education scholars should "reflect on not only if and how quantitative criticalism has been useful in the past, but how the concepts can be extended to be even more useful in the future" (p. 2). Wells and Stage also discussed the use of the term "critical," noting that the meaning of the term may differ for researchers who have different worldviews, different socializations to the research process, and different types of research training. The authors added that these differences can become more pronounced when the term "critical" is combined with the term "quantitative." The authors suggested that researchers must be clear about what they mean by the word *critical* and "how that term informs the work, and how the perspective influences findings" (p. 7).

Sablan (2019) argued that "qualitative methods are not the only way to present counternarratives" (p. 196) in educational research, and advocated for the use of CRT as a theory and a methodology in quantitative methods. Sablan used Solórzano and Yosso's (2002) critical race methodology (CRM) framework to conduct a study of the experiences of undergraduate students of Asian descent. Solórzano and Yosso define CRM as:

> a theoretically grounded approach that foregrounds race, racism, and intersectionality; challenges traditional research paradigms and texts, offers liberatory frameworks for subordination; and focuses on the experiences of students of color and interdisciplinary perspectives.
>
> (p. 180)

Sablan (2019) used data from an online survey of undergraduate students in two AANAPISIs (Asian American Native American Pacific Islander-serving institutions) to investigate students' aspirations for college and their connections to family and their culture. The researcher operationalized four forms of community cultural wealth (CCW) (Yosso, 2005) to conduct the study:

1. *aspirational capital*: the ability to maintain hopes and dreams for the future
2. *familial capital*: connections to and knowledge of family and kinship networks

3. *navigational capital*: the ability to navigate through schooling institutions that were not designed with communities of color in mind; and
4. *resistant capital*: the knowledge of and motivation to transform oppressive structures.

Sablan refers to community cultural wealth (CCW) as the assets that students of color bring to the educational environment, and notes that it is "an appropriate case to examine the possibility of combining quantitative methodology and CRT" (p. 187). Sablan also notes that this type of study "demonstrates the possibility of using the directives of measurement theory in a CRT issue of CCW among marginalized communities of color" (p. 196).

A special issue of the journal *Race Ethnicity and Education* titled "Quant-Crit: Rectifying Quantitative Methods Through Critical Race Theory" was published as a result of a panel at the 2015 Critical Race Studies in Education Association Conference. The special issue addressed several questions including: 1) can quantitative methods support and further critical race agendas in educational research?; 2) does QuantCrit (QC) offer researchers alternative possibilities?; and 3) how can QuantCrit be aligned with/complement other critical qualitative methods such as critical feminist research, etc.?. The panel discussion focused on the application of CRT in quantitative methods. Garcia et al. (2018), participants in the panel, discussed tenets of CRT and emphasized the historical legacy of QuantCrit. They pointed out that QuantCrit has its "origins in a long legacy that spans over a century" (p. 6), and one of the earliest contributions of this type of work came from the work of W. E. B. Du Bois's (1899) *The Philadelphia Negro*. Du Bois used counter-stories to detail the dominant view that Blacks were an inferior race as he studied the structural and social inequalities that were typical in the lives of Blacks in the 1800s and early 1900s. The authors argue that a "productive dialog between CRT and quantitative methods or what we call 'QuantCrit' has the potential to be used for racial justice and other liberatory projects" (p. 10).

Quantitative methods historically have not made room for expanded discourses about how research is theorized, designed, and conducted. Thus, many conclusions are inferred from numbers. Quite often these numbers do not tell a complete story of the complex and sometimes multi-layered lives of individuals who completed a survey or who were simply part of an existing dataset. However, there is a need for quantitative data that provides information which can possibly be generalized to similar populations. The use of critical quantitative frameworks and methods can add context to the responses from quantitative data and also complement what is known from qualitative research about the same topic. Thus, critical quantitative research methods present additional research strategies that can answer questions about educational and societal trends, as well as to center the voices and perspectives of the researched.

Critical Approaches to Mixed-Methods Research

Denzin (2010) noted that "mixed, multiple, and emergent methods are everywhere today, in handbooks, readers, texts" (p. 419). This remains true today with many educational researchers not only combining qualitative and quantitative methods in the same study, but also using critical research frameworks to design and conduct mixed-methods research (DeCuir-Gunby, 2020; DeCuir-Gunby & Schutz, 2019; Harper et al., 2018). The educational research literature is filled with journal articles, handbooks, and books that focus on not only mixed-methods strategies but also mixed-methods strategies that focus on issues of race, gender, poverty, and other persistent educational and societal issues (Pasque &

alexander, 2022; see Chapter 22 in this volume). Denzin refers to mixed-methods research as a "third methodological moment" that involves "the incorporation of increasingly diverse standpoints, the coloring of epistemologies, and the proliferation of colors, the subversion of dominant paradigms, the rejection of norms of objectivity, and the pursuit of progressive politics (p. 422).

Similar to researchers who use frameworks such as QuantCrit and CRT, researchers who use mixed-methods often look at racial and social justice issues and situate their work in liberatory and empowering frameworks.

Covarrubias et al. (2018) used mixed-methods to conduct a case study of K–12 schooling in California. All of the researchers were Chicana/o and all grew up and were educated through K–12 and post-secondary education in California, and had spent most of their lives there. The authors intentionally formed a research group whose work focused on educational pipelines in California. Their same race and cultural affiliation figured prominently in their use of *testimonios* to tell their stories as a complement to their research findings. Additionally, each of the authors considered themselves to be quantitative researchers; however, they realized the usefulness of mixed-methods to conduct research about marginalized groups. The authors note that they did not reject the use of quantitative methods; rather, they note that "our inquiry disrupts one-sided quantitative educational attainment data" (p. 4). Two questions guided their research: (1) how can critical race quantitative intersectionality (CRQI) incorporate *testimonios* that are intersectional and transformational?; and (2) how do our particular educational *testimonios* help expand our analyses of the educational pipeline as a conceptual and methodological tool? The authors defined *testimonio* as "purposeful storytelling grounded in praxis utilized to expose and disrupt histories that are otherwise subsumed" (p. 6). A *testimonio* methodology uses a participant (*testimoniadora)* and the researcher. The authors used a CRQI + *Testimonio* (CRQI + T) framework to uncover their own unique self-defined narratives. The framework consists of four tenets: (1) disrupting dominant data mining; (2) numbers do not speak for themselves; (3) experientially and materially grounding data; and (4) commitment to structural transformation of intersectional subordination. The authors' research focused on how Chicana/os are educated in California and the complex racially defined structures that lead to the pushout of Chicana/o students in California schools. Using 2015 United States Census Population Survey data for the state of California, the authors analyzed patterns of educational attainment through the CRQI + T lens. Using *testimonios*, each of the authors talked about their own experiences in the educational pipeline. Several themes were evident in their *testimonios*: (1) structural oppression as racialized violence (poverty, inequitable schooling, and lack of healthcare); (2) racial context and betwixt and between (social belonging, fear of deportation, racialized exclusion); and (3) protective elements (forms of resistance, acknowledgment of their history). Covarrubias et al. concluded that a CRQI + T framework can be useful in investigating the "everyday experiences, structural realities, and resistance of Communities of Color" (p. 30).

DeCuir-Gunby and Schutz (2019) point out that mixed-methods approaches are now more prominent in educational research. According to the authors, "Because both mixed methods and CRT have gained popularity in education research, their combination is ripe for development" (p. 166). The authors noted that because there is a robust body of research on race and racism in society in general and in schools in particular, critical approaches to research are becoming more prevalent. The authors use a CRT framework to describe a mixed-methods design (quantitative and qualitative) to investigate African American women college students' experiences with racial microaggressions. Critical race mixed methodology

(CRMM) was used as a framework for the mixed-method design. Their work was informed by tenets of CRT, including (1) race as a social construction; (2) racial microaggressions are normal and ordinary in higher education; (3) race intersects with other identities; and (4) the use of counter-storytelling. They defined mixed-methods as "influenced by one's theoretical perspective, involves the collecting and analyzing of both quantitative and qualitative data within one study and, when applicable, is used to address issues of power" (p. 169). An explanatory sequential mixed-methods design (quan → QUAL) was used-collecting quantitative data and using the findings from that data to inform the selection of participants and the method for collecting the qualitative data. Recursive findings from the qualitative data were used to compare the findings from the quantitative data. The authors note that because the counter-stories of the African American women were the focus of the study, the dominant method for data collection was qualitative.

Critical mixed-methods research approaches offer opportunities and strategies for combining multiple research methods. Additionally, researchers can use critical frameworks such as CRT to complement the use of qualitative and quantitative approaches. Critical mixed-methods can add to the ways that researchers look *critically* at societal and educational issues.

Critical Race Theory

Much of the theoretical/conceptual work using a CRT framework in education draws on the work of legal scholars including Kimberlé Crenshaw, Derrick Bell, Richard Delgado, and John Calmore. These scholars are often cited in work that uses a CRT framework in critical education research using qualitative, quantitative, and mixed-methods approaches. Thus, CRT has become one of the guiding theoretical—as well as methodological—frameworks used by critical education researchers.

CRT originated in the legal field. One of the first comprehensive bodies of legal scholarship about CRT was titled *Critical Race Theory: The Key Writings that Formed the Movement* (Crenshaw et al., 1995). Crenshaw et al. "frame the development of Critical Race Theory (CRT) as a dialectical engagement with liberal race discourse and with Critical Legal Studies (CLS)" (p. 1343). In the beginning of the CRT movement, legal scholars were not concerned with how CRT could be used to conduct research as a method and a methodology. Rather, the early emphasis of CRT was focused on the unequal treatment of African Americans in the legal system and the use of CRT as a framework to analyze and talk about injustice in the legal system. Thus, CRT from a legal perspective was concerned with race and racism within a Black-White paradigm, and was used as a method of legal analysis primarily by legal scholars. Key tenets of CRT from a legal perspective are: (1) counter-storytelling; (2) whiteness as property; (3) interest convergence; and (4) a critique of liberalism (Sablan, 2019). Crenshaw (2002) describes CRT as

> Critical race scholarship generally challenges the legitimacy of dominant approaches to race and racism by positing values and norms that have traditionally been subordinated in the law.
>
> (p. 1362)

While the Crenshaw et al. (1995) book is a foundational collection of essays about CRT, the authors do not specifically discuss research methods; rather, they give readers a lens/framework for using CRT in critical education research.

The movement of CRT into education began in the early 1990s. Ladson-Billings and Tate (1995) wrote what is widely considered as the foundational CRT article in education titled "Toward a Critical Race Theory in Education." Ladson-Billings and Tate argued for the use of CRT in education similar to that in the legal field and noted that CRT should be used to theorize race, particularly in education because "(1) race continues to be significant in the United States; (2) U.S. society is based on property rights rather than human rights; and (3) the intersection of race and property creates an analytical tool for understanding inequity" (p. 47). The authors emphasized that race can be used as an analytical tool to understand educational inequity. Following the publication of the Ladson-Billings and Tate article, numerous articles, books, book chapters, and other readings about CRT in education were published (Lynn & Dixson, 2013; Lynn & Parker, 2006; Parker, 1998; Solórzano & Yosso, 2002). The CRT movement in education focuses on CRT not only as a framework but as an analytical tool, and the use of CRT in education has brought a continued focus on social justice, race, racism, and social change. The tenets of CRT closely align with qualitative research methods, and conversations about CRT in education center on its usefulness as a method and a methodology. Parker (1998) argued that "The importance that critical race theory places on historical links to contemporary social constructions of race also has implications for qualitative studies in schools and colleges" (p. 50). Additionally, Parker noted that qualitative research can also "inform critical race theory as to how the ideology and resulting legal mandate of color-blindness in schools and universities further serve as racist barriers for students of color" (p. 51).

Solórzano and Yosso (2002) argued that counter-storytelling, one of the tenets of CRT, is a useful "method of telling the stories of those people whose experiences are not often told" (p. 32) and noted that a counter-story can be a tool for "exposing, analyzing, and challenging the majoritarian stories of racial privilege" (p. 32). Similar to other CRT scholars, Solórzano and Yosso posited that a critical race methodology (CRM) provides a "tool to 'counter' deficit storytelling, and offers a space to conduct and present research grounded in the experiences and knowledge of people of color" (p. 23). The authors presented five elements of a CRM: (1) the intercentricity of race and racism with other forms of subordination; (2) the challenge to dominant ideology; (3) the commitment to social justice; (4) the centrality of experiential knowledge; and (5) the transdisciplinary perspective. For example, the element of 'the centrality of experiential knowledge" recognizes that the unique ways of knowing of people of color are legitimate and appropriate. Critical race methods include storytelling, family histories, biographies, *testimonies*, and narratives. According to Solórzano and Yosso (2002), such methods would counter deficit-based research and methods that "silence and distort the experiences of people of color and instead focuses on their racialized, gendered, and classed experiences as sources of strength" (p. 26). The authors concluded that the use of CRM in education can offer an alternative to cultural deficit stories.

Horsford (2011) used a CRT framework to investigate the lived experiences of superintendents who attended all-Black schools. CRT was used as a methodological and analytical framework for collecting and interpreting the stories of the participants. Horsford argued that "CRT serves the dual purpose of providing a race-based interdisciplinary theoretical framework of analysis to the study of education laws, policies, and administrative procedures that have a deleterious impact on racial minorities in K–12 and higher education settings" (p. 292). Horsford used several tenets of CRT to analyze the data, including the permanence of racism, interest convergence, and counter-storytelling. CRT served as a CRM to understand the "experiential knowledge of individuals intimately familiar with segregated and desegregated educational contexts" (p. 295). Horsford used

semi-structured, in-person interviews as the primary method of data collection, as well as other data sources including biographies, statements, profiles, and feature stories about the participants. Based on her data, Horsford developed themes that were consistent with the voices, perspectives, and experiences of the participants. She concluded that "The lived experiences and perspectives of the superintendents participating in this study provides counterstories of segregated schools that challenge majoritarian accounts of inadequate and inferior all-Black schools of the era" (p. 307). Horsford also argued that education researchers must actively engage in "a social justice project that attempts to link theory with practice, scholarship with teaching, and the academy with the community" (p. 310).

The use of CRT as a method of inquiry, and a methodological and analytical tool, has led to a proliferation of strands of CRT-based frameworks. Some of the frameworks are relevant to specific racial and ethnic groups, and other frameworks address critical topics such as individuals with disabilities. These frameworks include black critical theory (BlackCrit) (Dumas & Ross, 2016), Latina/o critical theory (LatCrit) (Yosso, 2005), Asian critical theory (AsianCrit) (Liu, 2009), tribal critical theory (TribalCrit) (Brayboy, 2006), disability critical theory (DisCrit) (Annamma et al., 2018), and multi-racial critical theory (MultiCrit) (Harris, 2016).[3]

The tenets of CRT have clearly become prominent in critical education research. As noted in this chapter, CRT is used in qualitative, quantitative, and mixed-methods research. CRT's emphasis on race, racism, and counter-narratives add to conversations about how critical education research can incorporate critical frameworks.

Culturally Sensitive Research Methods

One of the central features of critical education research is the emphasis on culture as a marker to investigate a particular phenomenon. Scheurich and Young (1997) argue that research is always embedded in a cultural a context, but that references to and viewpoints about culture are typically presented from dominant racial perspectives. Tillman (2002) defined culture as "a group's individual and collective ways of thinking, believing, and knowing, which includes their shared experiences, consciousness, skills, values, forms of expression, social institutions, and behaviors" (p. 4). Tillman has argued that the use of culturally sensitive research (CSR) approaches that focus on a particular racial or ethnic group can use the "cultural standpoints of both the researcher and the researched as a framework for research design, data collection, and data interpretations" (p. 3). Other scholars have argued that the recognition of *culture* is central to understanding the lived experiences of marginalized groups whose lives are usually interpreted using dominant frameworks (Gordon, 1997; Stanfield, 1994).

Scheurich and Young (1997), in their article "Coloring Epistemologies: Are Our Research Epistemologies Racially Biased?," argued that the epistemologies of researchers are often racially biased and can represent epistemological racism—that is, racially based ways of knowing. The authors articulate a central argument with respect to epistemological

> Epistemologies, along with their related ontologies and epistemologies, arise out of the social history of a particular social group. Different social groups, races, cultures, societies, or civilizations evolve different epistemologies, each of which reflect the social history of that group, race, culture, society, or civilization.
>
> (p. 8)

Additionally, the authors argued that epistemologies that are accepted as legitimate "arise exclusively out of the dominant White race" (p. 8). Thus, epistemological racism can lead to negative consequences that include the pathological and inaccurate histories of people of color, dominant group epistemologies and methodologies that tend to distort the lives of other racial groups, and research in the social sciences about people of color that is quite often based on a pathology that views them as inferior. Scheurich and Young concluded that one way to address epistemological racism in higher education is for professors who teach methods courses is to "begin to study, teach, and, thus, legitimate the research epistemologies that arise out of the social histories of people of color" (p. 11), and that they support an informed understanding and skillful use of these race-based epistemologies by students of color who are interested in non-traditional, dominant approaches.

Much of the scholarship focused on the use of CSR approaches centers on racial and ethnic groups (King & Tillman, 2018; Tillman, 1998, 2006). Tillman (2002) builds on the work of Dillard's (2000) "endarkened feminist epistemology" and Kershaw's (1990) Afrocentric emancipatory methodology to construct the culturally sensitive research approaches framework. The framework consists of five components: (1) culturally congruent research methods; (2) culturally specific knowledge; (3) cultural resistance to theoretical dominance; (4) culturally sensitive data interpretations; and (5) culturally informed theory and practice. The purpose of the framework is to offer culturally informed research practices that place the lived experiences of African Americans at the center of the inquiry, rather than on the margins. While the framework was specifically developed to conduct research in African American communities, the framework has been used by researchers who study other racial and ethnic groups (Calderon et al., 2012; Rogeman et al., 2014).

Tillman (2006) used the CSR framework to conduct research on African American teachers, parents, and principals in urban school districts. According to Tillman, each research study presented opportunities to use elements of the framework (interviews, observations, focus groups, voices of participants with direct knowledge of the phenomenon). The application of a culturally sensitive approach allowed Tillman to "not only think about and conduct research from an African-American perspective, but to contribute to theories than can inform educational practice" (p. 282).

Rogeman et al. (2014) used Tillman's (2002) CSR approaches framework to study how doctoral students who were emerging scholars "come to understand and enact their positionalities in research, especially in relation to data analysis, interpretation, and representation" (p. 44). The researchers expanded the focus on African Americans in the CSR approaches framework to study African immigrants. Their study focused on the experiences of two cohorts of doctoral students in a course that focused on "CSR and analysis of data from the professor's research with 1.5- and second generation West African immigrants on their educational experiences and civic/political participation" (p. 48). The authors note that researchers who use the culturally sensitive data interpretations component of the framework "are likely to view participants' stories of immigration and racism as legitimate and necessary to the knowledge construction of research processes instead of avoiding issues of race and culture" (p. 54). Several of the students focused on the culturally specific knowledge component of the framework to articulate their own self-defined views, "rather than dominant theories of immigrant experiences in the United States" (p. 57). The researchers concluded that their study "holds theoretical implications for expanding Tillman's (2002) framework of CSR" (p. 63). Tillman's call for CSR approaches with one specific ethnic group, African Americans, was extended to African immigrants.

Additionally, the researchers argued that aspects of culture which can include race, nationality, language, and reasons for immigrating should be considered when conducting CSR in education on similar groups.

CSR approaches allow researchers to focus their methods on the cultural norms of specific racial/ethnic groups. The use of culturally sensitive approaches center the voices of the participants, rather than confining these voices to the margins of the investigation. Additionally, similar to other critical research approaches, CSR can bring to the center those voices that have long been silenced and dismissed. CSR approaches emphasize the cultural knowledge of the researched and the researcher, and recognize culture as central to the research process.

Implications for Critical Education Research Theory and Practice

Critical education research theories, frameworks, methods, and methodologies focus on issues of social justice, equity, race, racism, gender, and other issues that impact the social, emotional, and educational lives and experiences of children and adults. Researchers look at problems from the perspectives of the researched, they center their voices, and consider their stories as legitimate. Methods include testimonios, storytelling, the use of critical quantitative and mixed-methods approaches, and overlapping theoretical constructs such as CRT and QuantCrit. The emphasis on race and racism is a key feature of many of the frameworks (CRT, culturally sensitive approaches).

While these frameworks have proven to be useful in educational research, there is still much to learn about the specific methods and methodologies that are used to design and conduct the research. Some of the research discussed in this chapter offers little information about the specific methods that were used to collect and analyze the data. For example, researchers using QuantCrit (QI) discuss why the framework is useful, what it can be used to investigate, and the tenets of the framework. However, in some of the studies, it is unclear whether surveys or other methods were used to collect data and then interpret the findings. Other researchers offer a clearer picture of the methods that were used in their research and we able to see a specific research design using a specific method and methodology. In order for these frameworks and theories to continue to inform critical education research, researchers must be explicit about their methods and methodology as well as the rationale for using them.

Additionally, those of us who teach research methods courses must incorporate into our teaching conversations about how critical education research can be used to uncover, interrogate, and analyze circumstances that marginalize particular groups. We must encourage and allow our students to think about and research how particular circumstances continue to create a highly racialized society, and how their use of critical education research can address inequities and injustices in society and education.

Conclusion

In this chapter, several critical education frameworks were discussed: qualitative, quantitative, mixed-methods, CRT, and culturally sensitive approaches. There are numerous other critical education frameworks that are used in education, including feminist, Black feminist, intersectionality, critical policy analysis, and queer theory (See Chapters 8, 10, and 28 in this volume). While space does not allow for a discussion of these theories and frameworks, it is important to note that they have similar focuses as those discussed in this

chapter: social justice, race, racism, equity, and power and privilege. As these and other critical research approaches continue to evolve, researchers should consider the usefulness of such approaches and how they can help us to make sense of issues that are persistent in schools and society, and how they can help us to advocate for more just policies, practices, and procedures—and a more just society.

Critical education research methods and methodologies can be effective in helping researchers to investigate some of our most pressing issues, issues that continue to plague our schools and society, issues that continue to deny children an equitable education, issues that contribute to a highly racialized society. Especially, with respect to schools and schooling, more critical research is needed to investigate structures that lead to poverty, the educational under-achievement of students of color, teacher working conditions and the teacher shortage, how schools are organized and how they function, the disproportionate discipline rates of students of color, the push-out of Black girls, and how Latinx, Asian, Indigenous, and multi-racial students experience education. These and other pressing issues continue to require our attention. Critical education research can be used to move research beyond traditional Eurocentric theories and practices that inhibit us rather than help us to pose solutions to important issues.

Notes

1 See for example a National Public Radio report, Bates, K. G. (2013). *Moynihan Black poverty report revisited 50 years later*. https://www.npr.org/sections/codeswitch/2013/06/13/190982608/moynihan-black-poverty-report-revisited-fifty-years-later

2 Critical race quantitative intersectionality, QuantCrit and CritQuant are frameworks that combine tenets of critical race theory and quantitative methods to challenge the neutrality of quantitative data, and to address racial and social justice.

3 Dumas and Ross (2016) describe three tenets of BlackCrit: Anti-Blackness is endemic to, and is central to how all of us make sense of the social, economic, historical, and cultural dimension of human life; Blackness exists in tension with the neoliberal-multicultural imagination; and BlackCrit should create a space for Black liberatory fantasy, and resist a revisionist history that supports dangerous majoritarian stories that disappear Whites from a history of racial dominance. Yosso (2005) describes LatCrit as an emphasis on Latina/o panethnicity and the influence of European colonialism. Racism, sexism, and classism intersect with Latina/os' sexuality, language phenotype, accents, immigration, and surnames. Liu (2009) posits that AsianCrit possesses three stages of deployment—denial, affirmation, and liberation—that translate to research on education theory and practice. There is an emphasis on nativistic racism framed around the myth of the model minority. Brayboy (2006) describes TribalCrit as centering on issues confronting Native American/Indigenous people and focuses on both historical and contemporary issues that affect them. Annamma et al. (2018) offer several tenets of DisCrit including a focus on ways that the forces of racism and ableism circulate independently, often in neutralized and invisible ways, to uphold notions of normalcy; DisCrit values multidimensional identities and troubles singular notions of identity such as race or dis/ability or class or gender or sexuality, and so on; DisCrit privileges voices of marginalized populations traditionally not acknowledged within research; and DisCrit considers legal and historical aspects of dis/ability and race, and how both have been used separately and together to deny the rights of some citizens. MultiCrit (Harris, 2016) is based on tenets that draw on CRT: a monoracial paradigm of race; racism, monoracism, and colorism; differential microracializations; and, intersections of multiple racial identities.

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2 The Paradigm Wars Reconsidered

Looking for a Legacy

Robert Donmoyer

In 1910, in the lead article of the inaugural issue of *The Journal of Educational Psychology*, the journal's editor, E.L. Thorndike, articulated a vision of what educational research could and—according to Thorndike—would do. Such research, Thorndike wrote,

> would tell every fact about everyone's intellect and character and behavior, would tell the cause of every change in human nature, would tell the result which every educational force . . . would have. It would aid us to use human beings for the world's welfare with the same surety of result that we now have when we use falling bodies or chemical elements.
>
> (p. 6)

Thorndike (1910) added one additional claim: "Progress toward such a science is now being made" (p. 6). This claim was, arguably, more than a little optimistic. However, throughout much of the remaining century, the educational research community strove valiantly—in different areas and, at times, in somewhat different ways—to generate the sort of knowledge about cause-and-effect relationships promised by Thorndike's vision of what educational research would provide. Much of this changed during the final quarter of the 20th century with the advent of what came to be known as "the paradigm wars" (Gage, 1989).

This chapter first briefly describes three examples of educational researchers' attempts to fulfill the promises Thorndike made in 1910. Then, the discussion turns to considering at least some of the reasons why, during the 20th century's final quarter, some members of the educational research community abandoned Thorndike's conception of educational inquiry and battled to legitimate quite different research paradigms. Third, the chapter describes what happened after the so-called paradigm wars ended. Finally, the focus shifts to what the legacy of the paradigm wars era is and could be today.

Three Examples of the Search for Causal Relationships During the First Three Quarters of the 20th Century

The effort to implement Thorndike's vision of educational research can be seen quite clearly in process-product studies of teaching (Gage, 1963), in the evaluation field's planned-variation studies of federal reform programs (Rivlin & Timpane, 1975), and in the educational administration's field's mid-20th century theory movement (Donmoyer, 2020; Fusarelli, 2006). This section of the chapter focuses on each of these in turn.

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Process-Product Studies of Teaching

Throughout much of the 20th century, many educational researchers studied teaching, and they did this by employing what came to be known as the process-product paradigm (Gage, 1963). Specifically, they sought to identify variables—most notably, teaching methods and practices—that were associated with producing student learning outcomes, normally measured by standardized tests.

Some process-product researchers were satisfied with merely identifying teaching practices that *correlated* with learning outcomes, but the more thoughtful researchers who studied teaching realized that quasi-experimental research designs were required to ensure that the teaching practices being investigated actually had *caused* the learning outcomes to occur (Good et al., 1975). Such designs, ideally, randomly assigned some students to classes in which teachers engaged in the teaching practices being studied and other students to classes in which teachers did not use such practices. Students in the first group that received the specified teaching "treatment" were designated as being part of the experimental group, and those in the second group were said to be in the control group. If experimental-group students out-performed control-group students, process-product researchers concluded that the teaching practices being investigated had caused the better performance.

In short, process-product researchers envisioned the sort of future in the domain of teaching Thorndike had envisioned for society in general. Once process-product researchers had accumulated a substantial number of generalizations about teaching practices that were either effective or ineffective, process-product researchers assumed that teachers would be able to use the knowledge they had generated to make informed decisions about how they should approach teaching, teacher educators would know which teaching practices and strategies to emphasize when educating pre-service teachers, and teachers' on-the-job supervisors would know what to look for when evaluating the teachers they supervised. In short, the expectation was that, in the domain of teaching, at least, we would, to use Thorndike's (1910) words, be able to implement teaching practices "with the same surety of result that we now have when we use falling bodies or chemical elements" (p. 6).

Planned Variation Evaluations of Federal Programs

The passage of legislation to support large-scale federally funded reform projects and programs during the 1960s created the need for evaluation studies. This need, in turn, fueled the development of the program evaluation field. Initially, some evaluators conducted *planned variation studies* (Rivlin & Timpane, 1975).

Within education, the best-known planned-variation study was the evaluation of Project Follow Through, which was created in response to evidence that suggested that the learning outcomes produced by the federal government's Head Start preschool program largely disappeared once children went to school. Consequently, Project Follow Through was geared to reforming primary education to ensure that low-income students continued to grow and learn during the early elementary school years. Program developers, however, had to confront a crucial question: which approach to primary school education was most effective?

Because program developers did not know the answer to this question, Project Follow Through funded the implementation of different models, along with a large-scale evaluation of the different models' effectiveness (Abt Associates, 1977). Models ranged from

those built around direct instruction of basic skills to programs emphasizing a Piagetian-inspired focus on developing higher-order thinking skills to affective education programs that assumed self-esteem was a prerequisite for children's cognitive development.

So, planned variation evaluators traveled down a slightly different pathway than process-product researchers traveled to achieve the vision Thorndike had articulated in 1910. The intended endpoint for both groups of researchers, however, was essentially the same: Both groups wanted to identify relationships between causes and effects that would allow policymakers and practitioners to make decisions and act with "the same surety of result that we now have when we use falling bodies or chemical elements" (Thorndike, 1910, p. 6).

Educational Administration's Theory Movement

In the middle of the 20th century, yet another variation of Thorndike's (1910) vision of educational research was being promoted within the educational administration field. As the movement's name suggests, advocates of this field's mid-century theory movement emphasized the importance of empirically validated theory. To quote Culbertson (1983), a chronicler of theory movement thinking in Educational Administration, "Effective research has its origins in theory and is guided by theory" (p. 15). Theory, also, was assumed to be what educational administrators would use to guide administrative decision-making and practice (Hoy & Miskel, 1978).

What prompted this interest in theory? There were undoubtedly practical reasons. Given the complexity of organizations, it was unlikely that individual studies could definitively determine the impact of specific leadership processes as, presumably, could be done for specific teaching practices; consequently, it was more sensible to develop theories about educational organizations and leading such organizations that educational administrators could use to guide their decisions and actions. Of course, members of the theory movement emphasized that theories would have to pass empirical tests to ensure that when a practicing school administrator employed a theory to guide their practice, they could do so with at least some sense of the "surety of result" (Thorndike, 1910, p. 6).

Theory movement advocates also were influenced by less pragmatic concerns, including the modeling provided by scholars in other, better established (and, often, more prestigious) fields of study. Culbertson (1988, 1983), for example, traced the movement's thinking back to the version of logical positivism promoted by the Vienna Circle several decades earlier. And Hoy and Miskel (1978), authors of a widely used introduction-to-educational-administration textbook that continued to popularize theory movement thinking through a dozen editions, characterized theory development "as the ultimate aim of science." They added: "Theory in educational administration has the same role as theory in physics, chemistry, or biology, providing general explanations and guiding research" (p. 20).

Challenges to Earlier Conceptions of Educational Research During the Final Quarter of the 20th Century

By the final quarter of the 20th century, some within the educational research community had begun to become disenchanted with traditional thinking about the form and function of educational research. For many, disillusionment manifested itself as advocacy for the use of qualitative research methods (Lincoln & Guba, 1985). However, as Talcott Parsons (1937, p. 481) observed years before, methodological disputes are seldom about methodology alone. In fact, disillusionment with traditional conceptions of educational research

during the final quarter of the 20th century occurred for at least two overarching reasons: (1) a lack of results; and (2) philosophical critiques that often were imported from Europe. Both reasons will be discussed in this section.

The Lack-of-Results Reason

First, it became more and more obvious—especially in the fields of teaching and program evaluation—that the sort of definitive knowledge about cause-and-effect relationships that educational researchers had been trying to produce since the beginning of the 20th century had not, actually, been generated. As the century moved into its final quarter, the traditional explanation for the lack of impact—i.e., the argument that educational research was a young science and simply required more time to produce definitive knowledge about cause-and-effect relationships—became less convincing to many in the field.

Process-Product Studies of Teaching Results

For example, the much-heralded correlational findings from process-product studies about time on task (the more time students spent learning about something, the more likely they would be to learn it) and teacher clarity (the clearer teachers are when they engage in didactic teaching, the more likely students will learn what is taught) (see, for example, Good et al., 1975) appeared to many to be little more than a confirmation of common sense. Even less obvious, more nuanced findings—e.g., the finding about an apparent curvilinear relationship between the amount of times a presumably effective teaching practice is used in a lesson and the effectiveness of that practice (Good et al., 1975)—were generated from correlational rather than quasi-experimental studies.

As it turned out, quasi-experimental studies—i.e., the only type of studies that can establish definitive links between causes and effects—are not as easy to implement in the real world of schools as they are in laboratory settings. In the real world of schools, for example, it is difficult to ensure that treatments are consistent across research sites. There also are ethical constraints when a random selection process is used to decide who will and who will not potentially benefit from teaching practices hypothesized to be highly effective.

For these and other reasons, by the start of the 20th century's fourth quarter, many who studied teaching abandoned the process-product paradigm and refocused their attention on simply describing teacher thinking without even attempting to determine which type of teacher thinking is associated with increased student learning outcomes (Clark & Yinger, 1977; Shulman & Lanier, 1977). Even Gage, one of the most enthusiastic defenders of process-product studies of teaching who had, in fact, edited an American Educational Research Association (AERA) *Handbook on Research on Teaching* devoted entirely to the process-product paradigm (Gage, 1963), was forced, in 1978, to conclude that the model could, at best, only provide a general knowledge base for teaching and that teacher artistry always would be required to adjust that knowledge base to the needs of particular students in particular classrooms in particular schools in particular neighborhoods (Gage, 1978).

Gage's revisionist conclusion about the limited—at best—knowledge process-product studies can provide is quite different from Thorndike's (1910) vision of an enterprise that "would tell the cause of every change in human nature, would tell the result which every educational force" (p. 8). This diminished vision is undoubtedly one reason why studies of teaching built around the process-product paradigm are almost impossible to find today.

Planned-Variation Evaluation Results

Many of the problems that interfered with producing definitive cause-and-effect results in process product studies of teaching also were visible with planned-variation evaluation studies (e.g., see Evans, 1981), and in the emerging evaluation field, generally. The Project Follow Through evaluation, however, did produce an apparently definitive finding: According to Abt Associates (1977), the firm contracted to evaluate the different models in the planned-variation study, one approach to primary-school education—the approach that emphasized using direct instruction to teach basic skills to students—was superior to other approaches in terms of producing student learning outcomes.

A team of researchers funded by the Ford Foundation to re-analyze the Project Follow Through data put this seemingly definitive conclusion in perspective, however (House et al., 1978). Among other things, team members noted that the model that aggregated data suggested was most effective was, in certain places, quite ineffective. Similarly, models that the aggregated data suggested were less effective were some of the most effective approaches in terms of producing student learning in some settings. The team concluded that this finding about discrepancies between aggregate findings and findings from individual sites

> should be honored widely and serve as a basis of educational policies. Local schools do seem to make a difference. The peculiarities of individual teachers, schools, neighborhoods, and homes influence pupils' achievement far more than whatever is captured in labels like basic skills or affective education.
>
> (p. 148)

As it turned out, the aggregate/site level data discrepancy problem that challenged the legitimacy of Abt Associates' Project Follow Through results was not simply a problem for planned variation studies. The entire emerging evaluation field was forced to respond to problems resulting from the idiosyncratic nature of individual sites and the idiosyncratic individuals within those sites. Spindler, for example, wrote the following about discrepancy evaluation models—i.e., models that assessed sites and programs by comparing whether what was happening in a specified site or program was consistent with or deviated from had happened in a model site an earlier evaluation—concluded was highly effective:

> My first reaction was, "Why would anyone expect different programs in different urban sites to replicate a model program in another site?" The expectation is against the first law of socio-cultural systems in that such systems (and a program of any kind is a socio-cultural system) are adaptations to their environment. We would expect each program to show significant deviation from the initiating model, and from each of the other programs. The question should not be, "Do they deviate?" or even "How do they deviate?", but rather, "Are they adapting well (functionally) to their respective environments?"
>
> (Spindler in Fetterman, 1981, p. 70)

Problems with both planned variation studies and a discrepancy approach to evaluating schools and the programs within those schools were simply the tip of the iceberg of problems in the evaluation field's use the sort of quasi-experimental research designs Thorndike (1910) envisioned educational researchers using. Because of these problems, educational evaluators experimented with a cadre of alternative evaluation "models"—everything from

models inspired by the adversarial hearings found in the justice system (Jackson, 1977; Worthen, 1990) to models that had evaluators behaving like anthropologists engaged in ethnographic research (Hamilton, 1977) to art criticism models (Eisner, 1985) to Stake's (1975) responsive approach to evaluation that cast evaluators in the role of quasi-journalists who presented the evaluator's audience with a plethora of evidence about the programs they were evaluating without weighing in on the conclusions the evaluator's audience should draw from the evidence displayed.

Most of these alternative models moved the emerging evaluation field "beyond the numbers game" (Hamilton, 1977). In fact, much of the impetus for the use of qualitative methods in the educational research field, generally, started in the subfield of educational evaluation. Although most of the evaluation models developed during the 1970s and early 1980s are no longer widely used today, contemporary educational evaluators do use qualitative methods, often within mixed-methods evaluation designs.

One Additional Results Problem: Built-in Value Bias

Up to this point, I have suggested that some became disenchanted with both process-product studies of teaching and quasi-experimental approaches to educational evaluation, and planned variation evaluations in particular, because they had not produced—and it became increasingly clear to many that they could not produce—the sort of definitive knowledge about cause-and-effect relationships that Thorndike, in 1910, claimed educational researchers would provide. For some, however, there was one other source of disenchantment: the a priori value bias inevitably built into research results.

This bias was illustrated by the group that re-analyzed Project Follow Through data (House et al., 1978) when the group focused on the outcome measures used in the evaluation. Although the Project Follow Through program had a variety of goals, including goals related to the affective development of primary school students and the development of their higher order thinking, the team that evaluated the program tended to choose dependent variables that could easily be measured, and these easy-to-measure variables tended to assess students' mastery of basic skills. It was hardly surprising, therefore, that programs that directly taught basic skills came out, at the aggregate level, at least, on top. The relative success of basic skills program, in other words, was more a tautology than an empirical finding.

A similar sort of bias can be seen in process-product studies of teaching. Such studies, in fact, not only normally defined the "products" studied in terms of mastery of basic skills; they also almost always assumed a priori that teaching entailed direct instruction rather than a more indirect process of facilitating and providing scaffolding for learning initiated by the students, themselves.

The systematic bias associated with process-product studies of teaching can be seen quite clearly in a book edited by Reynolds (1989) for the American Association of Colleges of Teacher Education (AACTE), *Knowledge Base for Beginning Teachers*. The book contained two research-based chapters about classroom management and discipline, one by a practitioner of process-product teaching research, Carolyn Evertson (1989), and the other by sociolinguist, Susan Florio-Ruane (1989). The two chapters provided new teachers with contradictory research-based advice about managing their classes and disciplining their students.

The Evertson (1989) chapter emphasized that teachers need to exercise hyper-control over their classrooms. The chapter even engaged in a bit of hyperbole, noting that teachers

needed to develop "eyes in the back of their heads" so their control of their classrooms was complete. All of this makes perfect sense if one assumes, as did Evertson and other process-product researchers, that learning entailed the mastery of basic skills and resulted from the direct instruction teachers provide to an attentive and largely passive class of students.

As a sociolinguist, on the other hand, Florio-Ruane (1989) was concerned that teachers promote their students' language development, and she had been socialized by her academic discipline to assume that language development could only occur through meaningful participation in discourse. To ensure such participation in the classroom, Florio-Ruane explicitly encouraged teachers to minimize their power and authority so students could participate in classroom discourse in an authentic, more-or-less equal way and, in so doing, have the opportunity to develop their linguistic skills.

I must quickly add that this example is not meant to suggest that Florio-Ruane's approach to classroom discipline is superior to Evertson's approach. Indeed, after graduating from undergraduate school with a liberal arts degree and no student teaching experience, I became a teacher in a Harlem classroom a week after the original teacher of my class ran out of the school shouting she would never come back to such a chaotic situation. For the first few months, I clung to the sort of classroom management strategies Evertson most certainly would have endorsed, even as I knew that, once my chaotic classroom evidenced some measure of control, I wanted to move my teaching in the direction later endorsed by Florio-Ruane.

My point, here, is simply that all research—even the so-called scientific research associated with the Thorndike research tradition—has inevitable value bias built into it. Recognition of this bias was one reason, among many other reasons, that some researchers, during the final quarter of the 20th century, became disenchanted with the process-product paradigm (and also planned variation and other quasi-experimental evaluation designs) and why late-20th century researchers began embracing alternative research paradigms.

The Philosophical Critiques Reason

Thus far, I have indicated that the failure of traditional researchers to produce the sort of definitive, unbiased results Thorndike had indicated they would produce was a reason for the so-called paradigm wars. Opposition to traditional ways of thinking about research and the push for new and different paradigms also were fueled, at times, by less pragmatic, more philosophical critiques. This was certainly the case in the educational administration field, where the focus was not so much on using the results of individual studies to dictate practice but, rather, on developing theory that, presumably, would be useful in helping educational administrators decide what they should do to manage and lead schools and school district.

In fact, theory-movement advocates endorsed the use of theory, in general, not a particular theory or group of theories. This decision made it less likely that a lack of results would be quickly recognized in the educational administration field, as eventually happened with process-product studies in the teaching field and occurred rather quickly with planned variation and other quasi-experimental studies in the evaluation field. Consequently, in the educational administration field, the paradigm wars were fueled by academic critiques and were more philosophical in nature.

Canadian scholar Thomas Greenfield (1973; see also Greenfield, 1986; Greenfield & Ribbens, 1993), for example, grounded his critique of the theory movement in Husserl's phenomenology. This grounding resulted not only in Greenfield's endorsement of the use

of qualitative rather than quantitative research methods in empirical inquiry. It also led to a very different conception of educational organizations. As Culbertson (1988) noted, Greenfield "argued that educational organizations are not 'objective' phenomena regulated by general laws. Rather, they are mental constructs that reflect the perceptions and interpretations of the members" (p. 3). Culbertson went on to describe the significance of this sort of academic critique: "Greenfield . . . fired a shot at the theory movement that was heard around the world," Culbertson wrote, "striking hard at the presuppositions of the theory movement, he precipitated controversy which has not yet ended" (p. 20).

Different academic sources, also from Europe, fueled the critiques of the theory movement by Australian scholar Richard Bates (1982, 1989) and U.S. scholar William Foster (1986). Both Bates's and Foster's critiques were rooted in the Frankfurt School's version of critical theory that posited that society was plagued by the reproduction of inequality across generations. Because of this reproduction phenomenon, the children of winners continue to be winners and the children of society's losers become the losers of the subsequent generation.

According to Foster (1986) and Bates (1982, 1989), the sort of theories endorsed by members of the theory movement contribute to the reproduction of inequality because of the a priori bias embedded in the supposedly empirical studies theory movement researchers conduct. To understand how this a priori bias operates, consider, for example, a researcher studying why students from one cultural group continually fail in school. If the researcher, during the framing stage of their study, characterizes the less-than-successful students as culturally disadvantaged, as was customary in the past, the researcher already has, in essence, identified the source of the problem before data are even collected: by definition, the problem is situated in the students and their culture. There is no reason for the researcher to even consider whether school practices and policies contribute to the under-performance of students from particular social groups or to ask whether school practices and policies are designed to accommodate cultural differences. Because of the framing of the study, in other words, social inequality will now be legitimated "empirically" and "scientifically," and students from different cultural backgrounds will continue to fail.

The point here is not unlike the point made elsewhere in the discussion of Evertson's and Florio-Ruane's differing research-based recommendations for managing classrooms and disciplining students (Reynolds, 1989). The only difference is that critical theorists such as Bates and Foster emphasized that entire groups are systematically discriminated against by the way educational researchers frame their studies, and this discrimination helps to both legitimate and perpetuate social inequality.

So, critical theorists like Bates and Foster paved the way for a somewhat different form of qualitative research, a type geared toward exposing the sources of social inequality and disrupting its inevitable reproduction. Over time, critical social science (Neuman, 2011) took different forms because it was influenced not only by critical theory imported from Europe, but also by the experiences of different home-grown marginalized groups. There will be more about this in what follows.

Summary

This section of the chapter articulated a variety of reasons the so-called paradigm wars broke out during the final quarter of the 20th century. One reason was the failure of traditional educational researchers to generate the sort of definitive findings about cause-and-effect relationships that Thorndike and others had promised would be produced. Others

who challenged traditional thinking about research took note of the value bias that was inevitably built into all forms of research. Still other challenges were more philosophical and were inspired by academic critiques that, in most cases, were originally developed in Europe.

Normally, those who challenged traditional thinking about the form and function of educational research advocated for the use of qualitative rather than quantitative research methods (Lincoln & Guba, 1985). The qualitative methods they endorsed, however, at times differed from each other. The upshot was a fair amount of confusion and conflict in a field that, historically, had passively accepted Thorndike's vision of what educational research should be and do. Little wonder, then, that Gage (1989) dubbed what was happening during the final quarter of the 20th century as *the paradigm wars.*

The Aftermath: Big Tents, Science Wars, and the Expansion of Critical Educational Research

Big Tent Politics

No side won the paradigm wars, though most of the combatants won what might be considered partial victories. For a time, as interest in engaging in methodological and epistemological battles in the research field waned, the educational research field embraced a methodological/epistemological version of big-tent politics (Donmoyer, 1999), the type of politics practiced, in the past, by political parties that included, within their ranks, those with decidedly different ideological beliefs and preferences. During the final decade of the 20th century, for example, space began to be made available on AERA Annual Meeting programs for different forms of qualitative research; even certain arts-based qualitative researchers could, at times, be observed, quite literally, "dancing their data."[1] In addition, very selective AERA journals began publishing more traditional forms of qualitative work (the sort of qualitative work that could always have been published in anthropology and certain sociology journals), and new journals were established to publish less traditional forms of qualitative inquiry.

Quantitative researchers continued to have a prominent place under the educational research field's newly fashioned "big tent," of course, but, for the most part, they eschewed Thorndike-like bravado and did not repeat anything like Thorndike's (1910) claim that quantitative research "would aid us to use human beings for the world's welfare with the same surety of result that we now have when we use falling bodies or chemical elements" (p. 6). Most seemed to understand that the best they could do was produce probabilistic generalizations, the sorts of generalizations that could not guarantee what would happen with *particular* people in *particular* contexts.

The Science Wars

The Federal Government's New "Gold Standard"

During the first few years of the 21st century, the ceasefire that characterized the decade-long era of big-tent politics came to a rather abrupt end. In 2003, for instance, in an invited address to the Annual Meeting of the AERA, Grover Whitehurst, the head of the federal government's newly established Institute of Education Sciences (IES) that provided federal government funding for educational research projects, announced that randomized trials—i.e., the sort of experimental research with control and experimental groups conducted to study the impact of pharmaceuticals—was the new gold standard in federally

funded education research. The title of Whitehurst's invited address, "The Institute of Education Sciences: New Wine in New Bottles," was more than a little ironic, given that, in his address, Whitehurst promised educational researchers would do (and produce) in the 21st century what Thorndike, roughly 90 years earlier, had promised educational research would do (and produce) during the 20th century.

Whitehurst, a statistician by training, appeared to have a blind spot when it came to the history of educational research. He seemed completely unaware of what had transpired in the educational research field during the first three-quarters of the 20th century. Instead, he blissfully assumed that educational research could easily mimic what was done in drug trials and that educational researchers who met IES's gold standard and received IES funding could produce the sort of definitive results about cause-and-effect relationships in education that had alluded educational researchers throughout the 20th century.

Another Tack: Focusing on Being "Scientific"

Other major players in the so-called science wars, the authors of the 2002 National Research Council (NRC, 2002; Whitehurst, 2003) report *Scientific Research in Education* laid out a much more nuanced case that did not—at first glance, at least—appear to mindlessly endorse unachievable goals from the past. Among other things, the NRC report authors appeared to be focusing on a different question than the question paradigm war combatants had focused on. Rather than raising methodological questions—or even questions about the ontological and epistemological assumptions that appeared to undergird different kinds of research methods—the authors of the NRC report focused on defining science and determining which approaches to educational research could be considered *scientific*. The authors of *Scientific Research in Education* even claimed qualitative research could be fit under the science umbrella.

A careful inspection of the arguments articulated in *Scientific Research in Education*, however, revealed that most of the distinctions that could be made between the NRC report and the paradigm war thinking of the past were distinctions without much of a difference. Consider the reports' focus on the concept of *science*. Despite the fact that this term's meaning has always been contested (Harding, 1991, 2005), the authors of the NRC report glibly promoted a single definition of science, one that suggested that to be considered scientific, research must be oriented toward producing empirically validated generalizations and, ultimately, theory that describes causal relationships that exist in a wide variety of different places and times.

This conception of science, of course, has implications for the report authors' endorsement of qualitative methods. Clearly, according to the NRC report's definition, qualitative researchers' intent on providing thick description (Geertz, 1973, 1983) of the often unique and idiosyncratic cultural contexts they studied—i.e., the sort of researchers who Habermas (1968) suggests are motivated by what Habermas characterized as an historical/hermeneutical interest or purpose—are not engaged in science. Nor should they apply for funding that will only be available for research that has the word *science* (as that term is defined by the authors of the NRC report) attached to it.

Three individuals who helped create the NRC report, in fact, made the role the NRC report envisioned for qualitative research explicit when responding to the report's critics in a special issue of *Educational Researcher* focused on critiques of *Scientific Research in Education* (Jacob & White, 2002). Qualitative research's role, Feuer et al. wrote, was to generate hypotheses "when plausible hypotheses are scant" (2002, p. 8). This, of course, was the very

limited role qualitative researchers were permitted to play throughout the first three decades of the 20th century. It certainly is not the only—or even the primary—role advocates for qualitative research during the paradigm wars envisioned playing. In short, a careful reading of *Scientific Research in Education* suggests that, at base, the thinking on display in the book was not appreciably different than the thinking on display in paradigm wars literature touting, say, educational administration's theory movement (Donmoyer, 2020).

Not surprisingly, therefore, the critiques of the book included in the 2002 special issue of *Educational Researcher* also mostly read like the paradigm wars had never really ended. In fact, with one exception, the articles critics wrote could easily have been published decades earlier. The exception was the article in which St. Pierre (2002) championed postmodernist thinking (i.e., thinking the authors of *Scientific Research in Education* had cavalierly dismissed in a footnote). Postmodernism had played, at best, only a minor role in paradigm wars discourse and was normally not invoked until the final decade of the 20th century (e.g., see Scheurich, 1997; Maxcy, 1993), after the paradigm wars had been reduced to occasional skirmishes and almost everyone was permitted to enter the educational research field's big tent.

Summary

In the end, the so-called science wars did not really change much. To be sure, for a time, at least, researchers whose work did not conform to Whitehurst's "gold standard" and/or the thinking about research articulated in *Scientific Research in Education* found federal funding for their research difficult to come by, and, even today, this, undoubtedly, is a problem for those intent on playing the federal grant game. But not all researchers—especially those who study a single case or a small number of cases—need federal grants, or any other type of grant from any other type of funding source such as foundations. A record of publications in selective journals normally is sufficient to ensure that researchers employed by universities keep their jobs and can continue to conduct their brand of research.

To be sure, during the early years of the 21st century's first decade, when the so-called science wars were getting played out, those who occupied the educational research community's big tent were more balkanized than they had been before. Furthermore, this balkanization—for the most part—has continued into the 21st century's third decade. Even today, however, there continues to be a place in the educational research field's big tent for qualitative researchers who are not content to only do their work "when plausible hypotheses are scant" (Feuer et al., 2002, p. 8). All sorts of qualitative researchers who had battled for legitimacy during the 20th century paradigm wars now have a secure place within the educational research community that is still, in many respects, a big tent.

Critical Educational Research

One of these groups of qualitative researchers that still operates in the educational research field's big tent is the group represented by most of the authors included in this handbook. As the title of the handbook suggests, these researchers engage in what is normally referred to as *critical* educational research. The meaning of the term *critical* is often a bit ambiguous. For many, it hearkens back to the critical theory articulated by the Frankfurt School that influenced 20th scholars such as Foster and Bates during the 20th century paradigm wars, but today the term also is sometimes used to refer to work influenced by so-called postmodern/poststructuralist thought. Lather and Smithies (1997) in their book *Troubling the Angels*, for example, take Foucault's entreaty that nobody is innocent seriously by

attempting to undermine their own authority as researchers and authors throughout their book. They do this by using a variety of text devices that function much as the distancing devices Brecht (1964) used in his plays to ensure that audience members did not get too engrossed in the action on stage and stop thinking of the social conditions that produced the action being enacted on stage.

Furthermore, even during the paradigm wars era, critical educational researchers were often influenced as much by their experiences as members of minoritized and/or discriminated-against groups as by European social theory. Patti Lather once again can serve as a case-in-point. Lather's groundbreaking 1986 article, "Research as Praxis," was most certainly influenced by critical theory. The term *praxis* in the article's title clearly signals this, but the methodology described in the article to promote praxis was adapted from the feminist consciousness raising groups in which Lather had participated.

Other researchers from groups society marginalized—researchers of color, researchers from Indigenous groups, and gay, lesbian, and transgender researchers, for example—have always brought their life experiences and social identities to the critical research process. Dillard (2000) and Wright (2003), for example, acknowledged that their notion of what they called an "endarkened epistemology" is rooted, in large part, in the racial discrimination persons of color experienced and continue to experience beyond (and, also, often, within) the hallowed halls of academia. They envisioned research that exposed and challenged the false consciousness society often promoted in African American culture and the cultures of other persons of color.

Similarly, Indigenous researchers' attempts to "decolonize" research methodology (Bishop, 1998; Smith, 1999; Wilson, 2008) were greatly influenced by the cross-generational impact of colonialism on formerly colonized groups. In addition, lesbian, gay, and transgender researchers' work in both the 20th and 21st centuries also had intellectual roots not only in a critical perspective imported from Europe, but also in the discrimination and marginalization gay, lesbian, and transgender researchers experienced in the heteronormative world they inhabited (Foucault, 1990; Pinar, 1998; Sedgewick, 2008, c1990; see also Chapter 7 by O'Malley in this volume).

Historically, of course, critics have charged that this sort of critical research influenced by personal experience was little more than advocacy masquerading as inquiry—and that charge, on occasion, can still be heard today. Lather (1986), however, long ago articulated a compelling response to this criticism in an article titled, "Validity in Openly Ideological Research: Between a Rock and a Soft Place." As this title suggests, Lather argued that all research is ideological. The ideological element is simply hidden in traditional approaches to inquiry. Lather's argument, in other words, was similar to the argument articulated in the earlier discussion of the inevitable value bias embedded in process-product studies of teaching, in planned variation evaluation studies, and, in fact, in all research. At least the ideological commitments of those engaged in critical educational research are quite obvious, Lather noted. As long as there is an honest-to-goodness empirical question that needs to be answered, even within an obviously ideological perspective, emancipatory researchers are fundamentally no different than all other researchers engaged in empirical inquiry.

Those who prefer more traditional messengers than Lather are referred to *Usable Knowledge: Social Science and Social Problem Solving*, a 1979 book by social scientists, Lindbloom and Cohen. In that book, the authors are concerned about how empirical researchers can function in highly politicized environments such as conservative and liberal think tanks. Their focus, obviously, was quite different than Lather's (1986), but their view of ideology and inquiry was essentially the same.

Summary of the Paradigm War's Aftermath

So, after quantitative and qualitative researchers battled each other for roughly two decades during the final quarter of the 20th century, a brief period of détente broke out in that century's final decade. During this period of détente, the field, in essence, constructed a big tent under which quantitative, qualitative, and increasingly, mixed-methods researchers could all practice their crafts in a mostly conflict-free environment.

The peace was temporarily broken during the first few years of the 21st century, however, when influential individuals and groups once again attempted to promote traditional quantitative studies and argued for the marginalization of most types of qualitative research. The so-called science wars that played out during the new century's first few years were, in essence, little more than reenactments of the previous century's paradigm wars, but the battles, this time around, were relatively brief and, for the most part, mostly inconsequential.

Today, in fact, all types of qualitative researchers have a secure place in the educational research field. That group includes the qualitative researchers who have contributed to this *Handbook of Critical Educational Research*, many of whom, in the past, would have been marginalized, even by some other qualitative researchers, for being ideological and explicitly placing their social identities front and center in their inquiry. During the paradigm wars, critical researchers demonstrated that ideology and social identity play a role in all social science research; it is just that the role of ideology and the impact of mainstream-culture identities are not normally recognized by researchers from the cultural mainstream. Consequently, today, critical educational researchers occupy a prominent place near the center of the educational research field's big—though, now, even more balkanized—tent.

Looking for a Legacy

An Obvious Legacy

The subtitle of this reconsideration of the 20th century paradigm wars is: *Looking for a Legacy*. In some respects, the paradigm wars' legacy is easy to see: As was just noted, membership in the educational research field continues to be open to a wide variety of qualitative researchers, including researchers who put their social identities front and center in their inquiry projects (See, for example, numerous chapters in this *Handbook*).

A Less Obvious Legacy

Other aspects of the legacy are not quite so obvious, at least not for some. For example, critical educational researchers have demonstrated that empirical research is never *completely* empirical. Before even the most rigorous quantitative researcher can start counting, that researcher must decide what counts and what *to* count. The researcher must also decide how to characterize the phenomena being counted. If, for instance, the researcher opts to study "culturally disadvantaged children and families" (as opposed to, say, children and families that are simply "culturally different"), the researcher has pre-determined the source of the problem being studied before any data have been gathered, and it is unlikely that our rigorous researcher will even entertain the idea that it is schools—rather than school children and their families—that are problematic, much less collect data that would support or refute such a claim.

In short, after the paradigm wars, we *should* understand that a critical perspective is required to assess all types of research, not just research with the critical label attached. To state the point another way, we should no longer assess the adequacy of any type of study and its results by focusing solely on the rigor of the empirical methods employed. An adequate assessment also must review the a priori framing of a study and determine whose interests and/or what purposes are being served by that framing. In other words, we should no longer expect a study to tell us, only, what works (the name of the U.S. Department of Education's website); we should be asking, "What does the study tell us about what works for whom and/or to accomplish which purposes?" Unfortunately, many in the 21st-century educational research community still are unaware of this legacy of the 20th-century paradigm wars.

An Almost Completely Overlooked Legacy

There is one other *potential* legacy of the paradigm wars that has been even more overlooked in the current era of balkanization, an era during which both researchers and consumers of research who prefer a particular paradigmatic perspective almost exclusively interact with or read the work of researchers who share their preferred perspective and treat work generated from other paradigms with—at best—benign neglect. This overlooked legacy involves appreciating the importance of taking a multi-paradigmatic view of educational issues and phenomena. I have already noted, for example, the need for a critical perspective in interpreting quantitative findings, but it is also the case that quantitative findings, when viewed critically, can be exceedingly useful for those who normally operate under the critical educational research umbrella. At the very least, descriptive statistics are required to tell us how frequently such things as, say, sexual harassment, gender discrimination, or race-based microaggressions occur in organizational settings. Furthermore, when we want to implement a solution to these sorts of problems, it would be helpful to have evidence—even of a probabilistic sort—about the likely impact of the different solutions being considered.

What methods can be used to examine situations and generate solutions from the multi-paradigmatic perspective alluded to in this chapter? Undoubtedly, many such methods could be developed if we: (1) get out of our silos and began to interact with those who view and do research differently than we do; and (2) use research findings and perspectives from a variety of paradigms to solve educational problems and make decisions about which policies and strategies to employ to solve those problems.

Since the start of my career, I have experimented off and on with such methods. My first federal grant, in fact, funded a project that used a study-within-a-study design to explore what an inquiry approach built around the notion of deliberation might look like and the results it could produce. At the center of the project was an evaluation study of an elementary school's somewhat unconventional approach to the teaching of reading and language arts; the evaluation study was built around a group of representative stakeholders deliberating about the program and its apparent or likely impact. At the same time this evaluation study was happening, we also studied the deliberation process used in the evaluation of the school's program and documented the use of diverse paradigmatic perspectives within the deliberation process (Donmoyer, 1991).

Recently, because of one of my former doctoral students' interest in studying leadership in an Indigenous group, I had opportunities to participate in numerous talking circles organized by the Indigenous group. In the process, I discovered that there were

similarities—but also some significant differences—between the talking circles in which I was participating and the deliberation process I had organized many years before. The important point here is that the talking circles also served as a vehicle for examining problems and potential solutions from a wide variety of quite different perspectives/paradigms. After the dissertation study was finished, the student—a key informant from the Indigenous group that the student's study focused on—and I adapted the talking circle process to write about our experiences of gaining access for the study and other matters that arose during (and after) the study (Buchanan et al., 2016).

Conclusion

I want to conclude this chapter with a plea to other members of the educational research community to begin to invent and explore other ways that a multi-paradigm perspective can become a viable part of educational research practice. Our field is different from social science fields like educational psychology and even anthropology, fields that intentionally establish disciplinary boundaries that researchers must work within. The issues and problems those of us in the education field must address are complex, real-world issues and problems that often cannot be fit under a single paradigmatic umbrella. Consequently, everyone in our field should not simply mimic and adapt the methods used by researchers in the disciplines that currently make up the social sciences and that have continued to influence the field of educational research.

Some of us, at least, must attempt to develop methods that will allow us to incorporate a variety of paradigms and perspectives in our efforts to: (1) understand the complex issues and problems that are characteristic of the education field; and (2) generate policies and practices that make sense within our field. The failure of both the paradigm and the so-called science wars to produce anything like a definitive victory for a single paradigmatic perspective opens the door not only for the continued maintenance of a big tent in which all types of educational researchers can do their work, but also for the development of methods that are unique to our field of study and that will encourage the use of a variety of perspectives and paradigms to address educational issues and problems.

Note

1 Also see Bagley and Cancienne's (2002) *Dancing the Data*, and their related CD-ROM, *Dancing the Data Too.*

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3 Critical Approaches to Quantitative Research

Review, Critique, and Applications

Kamden K. Strunk

Introduction

Quantitative methods are ubiquitous in educational research, and in some circles are regarded as a gold standard for "scientific" research. The U.S. federal government invests massive resources in administering educational tests, collecting educational data, and analyzing and distributing educational statistics (U.S. Department of Education, 2003). It also maintains a national database of educational interventions that are supposed to "work," a decision it based on quantitative evidence from randomized controlled trials (Institute of Education Sciences, n.d.). Meanwhile, despite the massive growth of qualitative research and continued proliferation of qualitative methodologies, quantitative research remains centered in many policy and practice conversations.

Although quantitative methods are often taken up uncritically, critiques of quantitative methods are nothing new. These methods have been critiqued for theoretical, philosophical, and practical reasons. Most centrally for the purposes of this chapter, quantitative methods are subject to critiques for doing anti-equity work, being used to reinforce racist ideologies, and for their ongoing role in framing policy debates in benign and equity-evasive terms (Annamma et al., 2014). In this chapter, I begin by describing the history of quantitative methods and their use, and I consider what that history means for the use of quantitative methods in critical and emancipatory research. I then consider the contemporary uses of quantitative methods and how those uses connect with the history of quantitative methods. Subsequently, I describe and interrogate various critical approaches scholars have proposed to quantitative methods. I discuss critiques of those approaches, as well as the use of large-scale datasets. Finally, I offer suggestions for ways to engage in critical quantitative methods moving forward.

Historical Consideration for Criticality in Quantitative Methods

To understand the role of quantitative methods in conversations on equity and justice, and to imagine new applications, it is necessary first to understand the history of those methods and their development. In this section, I will begin by briefly outlining the origins of quantitative methods in educational and behavioral research. I give particular attention to the linkages between the rise of these methodologies and the emergence of eugenics and race science in the field. I then describe some early applications of quantitative methods in education, including the emergence of testing and measurement out of the eugenics movement and the development of intelligence and ability testing as an outgrowth of racist ideologies. I then explore more recent applications of quantitative methods as a

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continuation of the history of such methods. I argue that the historical roots of quantitative methods are still alive and influential in the ways that those methods continue to be conceptualized and applied in the field.

Origins of Quantitative Methods in Educational and Behavioral Research

There is some level of disagreement about the exact point of origin for quantitative methods in educational and behavioral research, but most point to a few key early researchers. One of the important early applications of quantitative methods in these fields was through the development and use of intelligence measures. Designed to measure human intellectual ability, the often-cited founder of the field was Francis Galton. Central to his thinking, which was key to developing theories of intelligence and intelligence measures, was the idea that intelligence is primarily inherited and genetic (Hall, 2003). That view was informed by and interwoven with his avid support for eugenics, and Galton was a prominent eugenicist throughout his career (Hall, 2003).

In the United States, the ideas and principles of intelligence testing were imported and taken up by psychologists. Several key figures emerged in early intelligence measurement in the United States, including Edward Thorndike and Robert Yerkes. Thorndike (1913a) held the view, like Galton, that intelligence was primarily genetic, and that "children spring, not from their parents' bodies and minds, but from the germs of those parents" (p. 227). Here, Thorndike points to the genetic lineage ("germs") of parents as determinative of children's potential and intelligence—a key argument of eugenicists. Thorndike was also influenced by and contributed to eugenics movements of the time (Fallace, 2016). For example, he used intelligence tests he designed to argue that "original differences in intellect, character, and skill . . . are related to the families and races when individuals spring," and eugenics was thus necessary for the progress of society (Thorndike, 1913b, p. 129). The application of the idea of intelligence testing to mass screening of U.S. armed forces personnel was undertaken to assure only intellectually superior individuals were placed in positions of control and leadership. The first mass-testing efforts, the Army Alpha and Army Beta tests, were developed under the explicit and stated belief that Black people were genetically inferior to white people (Hall, 2003). One of the key developers of those tests was Yerkes (1923), who wrote, referring to the results of the Army intelligence scales, that "it behooves us to consider their reliability and their meaning, for no one of us as a citizen can afford to ignore the menace of race deterioration" (pp. vii–viii). Not only were his views on intelligence racist, but he also wrote about the threat posed by immigrants who he believed were also responsible for lowering the IQ of the U.S. population (Yerkes, 1923).

As measurement of human intelligence and learning continued to develop, views on intelligence, informed by racist ideologies and eugenics, continued to flourish. For example, Cattell (1965) argued that intelligence was "largely innate" (p. 369) and biologically determined. Thus, racial differences in intelligence test outcomes were the result of the biological superiority of white people, in his view. He also developed and espoused a hierarchy of races based on intelligence (Tucker, 2009). He was not alone in his views. Others, such as Terman (1961) also argued for genetic racial inferiority, writing of Black people that "their dullness seems to be racial, or at least inherent in the family stocks from which they come" (p. 91). Jencks (1972) similarly argued that intelligence, occupation, and income were all best explained by genetic factors, positing racial gaps in these areas as a result of racial inferiority.

More recently, Herrnstein and Murray (1994) publicized and invigorated the view that intelligence and other measures suggest racial hierarchies in which white people are superior and people of color, especially Black people, are inferior. Their book, *The Bell Curve*, argued that those differences are largely genetic and the result of inherited traits. Their work has been heavily criticized by methodologists and psychologists ever since its publication (e.g., Fischer et al., 1996). Nevertheless, it continues to be widely read and cited work in education, psychology, and intelligence testing, garnering over 3,000 citations since 2015 and over 12,000 total citations, according to Google Scholar metrics.

I highlight the racist history of intelligence measurement in order to demonstrate its early place in bringing quantitative methods to the forefront of educational and behavioral research. As other quantitative methods and strategies came into broader use in educational and behavioral research over time, those methods carried with them the tradition of race science and eugenics continuing to the present day (Carter, 2005). As Zuberi (2001) argued, "statistical methodologies were developed as part of the eugenics movement and continued to reflect the racist ideologies that gave rise to them" (p. x). Modern approaches very rarely deal in any explicit way with the connections of their methods to eugenics, a movement that gradually lost favor in the United States after World War II. However, modern educational statistics continue to employ models of racial inferiority in creating and explaining racial comparisons (Allen et al., 2008).

Importantly, more recent trends in quantitative work diverge from earlier work in a key way. While earlier work most often employed a model of genetic inferiority, inspired by and contributing to eugenics movements, more recent work tends toward social inferiority models (Solórzano & Yosso, 2002). That is, more recent scholars more often offer explanations of racial inferiority that rely on deficiencies in family structure, personal values, upbringing, and home environment. As Kendi (2017) explains, these explanations are two sides of the same racist coin. Both assume, expect, search for, and (perhaps unsurprisingly) find racial differences in which white people score higher than people of color, especially Black people. So, while the two approaches appear at first quite different, they both have at their core a belief in racial inferiority, while explaining that inferiority in different ways. Later portions of this chapter discuss other methodological approaches that seek to address this issue.

The history of race, science, racism, segregationism, and eugenics is the most easily illustrated in the history of quantitative methods. Much of the history of quantitative methods in educational research is caught up with demonstrating, enforcing, and explaining the ideology of white supremacy, though its shape and form change over time (as do the shape and form of racist discourse in the United States (Kendi, 2017). However, equally true is that the same methods have taken up and reified the idea of inferiority of women, queer and trans people, people with (dis)abilities, immigrants, people whose first language is not English, and others (Strunk & Hoover, 2019). In other words, as I and others have argued (e.g., Strunk & Locke, 2019; Strunk et al., 2017), the core organizing ideology of quantitative methodology is white supremacist cisheteropatriarchy with the action of colonization (see Chapter 5 in this volume) and an added layer of ableism. That ideology, which has been fully infused in the development and history of quantitative methodologies, results in comparative models that assume and seek to confirm and explain the inferiority of bodies outside the majoritized.

Contemporary Quantitative Methods and Historical Entanglements

Contemporary uses of quantitative methods rarely acknowledge or actively engage with their racist history. However, looking at the use and effects of the use of quantitative

methods in educational research, the historical entanglements remain discernible. That is, quantitative methods continue to reify and reproduce inequitable systems and outcomes. In some ways, the methods are difficult to disentangle from the dynamics of oppression and marginalization. For example, quantitative methods often make use of group comparisons, including comparisons of majoritized and minoritized groups. Such comparisons reify oppression and marginalization because they compare outcomes between groups of people who have received disparate treatment, conditions, and contexts. They also take uncritically the results of tools that were, in some cases, designed to produce or "prove" racial hierarchies, as discussed earlier in this chapter. In other words, such comparisons set minoritized groups up to be portrayed as lacking or deficient in some way (Strunk & Hoover, 2019). Quantitative researchers have not tended to attempt to measure inputs, disparate social conditions, racism, heterosexism, ableism, linguicism, and other forms of oppression, and have instead tended to measure things like achievement test scores, graduation rates, health outcomes, psychological outcomes, engagement, motivation, and other such variables. The consequence is that quantitative methods continue to "miss" the ways that oppression and marginalization shape the life chances of minoritized people. In practical application, quantitative methods continue to have oppressive applications in the areas of testing, tracking, push-out, and stratification.

Education is rife with testing. People are tested for ability, achievement, "correct" placements and tracking, dispositions, attitudes, and more. Schools place students on different paths or tracks based on test results. For example, students might be assigned to a "gifted education" program, remedial coursework, career preparation tracks, or college preparation tracks. They might be, on the basis of educational and psychological testing, marked as "at risk" or "promising." The available research evidence is clear, particularly with regard to race and racism—those systems of identification and tracking via testing produce inequitable outcomes. For example, multiple researchers have documented the under-identification of students of color, especially Black students, for gifted education and their over-identification for special education (Ford & King, 2014; Ford et al., 2016; Gentry et al., 2019; Wright et al., 2017). Others have documented that placement in various "tracks" (such as college preparation, career preparation, technical skill development, etc.) also tend to place students in inequitable patterns that assume the college worthiness of majoritized students (Ansalone, 2010; Hanushek & Wößmann, 2006). Although various educational paths are important, valid, and viable options for many students, these patterns again demonstrate a stratification of education that occurs in part via testing that either is or is used in inequitable ways. Similarly, the use of educational testing continues to be part of the push-out phenomena that leads to higher rates of leaving school prior to graduation for minoritized students, especially for students of color (Brown & De Lissovoy, 2011; Hines-Datiri & Carter Andrews, 2017; Walker et al., 2017).

In many ways, current uses of quantitative methods often align more closely than one might hope with the history of the field in reproducing and reifying white supremacist cisheteropatriarchal logics. Scholars, particularly scholars of race and racism, continue to document the ways that quantitative research and statistical methods continue to harm minoritized people and communities (Zuberi, 2001; Zuberi & Bonilla-Silva, 2008). Nonetheless, quantitative methods continue to have a kind of capital, particularly in policy decisions. While other methodologies, including qualitative methods, are often powerful for understanding the dynamics of oppression, resistance, and liberation, and provide rich insights into the experiences of students, educators, and families, they are often met with disregard or outright contempt by some in positions of power (Murphy & Dingwall, 2003). Given the

level of disregard afforded to qualitative in comparison to quantitative methodologies, as well as the ability of quantitative methods to answer questions that other methods are not designed to address and to provide analytic insights that might be difficult or impossible through other approaches, a number of critical scholars have pursued what is referred to as "critical quantitative" work. Because qualitative and quantitative methodologies are capable of answering fundamentally different kinds of questions, scholars have continued pursuing critical quantitative work. Indeed, there are both practical and theoretical stakes that drive a continued engagement with quantitative methods by critical scholars.

Critical Approaches to Quantitative Methods

Knowing that the history of quantitative methods in educational research—up to and including contemporary practice—is entangled with racist, sexist, heterosexist, transmisogynistic, ableist, and colonizing ideologies, it might be tempting to argue for an end to the use of quantitative methods. Indeed, some scholars have argued precisely for a moratorium or the outright rejection of quantitative methods in educational and behavioral research (e.g., Oakley, 1998; Toomela, 2010; See also Chapter 2 in this volume on paradigm wars). However, others have recognized that, despite their past and current entanglements, quantitative methods might offer opportunities and insights that are difficult or impossible to obtain through other approaches. As a result, a number of scholars have grappled with how to use quantitative methods for critical, liberatory, and emancipatory research. In this section, I will first summarize some of the main points raised by proponents of various approaches to critical quantitative research. I will then provide additional detail on a specific application that integrates critical race theory and quantitative methods known as QuantCrit.

The call for critical uses of quantitative methods is not particularly new, though it has seen increased interest in recent years. One of the key questions in critical quantitative work is what exactly is meant by "critical." The term "critical" has sufficient elasticity to make its meaning difficult to determine in some cases. It might mean something akin to "important" or "crucial" while in other circles it is a euphemism for "social issues" (a term which, itself, is often a euphemism for race, gender, and sexuality). However, in the literature on critical quantitative methods, "critical" most often means the use of critical theoretical perspectives such as critical theory, critical race theory, queer theory, and other perspectives. Outside of QuantCrit, authors nearly always refer to critical theory (e.g. Stage, 2007). Critical theory is, broadly speaking, a Marxist analytic approach to understanding power, domination, social reproduction, and hegemony (Strunk & Betties, 2019). While those using the term cite those roots and sometimes mention the Frankfurt school, "critical theory" is often used to mean any kind of analysis of power, oppression, or liberation, regardless of whether that analysis made use of the specific concepts and analytic tools of critical theory. I will return to these issues of definition and use of theory later in critiques of contemporary approaches.

Many scholars have noted the problematic issue of positivism, which undergirds the development of all quantitative methods (Stage & Wells, 2014). Positivist epistemological frames, scholars have argued, are inherently at odds with criticality and the project of liberation (Hernandez, 2015). The question becomes how to move away from positivism while retaining the analytic tools it has produced. Even the assumptions of the commonly used statistical tests, like random sampling and assignment, homogeneity of variance, and even normality are derived from positivist ideologies (Strunk & Hoover, 2019). They belie a preoccupation with bias and error which is key to positivist and post-positivist frames. As a result, the positivism that is inherent in the statistical models shapes the kinds of