

## EDITOR'S NOTES

In this volume, we describe what is an increasingly evident way of conducting quantitative research. This approach does not seek merely to verify models but, in addition, to question and then modify models, or to create new models that better describe the ever-differentiating individuals who are the focus of educational research.

We examine a variety of higher education issues from a critical stance, using quantitative methods. We demonstrate ways of moving beyond traditional conceptualizations of quantitative research and use our scholarship to push the boundaries of what we know by questioning mainstream notions of higher education through the examination of policies, the reframing of theories and measures, and the reexamination of traditional questions for nontraditional populations. Although the work presented here is divergent, the commonality of the presentations lies in each scholar's critical approach to conventional quantitative scholarship. We hope to demonstrate that being a *quantitative criticalist* comes with the questions we ask, not with the methods we use to answer them.

The chapters that follow provide perspectives on critical quantitative research and demonstrate how these analyses add to the discourse questioning some of the assumptions of traditional quantitative approaches.

In the first chapter, I invoke various scholars' definitions of critical inquiry, and relying primarily on Kincheloe and McLaren (1994), I provide arguments to justify taking the discourse beyond questions of method. Next I provide examples of the work of *quantitative criticalists* in higher education, and then describe more fully the characteristics of this approach vis-à-vis current dominant research paradigms. Finally, I provide a brief overview of my own research on students' participation in mathematics and science-based majors as I've moved from a postpositivist to a quantitative criticalist.

In Chapter Two, Ben Baez asks how educational research is or can be *critically transformative*. He defines the term *critical* for us and explores the extent to which educational research can offer critiques of our world that allow us to transform it. Because quantitative research is not usually thought about as providing such critique he helps us think about that which we call critical. He ends by suggesting that we judge whether or not research is critical by evaluating the questions asked and the critiques offered.

In Chapter Three, scholars Deborah Faye Carter and Sylvia Hurtado begin by discussing the influence of autobiography on scholarship, particularly for quantitative research. Next they provide illustration using their

own work, then explore key research questions and dilemmas that researchers face in critical work. Finally, they suggest potential solutions.

In Chapter Four, Robert Teranishi describes how the use of between-group approaches in quantitative research on race can limit what we know about educational experiences, opportunities, and outcomes of individual racial groups. He presents examples to illustrate misrepresentation of educational success for Asian and Pacific Islander Americans in quantitative data. Finally, he uses his own research focusing on Asian American students in U.S. higher education to demonstrate that critical research frameworks in quantitative research can yield important and interesting perspectives. These analyses can be applied to the study of other racial groups to improve what we know about subpopulations in broader racial categories.

Laura Perna begins Chapter Five by discussing the importance of studying the underrepresentation of blacks and Hispanics in American higher education. She then describes a traditional conceptual model for examining racial and ethnic group differences in college enrollment. She points out the strengths inherent in using quantitative analyses to address the question and examines challenges that quantitative researchers will face as well. Perna closes with recommendations for the use of quantitative analyses of an integrated conceptual model to gain additional insights into gaps in college enrollment for specific groups.

Next, in Chapter Six, Edward St. John describes what he calls a *critical-empirical approach* to the study of college access. He explores the role of policy researchers in seeking educational equity. He contrasts his approach with the scientific approach most commonly advocated in educational research. He describes his social justice framework, which has evolved from his work, and provides a case study of the influence of educational policy on access to higher education. He concludes with guidance for other researchers.

In Chapter Seven Jillian Kinzie introduces a research project conceptualized and conducted from a critical and feminist perspective. She examines women's participation in mathematics and science-based majors. But by ignoring a traditional assumption about the way students behave, she is able to demonstrate a new possibility for student participation. She elaborates on her critical approach and discusses how that approach influenced the development of her research questions, data analysis, interpretation, and presentation of findings.

In the final chapter, I discuss some of the technical reasons that probabilistic research, in the ways it is often conducted using traditional assumptions, masks the experiences of many participants in education. I present tasks that must be addressed to move higher education from a state of complacency to a dynamic questioning discipline. I close with recommendations for those who wish to incorporate critical perspectives into their own quantitative work as well as for those who wish to read it both critically and appreciatively.

Much of our work can be described as theory development, or even theory disconfirmation. Some of the work in this volume's chapters focuses on criticism of educational systems or policy. We believe it is important to point out weaknesses in educational systems, educational theories, and educational analysis, and we do so in the work presented here. We must put all our resources into critical higher education work—all our approaches and our variety of conceptualizations have a contribution to make. Work reported here can be viewed as example for those who seek to move their own research agendas beyond the expected. All we ask is that you read our work with an open mind regarding what you might learn.

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Editor

## Reference

Kincheloe, J. L., and McLaren, P. L. "Rethinking Critical Theory and Qualitative Research." In N. K. Denzin and Y. S. Lincoln (eds.), *Handbook of Qualitative Research* (pp. 138–157). Thousand Oaks, Calif.: Sage, 1994.

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