
Preface

The first decade of this century witnessed the emergence of a new goal, namely providing equal opportunity to quality education for all students. This goal is becoming a challenge to the international community, to national governments, schools, educators and parents. Mathematics is considered as a major core school subject and is at the center of this challenge.

Toward Equity in Quality in Mathematics Education is a comprehensive book dedicated to the issues of equity and quality in mathematics education and through it I hope to fill a gap in the literature in this respect. This book is based on and driven by four premises. The first premise is that mathematics education is a purposeful collective human activity enacted in a specific social-cultural context and constitutes a complex multifactor system. The second premise is that inequities in mathematics education result from multiple interactions among the factors of the aforementioned system and are not simply ‘achievement gaps’ associated with isolated factors such as gender, ethnicity, or socioeconomic status. The third premise is that inequities occur in nested hierarchical systems of mathematics education i.e. among students in the same class, among schools in the same country, and among countries at the global level. Hence, the inequities in one system are likely to impact those in other systems. The fourth premise is that viewing inequities as interactions in a multifactor system render them amenable to change by changing policies or practices while taking into consideration the complexity of the nested hierarchical systems in which they occur. Using the lens of these premises, this book attempts to recast and synthesize existing research on equity and quality in mathematics education (Part I) and to analyze and interpret TIMSS 2003 data (Part II) from that perspective.

Part I, titled *Equity in Quality in Mathematics Education: Perspectives and Contexts* addresses equity in quality from a personal perspective by telling the story of my journey to equity in quality in mathematics education as well as from the historical perspective of the evolution of equity and quality notions in each of education and mathematics education. Using the construct

of Engeström's activity system, Part I also examines and synthesizes equity and quality research in school, country and global contexts.

Part II, titled *Equity in Quality in Mathematics Education: Across Countries Comparisons Based on TIMSS 2003 Data*, presents an analysis of TIMSS 2003 contextual data across a sample of 18 countries. This analysis attempts to identify, compare, and interpret student, teacher, school, and country related variables which account for variation in mathematics achievement. Part II concludes with an epilogue containing proposals for moving toward equity in quality.

It would be impossible to acknowledge all those many individuals who have contributed to this book as it is an accumulation of professional experiences spanning my whole career. I am indebted to all my students, colleagues, and friends who have contributed directly or indirectly to this work. My thanks also goes to my daughter Hania, my son Raja, and my sister-in-law Samira Shami for their help in technical matters. My great appreciation goes to my wife, Muna, herself a mathematics educator, who acted as a critical reader through all the stages of preparing the manuscript. She provided valuable comments regarding the content, clarity of meaning, and language use. I would also like to acknowledge the contribution of Ms Nada Rahhal who did the statistical analysis and the preparation of the graphs.

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This book was an opportunity for me to use equity in quality as a context for reflecting on my professional career and making coherent meaning of the many professional experiences I have had. I hope the reader will enjoy this book as much as I enjoyed my journey to get to it.

Beirut, Lebanon

Murad Jurdak



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Jurdak, M.

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