Latinos/as and Mathematics Education

Research on Learning and Teaching in Classrooms and Communities

edited by

Kip Téllez | Judit Moschkovich | Marta Civil

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Research on Learning and Teaching in Classrooms and Communities

A volume in
Research in Educational Diversity and Excellence
Yolanda N. Padron and Hersch C. Waxman, *Series Editors*

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FOREWORD

Luis C. Moll
University of Arizona

This volume is the result of several years of research on mathematics and education produced by the NSF-sponsored Center for the Mathematics Education of Latino Students (CEMELA). From its beginnings, as conceptualized by Marta Civil of The University of Arizona, the goal of CEMELA was to undertake research on this crucial research topic in a variety of social settings and conditions found in different regions of the country, and with a special focus on Latino students, given the great demographic growth of this population. The work thus required not only the collaboration of colleagues from four different universities, and of administrators, teachers, families and students at many schools, but also broad agreement on a general framework for the work that the group came to depict as a sociocultural approach.

The great challenge offered by any sociocultural approach is that of bringing to life the study of human learning and development. As Alexander Luria (1982) famously suggested, the key is to locate the study of human thinking not in the "recesses of the human brain or in the depths of the sprit" but "... in the external processes of social life, in the social and historical forms of human existence" (p. 25). This volume seeks to meet this challenge, and does so admirably, through a range of studies of mathematics and education situated in a variety of conditions for learning.

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The emphasis of the work presented herein, however, is not only on understanding the social configuration of circumstances for teaching and learning mathematics, or on whether broader social forces constrain or enable these activities. The emphasis is also on identifying the resources available to enhance or otherwise mediate or transform those immediate circumstances within which we ask students to learn mathematics. In brief, a central characteristic of the work is on turning diversity into a pedagogical asset.

There are, to be sure, no prescriptions offered here, no facile ways of bringing theory directly to practice, there never are; but there is a strong orientation to teaching and learning as socially accomplished, and to indentifying and gaining access to the cultural resources that can serve to facilitate a challenge, and perhaps even a transformation, of the disturbing status quo of education for Latino students. In the chapters that follow, therefore, the reader will come to appreciate, among many other themes, the power of social relations in teachers engaging students in learning; the value of bilingualism in expanding the teachers and students' discourses for learning; and the importance of helping children discuss and understand the relevance of mathematics to their learning and development in and out of classrooms.

I commend my colleagues for their valuable contributions to this volume, and for taking up the challenge inherent in understanding student learning in connection to the actual relationships that constitute their realities. As L. S. Vygotsky (1926/1997) wrote many years ago:

> Ultimately, only life educates, and the deeper that life, the real world, burrows into the school, the more dynamic and the more robust will be the educational process. That the school has been locked away and walled in as if by a tall fence from life itself has been its greatest failing. Education is just as meaningless outside the real world as is a fire without oxygen, or as is breathing in a vacuum. (p. 345)

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PREFACE

This volume is intended for an audience of researchers, mathematics educators, and policymakers who are interested in the intersection of Latina/os and mathematics education. As we point out in the initial chapter of the book, the ongoing underperformance in mathematics of Latina/os in U.S. schools is unacceptable, and we hope that this book will serve as both a resource and motivation to make the necessary changes to transform this woeful condition.

We intended for the volume to be an interdisciplinary collection. While all the authors are scholars in the field of education research, several bring expertise in fields other than mathematics education. This mingling of expertise was a purposeful choice because we believe that improving the mathematical learning of Latina/os is a challenge that requires a wide range of voices and perspectives.

As readers will notice, many of the chapters acknowledge the support of a National Science Foundation Center for Learning and Teaching, the Center for the Mathematics Education of Latina/os (CEMELA). This is no coincidence. As the editors of this volume, we were among the principal investigators for CEMELA, and many, though not all, of the authors throughout the book were affiliated with CEMELA. As a collaborative consortium involving four universities (University of Arizona, University of Illinois at Chicago, University of New Mexico, and University of California, Santa Cruz), dozens of schools and school districts, and several community/afterschool projects, CEMELA brought together researchers from several disciplinary backgrounds: language specialists with an interest in mathematics, mathematics education researchers, mathematics educators with an interest

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in culture and language, and cultural specialists with an interest in mathematics education. CEMELA offered faculty, doctoral students, and postdoctoral researchers a space to consider the ways in which research could inform what we know and need to know about improving the mathematics education for Latino/a children and youth. Collaborations across institutions included summer institutes, research symposia, and presentations at national and international conferences. Several of the chapters here are the result of these very fruitful collaborations, across disciplines and now across space.

Although CEMELA was a galvanizing organization for many of the authors in the volume, we are confident that the research and attention to improving Latino/a performance in mathematics will continue. If this volume motivates other researchers to join in the effort, then it will have been a great success.

We would like to thank the authors in this volume for their commitment and patience and the series editors for their support. We would also like to thank Hersh Waxman and Yolanda Padron for their series' editorship. Esperanza Zamora assisted whenever we needed her. We are also indebted to Nancy Rosenbaum, whose skillful and careful proofing and formatting contributed much to the accuracy and coherence of the book.

Last, but never least, we would like to thank our families for their continued support.

—Kip Téllez
Judit Moschkovich
Marta Civil

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