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A Century of Leadership in Mathematics and Its Teaching

Promoting Equitable Practices in Mathematics Education

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PREFACE

Supporting Students at all Levels through Equitable Practices

This issue of the *Journal of Mathematics Education at Teachers College (JMETC)* features articles highlighting equitable practices that support student achievement in mathematics education. In general, we see such practices as those that help educators meet all students where they are, support their individual needs, and enable them to achieve their full potential. Each of the articles that follow provide specific examples of how practitioners and researchers can anticipate, recognize, and address opportunities to meet students' learning needs, regardless of their educational backgrounds. Readers will see that these efforts are not solely at the student-level, but also at the level of educators and larger educational systems.

To begin this issue of *JMETC*, Thomas and his colleagues explore how bias emerges in the way preservice teachers interpret students' mathematical thinking. The authors describe how non-academic factors—such as perceived notions of race—may influence preservice teachers' perceptions of children's mathematical abilities. This provides several implications for these teachers' future practice, including their equitable noticing of students' mathematical behavior and ability to be address potential bias in the classroom.

Meagher, Koca, and Edwards also focus on preservice teachers, by exploring their generation of mathematical conjectures. Through detailing a classroom episode, the authors discuss the importance of preservice mathematics teachers continuing to engage in mathematical conjecturing, even as experienced mathematics students themselves. By doing so, the authors argue that these experiences enable teacher educators to model best practices for nurturing the generation of mathematical conjectures in their future classrooms. Furthermore, teacher educators engaging in such practices will be better equipped to structure such activities for their students in the future, and authentically address difficulties that these students may encounter.

Osborn and Ma shift the focus to examining student behavior, particularly their help-seeking behaviors and how these relate to mathematics achievement. Through examining Programme for International Assessment (PISA) data, the authors found a significant, positive relationship between these behaviors and different outcome measures. This finding seems to transcend individual students, classrooms, and schools. The authors also highlight how educators can promote help-seeking behaviors in an equitable way for all students to become competent “doers” of mathematics.

Khan continues the examination of student behavior and investigates a specific support system for first semester calculus students in college. The author analyzes anecdotal and survey data to reveal the influence of

PREFACE (Continued)

supplemental instruction and online components on students' growth in metacognitive and study skills. The modest connections between these is detailed, which paves the way for future research on how technological and supplemental supports can influence student success in high-risk courses. Through incorporating such supports into these classes, educators may be able to address underlying differences in student achievement that are not evident in a traditional classroom.

Sole shifts the focus again, to that of equitable practices at the program level by investigating how policy and systemic procedures influence the educational paths of community college students. The author challenges traditional mathematics course placement methods, which she describes as reinforcing inequitable circumstances among students from under-represented populations and those deemed underprepared for college-level work. The experimental placement initiative focused on high school grades rather than high-stakes standardized tests to place students and included innovative academic support structures within the classroom. In her analysis of this, Sole discusses how such an initiative can address issues of equity inherent in current procedures and support a diverse population of students to be successful in science, technology, engineering and mathematics (STEM) and non-STEM educational pathways.

We conclude this issue with an invited piece in honor of our 10th anniversary publication from an alum who began the doctoral program 10 years ago, and who continues to advocate for humanizing mathematics education. Dickman, named a 2020 Early Career Award winner for Teachers College, writes in his article about two novel approaches to support teachers and students as they engage in problem posing. He begins with some of the history related to this important yet underemphasized component of mathematics education, and then focuses on providing examples of authentic practitioner materials for working towards educational environments that support participants in both feeling and being mathematically generative.

Collectively, these articles detail equitable practices at the level of the student, educator, teacher educator, and system. It is our sincerest hope that the research presented here inspires our readers to continue to learn and promote equitable practice in mathematics education. In doing this, we can support and value all students, and enable them to reach their highest potential in mathematics.

Dyanne Baptiste
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Guest Editors