

Chapter 56

Viewing the Implementation of the CCSS through the Lens of One Transformative District–University Partnership

P. Michael Lutz

California State University – Bakersfield, USA

ABSTRACT

The study described in this chapter is on a more-than-20-year collaboration between a university mathematics department and its local high school district. The joint effort has created multiple components (such as strengthening teachers' mathematics knowledge, developing teacher leadership, and increasing teachers' appreciation of the importance of engaging students in tasks with a high cognitive demand) that are facilitating the districts' current efforts to implement the California Common Core State Standards for Mathematics. It describes a partnership that has always been grounded in mutual respect.

INTRODUCTION

This chapter shares a case study of the history of collaboration between the California Mathematics Project (CMP) regional site in the Mathematics Department at California State University, Bakersfield (CSUB) and the Kern High School District (KHSD). It is written from a participant-observer perspective versus one of a “fly on the wall” and covers more than a quarter century. The relationship between the district and the university is ongoing, continually growing, and “grounded in mutual respect” (Greene & Gallagher, 2009, p. 1)

with participants from both institutions believing that each side of the partnership brings unique and valuable expertise to the collaboration.

Of course when the collaboration began several decades ago, no one was thinking about the Common Core State Standards in Mathematics (CCSSM), but there is evidence that the district's current movement to implement the new standards is being facilitated with by-products of previous joint efforts in ways that can be referred to as transforming. The vocabulary has changed in some cases, but the work to build the foundation began decades ago.

DOI: 10.4018/978-1-4666-7363-2.ch056

The KHSD includes 18 comprehensive high schools, 6 alternative education campuses, 2 career technical education sites and serves 35,000 students. Kern County is largely agricultural and leads the state in oil and natural gas production. Approximately half the population is Hispanic, and CSUB is the only four-year institution within 100 miles.

A BRIEF HISTORY

The 1980s were a time of great change in mathematics education, especially in our state. Wilson (2003) provides an in-depth description of efforts to reform mathematics education in the state in the 1980s and 1990s and the subsequent curriculum “wars” that occurred. During those two decades and beyond, Margaret DeArmond, now retired, was a mathematics teacher in the district and vividly recalls the turmoil that occurred. In an interview on 17 October 2013, her words confirmed Wilson’s observation that the 1985 *Mathematics Framework for California Schools, K-12* “advocated a less traditional, more progressive approach to mathematics education, moving away from rote memorization and the dominance of worksheets toward ‘teaching for understanding.’” DeArmond recalled that the 1985 California Framework was “very different” and that one of the mathematics faculty at CSUB, Dr. Lee Webb, had been on the writing committee. She knew Dr. Webb as the organizer of a mathematics field day each year on the campus and as being very popular among the K–8 teachers who had taken his mathematics classes as undergraduates.

The 1985 Framework was the first DeArmond had ever heard of the use of manipulatives and technology as tools for the teaching of mathematics. She was in her second decade as a local high school teacher and would soon become a mathematics teacher leader in the state, including being a strong advocate for the appropriate use of tools such as manipulatives and technology.

In 1989, the same year that the National Council of Teachers of Mathematics published its *Curriculum and Evaluation Standards for School Mathematics*, Dr. Joe Fiedler was hired by CSUB’s Mathematics Department. He and DeArmond would soon become key colleagues in collaborative activities between KHSD and CSUB. In an interview, Fiedler recalls hearing of DeArmond first when he was presenting at a conference across the country in Washington, DC. When one of the participants learned where he lived, the participant said that he must know Margaret DeArmond, who had recently conducted an impressive workshop at his school. Not long after that Fiedler was in Baltimore, and a participant there shared a similar story. He was impressed that she was known so far from where she lived and worked.

DeArmond recalls the first time she met Fiedler. She had heard of him as being a mathematics professor and interested in the use of technology. One day when she was making a presentation in a local auditorium and stressing the importance of the use of technology, she told the audience that she had heard that Dr. Fiedler had made the statement “If a textbook has tables in the back, don’t buy it.” At that point, Fiedler, who was in the audience, stood up and shouted “I am here!”

DeArmond vividly recalls that she still did not know much about Fiedler’s positions on current issues in California’s mathematics education until the evening he came up to her after another presentation that she made locally and asserted, “I’m on your side!” The declaration planted the seed for a professional collaboration that continued to grow during the next two decades.

COGNITIVE DEMAND

As Hess states below, the Common Core State Standards for Mathematics call for raising the cognitive demand of the tasks that students are given, a focus that has existed in the KHSD-CSUB partnership for a decade and beyond.

9 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

www.igi-global.com/chapter/viewing-the-implementation-of-the-ccss-through-the-lens-of-one-transformative-district-university-partnership/121888

Related Content

Bringing Dynamic Geometry to Three Dimensions: The Use of SketchUp in Mathematics Education

Nicholas H. Wasserman (2015). *Cases on Technology Integration in Mathematics Education* (pp. 68-99). www.irma-international.org/chapter/bringing-dynamic-geometry-to-three-dimensions/119137

Cases on STEAM Education in Practice Catapults and History of Catapults

Warren James DiBiase, Judith R. McDonald and Kellan Strong (2020). *Cases on Models and Methods for STEAM Education* (pp. 224-243). www.irma-international.org/chapter/cases-on-steam-education-in-practice-catapults-and-history-of-catapults/237797

Constructing the Knowledge Society: China's Experience

Li Wengang, Chen Yulai and Guo Jia (2015). *STEM Education: Concepts, Methodologies, Tools, and Applications* (pp. 153-166). www.irma-international.org/chapter/constructing-the-knowledge-society/121838

Sustainability in Higher Education through Basic Science Research: Strategies for Corporate Bodies in Pharmaceuticals

P. Yogeeswari and D. Sriram (2015). *STEM Education: Concepts, Methodologies, Tools, and Applications* (pp. 666-676). www.irma-international.org/chapter/sustainability-in-higher-education-through-basic-science-research/121866

The GeoGebra Institute of Torino, Italy: Research, Teaching Experiments, and Teacher Education

Ornella Robutti (2015). *STEM Education: Concepts, Methodologies, Tools, and Applications* (pp. 426-436). www.irma-international.org/chapter/the-geogebra-institute-of-torino-italy/121853