

Chapter 6

The Necessity of Shared Vision to Achieve Coherence: Lessons Learned in the Appalachian Mathematics Partnership

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ABSTRACT

The adoption of Common Core State Standards for Mathematics (CCSSM) has implications for state-level curriculum, policy, and assessment. For most states, including North Carolina, the CCSSM represents a departure from recent state curricula and requires more than a simple “retooling” of content organization. To respond to such change, district and school-level leaders must share a common vision of high-quality mathematics teaching based on common understandings. Just as importantly, classroom teachers must share this vision. In this chapter, the authors describe the Appalachian Mathematics Partnership (AMP), the factors that have significant impact on partners, an activity, and how the understanding gained from this activity impacted future professional development with the goal of working towards a shared vision and coherence.

OVERVIEW

The state-level adoption of Common Core State Standards for Mathematics (CCSSM) has obvious implications for state level curriculum, policy, and assessment. Less apparent are immediate implications for district and classroom implementation. For most states, including North Carolina, the CCSSM represents a departure from recent state

curricula and requires more than a simple “retooling” of content organization. To respond to such change, district and school-level leaders must share a common vision of high-quality mathematics teaching based on common understandings. Just as importantly, classroom teachers must share this vision. Educators, both teachers and district leaders, must select proactive means of leveraging school resources and expertise for the success of

DOI: 10.4018/978-1-4666-7363-2.ch006

all learners. All must agree that in the wake of a changing curriculum, high expectations for every student must be maintained and all students should have access to equitable opportunities for learning. Boaler (2002) explains, school personnel must stop focusing on “what students *cannot* do” and start focusing on “what schools *can* do” (p. 241). Without a shared vision and a coordinated effort, many districts find teachers and administrators struggling independently to accomplish curricular and pedagogical change.

The goal of the CCSSM Common Core State Standards is to:

Provide a consistent, clear understanding of what students are expected to learn, so teachers and parents know what they need to do to help them. The standards are designed to be robust and relevant to the real world, reflecting the knowledge and skills that our young people need for success in college and careers (National Governors Association Center for Best Practices & Council of Chief State School Officers, 2010).

An important part of CCSSM is the Standards for Mathematical Practice (SMP), which characterizes students’ mathematical practices that teachers should develop (CCSSM, 2010). The SMP rely on important ‘processes and proficiencies’ with longstanding importance in mathematics education, although it may be noted that the presence of these processes and proficiencies in mathematics education has yet to imply their widespread presence in mathematics classroom. The first of these are the National Council of Teachers of Mathematics (NCTM) process standards of problem solving, reasoning and proof, communication, representation, and connections (NCTM, 2000). The second are the strands of mathematical proficiency specified in the National Research Council’s report *Adding It Up*: “adaptive reasoning, strategic competence, conceptual understanding (comprehension of mathematical

concepts, operations and relations), procedural fluency (skill in carrying out procedures flexibly, accurately, efficiently and appropriately), and productive disposition (habitual inclination to see mathematics as sensible, useful, and worthwhile, coupled with a belief in diligence and one’s own efficacy)” (2011). In this paper, we describe our partnership and the need for including district and school leaders, the factors that have significant impact on our partners, an activity that we completed with both groups, discussing the similarities and the differences between district leaders and teachers, and how the understanding gained from this activity impacted future professional development with the goal of working towards a shared vision and coherence.

DESCRIPTION OF THE PARTNERSHIP AND PARTICIPANTS

The Appalachian Mathematics Partnership (AMP), funded by a Department of Education Mathematics Science Partnership grant, provides professional development preparing teachers and administrators to initiate changes in policy and transform practice with the expectation that tangible change in the classroom occurs over time. Fundamental to the project is a goal not only to prepare teachers with professional development that allows them to internalize the content of high-school mathematics courses based on the CCSSM but also to assist in creating school- and district-level environments in which teachers are supported beyond the life of the project in weaving new instructional and assessment techniques into their practice. Thus, in general, our participants are teachers in 8th grades that may teach Math 1 and secondary level mathematics teachers.

Central to building supportive, sustainable environments in the AMP project is the inclusion of professional development for Leadership Teams, or LTs. For the leadership component, our school

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