NCSM Journal

of Mathematics Education Leadership

Spring 2009
Vol. 11, No. 1

Fanning the Flames of Greatness

In This Issue, We Offer Ideas for Extending Your Passion to Other Mathematics Professionals

NATIONAL COUNCIL OF SUPERVISORS OF MATHEMATICS

www.mathedleadership.org

Table of Contents

CORRECTION FROM WINTER 2008 JOURNAL
The Winter 2008 *NCSM Journal* omitted co-author Daniel Clark Orey from the byline of the article, "It Takes A Village: Culturally Responsive Professional Development and Creating Professional Learning Communities in Guatemala." Dr. Orey is a professor of mathematics and multicultural education at California State University, Sacramento. We regret the omission.

Purpose Statement

The purpose of the National Journal of Mathematics Education Leadership is to advance the mission and vision of the National Council of Supervisors of Mathematics by:

- Strengthening mathematics education leadership through the dissemination of knowledge related to research, issues, trends, programs, policy, and practice in mathematics education
- Fostering inquiry into key challenges of mathematics education leadership
- Raising awareness about key challenges of mathematics education leadership, in order to influence research, programs, policy, and practice
- Engaging the attention and support of other education stakeholders, and business and government, in order to broaden as well as strengthen mathematics education leadership

Developing a Shared Vision for Mathematics

Cathy Kinzer (cakinzer@nmsu.edu)
New Mexico State University
Janice Bradley (jbradley@nmsu.edu)
New Mexico State University

"We will learn, understand, and use mathematics concepts and processes as critical thinkers and effective problem solvers."

Much has been written in education about developing and implementing a shared vision for school districts (Lambert, 2003; Senge, 1990, 1994; Weiss, Miller, Heck & Cress, 2004). As Senge (1990) states, "Few, if any, forces in human affairs are as powerful as shared vision" (p. 206). A shared vision is a mental image of what is important to the organization and its individuals. It reflects the beliefs and shared values (Hord & Sommers, 2008) and captures what the group wants to create together through collective commitment.

How can a school district create a shared vision for all students' mathematics learning that includes a broad range of stakeholders in the development process? This story belongs to a school district that is a convergence of cultures living in the southwest. As a school district, we faced numerous challenges with our fifth superintendent in five years and new standards-based mathematics curricula that were adopted in grades K-8. The district did not embrace a common view of what mathematics teaching could look like and each campus had diverse approaches and outcomes.

The district had a history of school-based decisions. Each school taught its own math curriculum. Educators in the school district asked how we could develop a supportive and cohesive structure that provides a focus and direction for mathematics learning for all students. When a few administrators and mathematics educators gathered in a room to develop a five-year implementation plan for mathematics, they realized the district had many components working independently, and the district was not functioning coherently as a learning organization. We thought about the educational community and concluded the mathematics plan must be developed with the voices of the parents, teachers, mathematicians, and administrators. From this meeting of a few educators, the District Leadership Team (DLT) emerged.

As the DLT worked together, a group of dedicated people representing a microcosm of the school system, community, and university partnership developed. The team included mathematics educators, mathematicians, administrators, curriculum specialists, teachers, state legislators, business people, school board members, parents and mathematics specialists. The team agreed to work collaboratively to learn about the current state of mathematics teaching, and what could be done to improve or refine the mathematics learning for all stakeholders in the district.

The team began by developing norms and building a safe learning environment. The superintendent addressed the group at the first meeting and stated that the purpose of the DLT was to study the data (student achievement, demographic, and surveys) together so as to learn about

Mathematically Connected Communities project is a partnership between New Mexico State University, the New Mexico Public Education Department Math and Science Bureau, and school districts to improve mathematics teaching and learning.

the current status of mathematics teaching and learning and over time to develop a comprehensive five-year math plan to guide the district.

The DLT used several resources in its work to achieve the aims outlined by the superintendent, including the following: the Southwest Educational Development Lab's Working Systemically Model (Buttram et. al. 2006); data from the Scaling up Mathematics Achievement (SUMA) Research Team; and the ideas of purposeful distributed leadership (Hargreaves & Fink, 2006). These resources were used to think about the district mathematics program and student achievement. The DLT studied the current state of the system and conducted a gap analysis using the Working Systemically Model (SEDL). The team learned to work together through dialogue, reflection, inquiry-based thinking, and building both the culture and capacity for learning. DLT members became an effective learning group over time through doing mathematics, analyzing data, and evaluating research within a collaborative inquiry process.

One of the most important resources for the DLT was the use of the Scaling Up Mathematics Achievement (SUMA, 2007) research data. The National Science Foundation SUMA research project is a partnership between the public school district and the local university to study the mathematics implementation process in relation to student achievement. SUMA played an integral part in providing data to district stakeholders, including the DLT, through both quantitative analysis and a design-based research process. The SUMA researchers attended the DLT sessions to provide data for the group throughout the year.

The SUMA research data was based on the SUMA Building Capacity Model. The SUMA model included three primary elements: 1) quality aligned and learned curriculum; 2) teaching quality and purposeful collaboration; and 3) leadership/policy/community support for learning. In an effort to align with the Building Capacity Model, three learning groups were formed as each DLT member chose one element of the SUMA model to focus on. These learning teams engaged in ongoing conversations, data analysis, and study.

Through many hours of discussion, inquiry, and debate the DLT began a process of developing a shared vision for mathematics that was clear, compelling, and connected to articulated goals for learning mathematics.

The DLT Process for Creating the Mathematics Vision included:

1. Creating a vision statement based on personal and professional mathematics learning experiences from stakeholders including parents, teachers, administrators, university mathematicians, mathematics educators, curriculum specialists, business people, state senators, and mathematics coaches.
2. Comparing our vision statement with national and state visions for mathematics learning.
3. Revising the vision based on research, data, and national and state documents.
4. Developing a succinct statement of the vision to clearly communicate to all stakeholders. (Ex. *Succinct District Math Vision: We will learn, understand, and use mathematics concepts and processes as critical thinkers and effective problem solvers.*)
5. Sharing the complete vision statement and the "succinct" version with stakeholders across the district.
6. Articulating and documenting throughout the system what the vision will look like in classrooms, schools, in district policy, resources, and professional learning activities.
7. Considering the vision dynamic — one that can grow over time as it is enacted and refined and as data provides evidence of results.

We have learned from this process the importance of bringing together diverse stakeholders as partners to create a district vision that focuses attention on what is important in mathematics teaching and learning. A collectively shaped vision provides a clearer sense of direction for all stakeholders and can guide decisions related to professional learning opportunities, curriculum, and instruction. These actions can be systemically coordinated and aligned to take measured steps towards attaining the vision. Data will indicate the ways that administrators, children, parents, and teachers understand and support the vision.

As a District Leadership Team, we have engaged in purposeful collaboration to co-construct a five-year math plan and a vision for mathematics. The DLT recognizes that the vision will come to life as it is lived in the classrooms and schools. The academic year provides time for pursuing the vision, providing feedback, and reflecting on the journey. These efforts contribute to realizing a shared vision for mathematics.

References

Hargreaves, A. & Fink, D. (2006). *Sustainable Leadership*. San Francisco. Jossey-Bass.

Hord, S., & Sommers, W. (2008). *Leading Professional Learning Communities; Voices from Research and Practice*. Thousand Oaks, CA. Corwin Press.

Huie, S. B., Buttram, J. L., Deviney, F. P., Murphy, K. M., & Ramos, M. A. (2005). Alignment in SEDL's "Working Systemically Model." Austin, TX. Southwest Educational Development Laboratory.

Kinzer, C., Wiburg, K., Korn, K., & Benedicto, R. (2008) Scaling up Mathematics Achievement; Building Capacity Model. Retrieved from: *http://education.nmsu.edu/projects/suma/index.htm*.

Lambert, L. (2003). *Leadership Capacity for Lasting School Improvement*. Alexandria, VA: Association for Supervision and Curriculum and Development.

Scaling Up Mathematics Achievement (2007). National Science Foundation. Award Number 0733690.

Senge, P., Kleiner, A., Roberts, C., & Ross, R. (1994) *The Fifth Discipline Fieldbook: Strategies and Tools for Building a Learning Organization*. NY, NY. Doubleday.

Senge, P. (1990), *The Fifth Discipline: The art and practice of the learning organization*, NY, NY. Doubleday.

Weiss, I., Miller, B., Heck, D., & Cress, K. (2004). *Handbook for enhancing strategic leadership in the math and science partnerships*. Chapel Hill, NC; Horizon Research, Inc.