5 ELEMENTS COMBINE IN A FORMULA *for* COACHING

South Carolina initiative carves out time for science and math coaches in schools

BY NAN DEMPSEY

Brenda Black-Morrison is a coach, but not in football, basketball, or soccer. She is a science coach at a rural elementary school in Pacolet, S.C. As science coach, she spends her days moving from classroom to classroom, planning science instruction with teachers, observing science lessons, reflecting with teachers on lessons taught, sharing in teachers' excitement about students' science successes — and sharing in their disappointment when lessons do not go as planned. She models or co-teaches lessons, locates resources, downloads current research, and works with teachers on their learning — within the confines of a school day.

In 2003, the Mathematics and Science Unit (MSU) of the South Carolina Department of Education developed the Mathematics and Science Coaching Initiative. The model — one coach, one school, one content area — requires participating schools to commit to a three-year partnership. The three-year commitment ensures sufficient time for coaching to become an integral part of the school. In the 2006-07 school year, 144 coaches are working with 2,500 elementary and middle school teachers and administrators from 45 school districts, reaching about 58,000 students in the state.

In Spartanburg School District Three, administrators and Pacolet Elementary School Principal Martha Thomason analyzed the school's test data and reviewed the school's improvement goals. The group decided the school needed a greater emphasis on science, and Pacolet Elementary emerged as a science coaching school.

Over the past three years, the effect on teacher and student learning

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has been evident. From 2004 to 2005, the number of students scoring proficient and advanced in science on the Palmetto Academic Achievement Test for 3rd grade increased 27%, from 10.6% to 37.7%. Fourth grade increased from 24.2% scoring proficient and advanced to 38.6% in those categories, and 5th grade improved from 35.6% to 41.2% for the same time period. District administrators pointed to the only change made at the school — the addition of a science coach.

Math, English/language arts, and social studies scores also increased. Pacolet had been rated by the state as unsatisfactory in 2004, but in 2005 earned a rating of excellent for Adequate Yearly Progress on the state report card. Third graders experienced an overall increase in the number of students rated proficient and advanced for tested subjects, from 18.1% to 42.5%; 4th graders jumped from 26.2% to 42.5%; and 5th graders showed some gain, from 28% to 29%. Overall, the scores were the top in the district.

EMBEDDED TIME FOR LEARNING

The key to the improved student learning was teacher learning. Teachers, however, needed a way to learn that would not add to the time pressures they felt already. By using time within the school day for coaching, Pacolet found the answer to the conundrum. The literature supports this approach.

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Once summer vacation, weekends, holidays, professional development days, early dismissal, parent conferences, class picnic, field day, field trips, awards ceremonies, assemblies, and state/district testing days are eliminated from a typical calendar, only 64 hours per subject remain for instruction during a single school year (The Education Trust, n.d.). It is imperative that educators make every instructional minute count.

By using time within the school day for coaching, Pacolet Elementary found the answer to its conundrum.

Research suggests that coaching is an effective professional development strategy to help teachers make those minutes count. Coaching increases the instructional capacity of schools and teachers (Neufeld & Roper, 2003, p. v). Providing time for coaching increases student learning.

Stephen Barkley (1999) suggests that time is made, not found. Coaching provides that made time. According to Hayes Mizell (2006, p. 2), "Coaches are a dynamic, concrete, and positive way to 'embed' adult learning in the routine of the school day." MSU coaches log the number of hours they spend with individual teachers at their schools. The data suggest that each coach provides the equivalent of eight additional embedded professional development days in each school.

MAKING TIME

Pacolet employed five strategies to create time for coaching: buying time, using common time, freeing time, embedding time, and using existing time more effectively.

1. Buying time

Pacolet Elementary's science curriculum is based on purchased, inquiry-based science kits aligned to the state academic standards.

Although the kits have accompanying teacher manuals and additional resources, Black-Morrison found that teachers often lacked the background knowledge or experience with the manipulatives and equipment to teach the lesson well.

The principal hires substitutes to allow grade-level teams to work with the science coach to learn the skills necessary to teach using the science kits. Together, the science coach and teachers study and discuss the content, walk through each lesson, discuss the content to be taught, and prepare needed materials. Black-Morrison demonstrates and models kit lessons, and the teachers practice the lessons together before introducing them to students. Within a few weeks, each teacher has kit-specific training for each of the science kits at their grade level without leaving the building or relinquishing personal time after school.

Brenda Black-Morrison begins the planning meetings questioning teachers about their goals for the unit. She asks probing questions to determine what evidence teachers will accept that students understand the material.

During the summer, teachers received a stipend for additional learning with the science coach or to attend science professional development sessions Black-Morrison had identified.

2. Using common time

Administrators at Pacolet Elementary adjusted teachers' schedules to provide daily common planning time for teachers in each grade level. Most planning for science instruction takes place during each of these weekly meetings, but the coach often works with grade-level teams to integrate science across the curriculum, coaching teachers to "teach smarter, not harder."

Lunch is an often overlooked common time. With the help of special area teachers, paraprofessionals, or parent volunteers, the principal periodically releases a team of grade-level teachers from lunch duty to meet with Black-Morrison. They discuss journal articles aimed at strengthening their pedagogical content knowledge, learn to use video streaming technology, analyze test data, or look at students' work. These "learn at lunch" sessions have served as an incubator for collaborative practice at Pacolet Elementary.

3. Freeing time

Another attempt to create time is by allowing teachers to specialize. For example, 1st-grade teachers have four science lessons to teach. At Pacolet, each teacher mastered and taught one kit to all 1st graders. One teacher teaches "her" kit to all 1st grades while others concentrate on the other 1st-grade kits. Some 1st graders study new plants while others study solids and liquids. Mastering a single kit and planning for its instruction frees teachers to spend time refining their lessons. Every teacher does not have to master every kit, and teachers gain time and expertise by teaching one kit well.

South Carolina's gains

According to the U.S. Department of Education:

- South Carolina's 4th graders had the best gains in the nation in National Assessment of Educational Progress science in the 2005 testing.
- Eighth graders had the third-best gains.
- South Carolina was one of only five states to show improvement in both 4th and 8th grades.

http://ed.sc.gov/news/more.cfm?articleID=662

4. Embedding time

Black-Morrison is regularly accessible to teachers arriving early and leaving late. She designs and leads the staff development at her school, whether a full day of learning, an impromptu individual coaching session, or a lengthier team meeting. She plans schoolwide celebrations when goals, large or small, are attained. She does not have a homeroom or a classroom to call her own. Instead, her time is an integral thread woven within the context of school.

5. Using existing time more effectively

Schools may be tempted to have coaches work with small groups of struggling students, an ineffective use of coaches' time. Working collaboratively with teachers on their teaching practices and on increasing their content knowledge has greater impact. Collectively, teachers reach many more students than a single coach ever could. An on-site coach provides continuous professional learning support.

A TYPICAL DAY

What does a day look like when time for professional planning, learning, and leading is embedded?

Black-Morrison meets daily with grade-level teams or individual teachers to look at unit goals and the next lesson to be taught, and to determine what evidence the teacher will accept that the goals have been met. While these weekly planning meetings are not mandatory, the principal expects teachers to meet regularly to plan and reflect with the coach. Before becoming the science coach, Black-Morrison was a respected teacher and the "go-to" science person at Pacolet, so teachers have been eager to have more access to her time.

Black-Morrison begins the planning meetings questioning teachers about their goals for the unit. She

asks probing questions to determine what evidence teachers will accept that students understand the material, paraphrasing teachers' responses to move them toward more self-directed learning. Next, she poses instructional questions, content questions, and questions regarding materials, all the while mediating teachers' thinking and allowing them to become more resourceful and empowered.

"I could not teach science without our science coach," said Carrie Wilson, 5th-grade teacher. "She helps me with lesson planning, and we work together to actively engage students using the science kits. Her knowledge of the content and standards enables me to focus on exactly what needs to be addressed in the 5th grade. She observes my teaching and gives me guidance on my strengths and weaknesses."

During one individual session with a 2nd-grade teacher, the coach worked to help the teacher connect successful teaching strategies from a recent lesson to the ongoing skills the coach was working to develop in teachers in the school. Black-Morrison questioned the teacher as she clarified her learning goals for the unit, outlined how she knew the goals were met, anticipated instructional strategies, approaches, decisions and how to monitor them, identified a personal learning focus, and reflected on the coaching process.

When the coach is not meeting with teachers, she observes teachers as they work and students as they learn. While many coaches schedule classroom visits, teachers give Black-Morrison a daily schedule, and she navigates, unannounced, in and out of classrooms during science instruction. She observes how well the planned lessons are implemented, if instructional goals are met, and whether the teacher is comfortable with the content. The coach often rolls up her sleeves during these observations, offering extra help to students as they engage in hands-on science. Later, the teacher and coach reflect on the observation during teachers' planning periods, during recess duty if other teachers cover for them, or, if teachers request, before or after school.

Pacolet Elementary School
Pacolet, S.C.

Grades: Pre-K-5
Enrollment: 395
Staff: 27
Racial/ethnic mix:
White: 82%
Black: 15%
Hispanic: 1%
Asian/Pacific Islander: less than 1%
Native American: 1%
Other: 1%
Limited English proficient: less than 1%
Languages spoken: Hmong, Spanish
Free/reduced lunch: 56%
Special education: 22%
Contact: Martha Thomason, principal
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The principal ensures that the context for effective coaching is in place. When necessary, teachers also are given individual released time to work with the coach. In addition, Pacolet Elementary has 10 professional development days and two faculty meetings per month for staff development when more in-depth professional learning opportunities take place.

CONCLUSION

Pacolet Elementary's willingness to find time for coaching appears to have paid great dividends both in student learning and in teacher learning. Teachers and teaching at the school have changed.

According to Rick DuFour and Robert Eaker (1998, p. 133), "The concept of changing culture may seem simple enough, but changing culture is not like changing décor." Bringing teachers together to reflect on their practices and evaluate their own assumptions regarding teaching and learning allows them to better shape that culture. Continuous engagement with the coaching cycle over time changed Pacolet Elementary teachers. And their change has changed students.

"Children are now actively engaged in inquiry-based, hands-on science activities," Thomason said. "Student enthusiasm is evident when you enter any classroom during science instruction. Students work cooperatively to solve problems. As principal, it is also gratifying that there are never any discipline referrals originating during science lessons. The students truly love it!"

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