



Principals Exhibiting Student-Centered Leadership Correlates with Positive School Climate Indicators in Title I eMINTS Schools and Higher MAP Math Scores in Title I eMINTS Classrooms



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Abstract

Results of 40 school observations in Title I eMINTS FY03 Schools indicated that positive school climate could be distinguished by the nature of interaction between the building principal and students. Building principals who were classified as student-centered positively affected the climate of the school. In this context, student-centered leadership was defined as maintaining high visibility with the students: visiting classrooms, relating to students in school settings, monitoring student achievement and progress. Four correlations were flagged for statistical significance between student-centered principals and school climate indicators. Student-centered principals were more likely to lead schools where student work was displayed in the classrooms, where visitors were welcomed, where office staff related positively to students and where teachers attended to and instructed student behavior in public areas. Analysis of student MAP scores also shows significant differences by principal leadership status on the mathematics tests. These results support previous analyses of the importance of principal leadership in eMINTS schools.

Introduction

Three core outcomes define success for the eMINTS program. They are: student performance; teacher adoption of a constructivist approach to education and implementation of inquiry-based teaching strategies; and a school climate that support the first two goals. Studies support that leadership by the building principal impacts the climate of schools.¹ Research by Ubben and Hughes indicated that principals can establish a school climate that improves student productivity.²

Background on eMINTS Title I FY03 Schools

Elementary schools that participated in the FY03 cohort of the eMINTS program were Title I schools. The eMINTS program provided two years of professional development in the use of multimedia technology in the classroom using inquiry-based teaching methods to at least two teachers in each school.

¹ Kelley, R. Thornton, B. & Daugherty, R. (2005) Relationship between measures of leadership and school climate. *Education*, 126(1), 17-25.

² Ubben, G., & Hughes, L. (1992). *The principal: Creative leadership for effective schools*. Meedham Heights, MA: Allyn and Bacon.

This report is one product of the eMINTS evaluation project. Other reports and their overall evaluation plan are available at <http://www.emints.org/evaluation>.

The eMINTS Evaluation focuses on student impacts, teacher impacts, changes in learning environments and outcomes of project services.

The FY03 eMINTS cohort consisted of 40 schools in 40 districts. Based on Missouri state enrollment data, the elementary schools in this study had student populations of 89 to 728. The Missouri Department of Elementary and Secondary Education (DESE) funded at least two classrooms in each school and required that participating schools install at least one eMINTS classroom in the third or fourth grade. Other classrooms could be installed in any other grades in the school. Six schools installed eMINTS classrooms in third grade only, 12 installed eMINTS classrooms in fourth grade only and 22 schools installed eMINTS classrooms in both the third and fourth grades. The total number of students in grades three and four in the FY03 cohort schools was 4332 and about 45 percent of these students were enrolled in eMINTS classrooms in the 2003-2004 school year. Roughly half of the students in the FY03 cohort took the science and social studies tests. Also, FY03 was the first year that the eMINTS professional development program worked with principals to inform them about the goals of the eMINTS professional development program and encouraged principals to assist in the integration of eMINTS instructional practices into the overall instructional programs of their schools.

The FY03 cohort is the first eMINTS cohort to use federal Title IID competitive funds, administered by DESE, as their primary funding source. Using this funding source substantially changed the eligibility criteria for participation in the eMINTS program. Prior to 2002, staffing constraints occasionally limited the geographic areas eligible for application, but, for the most part, all Missouri elementary schools could apply. Beginning in 2002, the pool of eligible schools was limited by federal poverty criteria. This change has rendered the comparison of MAP results from eMINTS schools to statewide MAP results inappropriate. As the population of eligible schools is no longer all Missouri elementary schools, this report will not compare results from eMINTS schools to statewide totals. Instead, this report will compare MAP scores among schools in the FY03 cohort. The MAP analyses are based on 2004 results.

Research Questions

What are the leadership acts that contribute to a positive school climate?

Is there a relationship between student-centered principals and student achievement?

Methods

Data for this research study were collected at all 40 FY03 eMINTS schools in the winter and spring of 2004. The schools in the study were designated as Title I Schools. A scoring guide was used to assess the overall climate of the school. The research design also employed interviews with building principals to gather qualitative data. Semi-structured interview questions were developed. The principal interviews support the scoring guide.

School Climate Scale

The eMINTS school climate scale was used to explore the relationship between school climate and student-centered leadership. The school climate scale provided a framework for a systematic observation of each eMINTS school on selected dimensions. This scale contained ratings of ten dimensions, ranging from the initial impression to global representation. Each dimension was scored using a four-point ordinal scale. The scores

on each dimension were correlated to one another to identify key relationships between the observable environment of the school setting and principal-student interaction. The scale tallied individual Title I eMINTS schools on ten dimensions. These dimensions were assessed:

1. Student work displayed in the hallways and other public areas.
2. Physical comfort of the building.
3. Building maintenance and cleanliness.
4. Front office welcome and initial impression
5. Interaction between the building principal and the students
6. Interaction between the office staff and the students.
7. Attention to student behavior by teachers in public areas.
8. Behavior of students in the hallways.
9. Lunchroom environment.
10. Global representation of pictorial materials displayed.

Each of the ten dimensions was rated on a scale from 0 to 3. A ranking of “0” indicated the dimension was assessed as inadequate, “1” indicated the dimension was assessed as minimal, “2” indicated the dimension was assessed as good and “3” indicated the dimension was assessed as superior.

Four dimensions of this scale were positively related to the interaction of the building principal and students. These dimensions were: front office welcome and initial impression, student work displayed in public areas, the interaction between office staff and students and the attention to student behavior by teachers in public areas.

Key Component: Relating eMINTS School Climate to Principal-Student Interaction

“The principal is central to shaping the climate of the school.”³ The eMINTS model recognizes that administrators play an important role in school-wide implementation of the eMINTS instructional model. Development of a professional learning community within a school leading to school-wide renewal and improvement is a stated goal of eMINTS administrator professional development. Leadership styles are related to the implementation of eMINTS and part of the training is building community.⁴ This research establishes the building principal as a decisive influence on school climate in eMINTS schools. Principals who exhibited student-centered leadership were positively related to four dimensions on the school climate scale.

The principles highlighted in this report as student-centered come to the forefront in many customary school activities. A snapshot of one school led by a student-centered principal follows:

³ Mizell, M. (2003). Shooting for the sun: the message of middle school reform. National staff development council. www.nsd.org/library/authors/shootingsun.psf. Friday, October 24, 2003.

⁴ See eMINTS for Administrators on the eMINTS website: <http://www.emints.org/programs/admin/faq.shtml>.

Everyone greets visitors and volunteers to the building, even the custodians. Children's art, photos and schoolwork are exhibited throughout the building. The lunchroom is labeled *dining room* and the students sit at round tables with student-made centerpieces at each table. Classes make and arrange centerpieces on a revolving basis. The principal indicates that building community is a goal. To that end, student seating at lunch is rotated monthly. The principal's office has been redecorated to be more child-friendly. A large executive desk has been replaced by a small soft blue desk, chairs are painted pink and a yellow bench and various beanbags serve as extra seating. Bugs and butterflies are pictured in the wallpaper. Volunteers are given a space to work and volunteers are present and working with students. Students with special needs are integrated in general education. The kindergarten class interviews the principal about the job for a class-writing assignment. Principal greets students by name. Principal is seen on the playground and telling students to have a good day. At one time, one student is reminded of a behavior expectation that was talked about the day before. In a classroom, the principal joins the class in an experiential activity. Teachers are encouraged to use the digital camera to get students pictures up in the classroom. After school, principal meets with a team of teachers to address the needs of a new student who was acting out. The first decision reached was to build a relationship with the parent.

As this example shows, student-centered leadership is actionable in a web of situations spread over the school day. These principals nurtured and encouraged students by maintaining high visibility with them.

High Visibility Typifies Student-Centered Leadership

Student-centered principals strengthened their connection with students by maintaining high visibility. Building principals were observed exhibiting intentional and continuous connection with the students. Data from a meta-analysis of 70 studies demonstrated a relationship between effective leaders and visibility with students. Visibility was defined as high-quality contact and interactions.⁵ In this eMINTS study, principals exhibiting student-oriented leadership knew their student population and maintained high visibility with them. A theme that was echoed by these principals was "I know all of the kids," and some principals added, "And most of their parents."

The principals not categorized as student-centered interacted with students in distinctly different ways. To illustrate: As part of morning announcements, the principal wished part of the student body a happy birthday. However, some names were spelled out loud because the principal was unsure how to pronounce the name.

In this eMINTS study, high visibility was determined on the basis of observing principals visiting students in the classroom, relating to students in school settings and monitoring student achievement and progress.

⁵ Waters, T., Marzano, R. & McNulty, B. (2004) Leadership that sparks learning. *Educational Leadership*, 61 (7), 48-52.

Principal observed in classrooms

For student-centered principals, regular visits to the classrooms helped to shape and sustain relationships with the students. These principals dealt with challenging demands on their time, yet made a concentrated effort to visit classrooms as part of the basic operation of the schools.

When a student-centered principal walked into classrooms, the students knew him or her. They called the principal by name and asked the principal to come and look at their projects. Principals stated that these visits were part of building community, showing interest in student work, stimulating student achievement, modifying student behavior and checking the energy of the building.

Student-centered principals described their role in the classroom in these ways:

I try and get to everybody in a day's time somewhere along the line. Sometimes I'll take over a teacher's classroom so a teacher can meet with a parent for a few minutes. You just never know in what capacity I'm going to be in there. Sometimes I'm part of an activity; sometimes I'll be a part of whatever they're doing if it's a hands on activity they're making . . . so it just depends on what's going on.

I'm in the classroom all the time . . . today, I sat down with one child and we edited his PowerPoint. . . I'll just go over and sit down and see what they're doing. . . I'll sit and talk to the kids [and ask] 'What are you doing?' I'll find out if they know the objectives of the lesson they're working on.

I tell teachers, 'I'm going to be in your classroom a lot.' . . . Students know they are not invisible. I think it helps with discipline. The kids know you're walking in there and they see you, you know their name. . . [I say], 'How are you doing today, are you going to have a good day?' Sometimes I'll walk through; sometimes I'll sit down and watch a lesson.

I go into everyone's classroom every day, because I start the day that way. I go around and check to make sure everybody is doing OK -- it gives me a little snapshot of what is going on in the classroom. Kind of like a checklist: is there active teaching going on, active learning, is it more a teacher in her seat, kids in their seats? . . . I make sure that I go into at least one classroom to view instruction every day. We do formal evaluations, too . . . I prefer the unscheduled visit because you get a truer snapshot of what is going on in the classroom. . . . I usually always try to leave a little sticky note on their door so students can read it. . . . 'I liked the way your kids were doing such a good job with reading.' . . . I usually try to recognize what the students are doing.

Classroom visits were a norm for student-centered principals and their students. One principal said, “I think the more you are in the classroom, the more students get used to your coming in and it’s not an interruption.” When an observer entered the classroom, a student said, “She’s just observing the classroom just like when [principal] comes in here.”

When the principals encountered students outside of the classroom, they could speak in detail about a lesson they observed. For example, one principal remarked on the students sitting in a taped off area that designated a covered wagon space as part of a *Westward Ho* lesson. During the evaluation period, principals were heard talking about, *Chinese New Year*, *Missouri Government* and *Civil War* lessons, to name a few.

In contrast to student-centered principals, a typical response from those principals rated as not student-centered said it was too hard to visit the classrooms on a regular basis. These principals could not describe what was happening in the eMINTS classroom. When asked about the eMINTS classroom, two principals could not address the question, one responded, “I don’t know,” and the other said that it was a “hard question that could not be answered.” Two other principals could speak only in general terms saying respectively, “a lot of neat activities,” and a “unique way of teaching.” In one incidence, the statement that 60 percent of instruction is computer based inaccurately represented the eMINTS classroom. One principal dismissed the question with “I really don’t like computers.”

Classroom visits were part of the everyday operations of the student-centered principals. These principals were observed in other school settings in addition to the classrooms.

Principal observed in school settings

A norm student-centered principals shared was being visible in a variety of school settings. They were observed in the front of the schools when busses arrive, in the hallways, in the cafeteria, on the playground, working with students on a service project and the list goes on. Their interviews substantiated the observations with: “I’m the kind of principal that’s out here every morning greeting busses;” “I greet them when they walk down the hall; the kids know they can walk up to me and they’re not going to be turned away;” “I think the visibility at the lunchroom makes a difference. I do the condiments. I’m the ketchup, mustard squirter;” and, “I take a rotation for recess duty.”

Some principals said being visible was a way to take care of a lot of little issues so they never become big issues. The students felt comfortable approaching the principals, in part, because they were used to seeing them before, during and after school. Below is a discussion with one principal who genuinely puts students first:

I try to be out where the kids can see me in the hallways. I do morning duties before school every day, lunch duties, after school bus duties, I’m on duty every day. I like the kids to know that I’m going to be around and I’m there. And, some of that is just to make sure that I get to know them. It’s a good time to get to know kids and at the same time they know that

I'm going to be around so it might be a way of preventing some misbehavior.

Principals not exhibiting student-centered leadership revealed a different mode of operation. Evaluators did not observe these principals in other school settings during the observation. When asked in interviews about this, three different responses were:

“I'm going to say, ‘no’.”

“We seemed to have put that on the back burner.”

“The classroom teachers should take care of that.”

Student-centered principals were observed in a variety of school settings and talked about how this affected their students in the interviews. These principals were also observed monitoring student achievement and progress.

Principal observed monitoring student achievement or progress

A key aspect of student-centered principals was the monitoring of student achievement or progress. These principals honored achievement and progress in different parts of the curriculum. One principal elaborated that student achievement does not only mean the students who can earn 100% on a spelling test, but also achievement for doing something out of the ordinary. Every Wednesday, this principal hosted a morning assembly to recognize students who were making progress by treating them to a soda. Another principal spoke of attendance not being a high priority for some families, so progress is monitored. Incentives ranged from lunch with the principal to tickets to a professional ball game. A few other examples of structured recognition of student achievement by principals include:

- Reading recognition with “I read to my principal” ribbons.
- Fine character recognition with a student photo and a hug.
- Good citizenship award with student recognition in cafeteria in front of all their peers.
- Honor roll designation gets students a hamburger from McDonald's.

In most cases, structure or organizational routine aided principals in keying in on individual students. In one school the student of the week eats in the principal's office on Friday. Candles were lit and music was played for this student. The principal interview described the routine:

It gives me a chance first of all to visit with the kids. . . I like being able to get to know the kids and watch them grow up. . . I keep a little cheat sheet and I write down their name and I'll write down something that I've learned about them. . . I get really interesting answers . . . then I write a personal postcard to each child's family and say, ‘I had the pleasure of eating lunch with your child today as student of the week and I really enjoyed finding out about her or him.’ . . . I have had the best response from that activity this year; you would have thought that I was sending

money through the mail. . . I really try to make it specific. Then they know I was really listening to their child and it makes a difference.

In all cases, the monitoring of student progress was also done on an informal but recurring basis. These principals said they make an effort to be very approachable and encourage teachers to send students to be recognized for achievement. A principal said, “Kids know they get a lot of pats on the back from this office.” A second said, “It’s pretty neat, you know we have students that come on a reoccurring basis now for good behavior and just for reinforcement.” A third principal said that students come all the time to show their writing or art work. “They know that my door is always open.”

In contrast, a different routine was witnessed of principals not classified as student-centered. A revealing comment came from one principal, “As principal I probably get bogged down with management problems. I’m jealous of the principal that knows every student’s name and what they’re doing, because I don’t.”

Considerable attention was given to monitoring student achievement and progress by student-centered principals. These principals used their positions to foster, reward, recognize and monitor student achievement in various areas of the curriculum.

Table 1
Principal Presence in the School

Value	Criteria	Frequency	Percent
0-Inadequate	Principal does not interact with students during the school day observed	3	7.7
1-Minimal	Principal is observed speaking to students in a respectful voice.	4	10.3
2-Good	Principal is observed conveying high expectations to students, giving authentic praise, speaking in a respectful voice.	9	23.1
3-Superior	Principal is observed in classroom or lunchroom. Interacts with students throughout the day. Evidence that principal knows achievement or progress of students.	23	59.0
Total		39	100.0

*frequency missing = 1

Table 1 shows the results of the principal presence in eMINTS schools. In the FY03 eMINTS schools, three principals were not observed interacting with the students. Four school principals were observed speaking in a respectful voice to students sometime during the observation. Nine principals were observed conveying high expectations and giving authentic praise to students. The most observed principals were the ones who interacted with students throughout the day in various school settings, communicating with them in a fashion that notices their achievement and progress.

Statistically significant positive relationships were established between student-centered leadership and four school climate scores: front office welcome and initial impression, exhibiting student work in public areas, office staff relating to students, recognizing students by office staff and teachers attending to and instructing student behavior in public areas.

Front Office Welcome and Initial Impression

Complaints about citizens feeling shut out and not welcome in the schools have been cited in Kettering research.⁶ In the eMINTS schools led by student-centered principals, citizens were welcomed in a variety of ways. Every adult in the school contributed to an inviting school climate and that climate began as the visitor arrived at school. The strongest correlation with student-centered leadership was the front office welcome and initial impression. Thompson maintains that there is a need for instructional leaders in public schools to create an inviting and welcoming atmosphere for not only students, but the community.⁷ In the words of the student-centered principals:

- “We really involve parents to help them feel welcome in the building . . . we look at how we can make the building better.”
- “I’m a very open-door policy kind of principal. We have a lot of parents who don’t have a telephone, but when they come to the door and want to talk, I don’t put them off. I very much welcome them.”
- “Our volunteerism has increased since I’ve been here and I think it’s because of the atmosphere We make everyone feel welcome. We have a lot more parent volunteers . . . parents are a benefit.”
- The word is out that we do not turn our backs to the community. We welcome them in to give us support and help and be a part of the school.”

The focus of the *welcome and initial impression* variable was on how visitors were accommodated on arrival. Practices identified as contributing to a superior first impression were: a warm welcome, an invitation to sign-in as a visitor and being offered a visitor badge, an indication of school lunch options and the offer of a guide to lead the visitor to a destination.

Field notes of two schools rated with a superior first impression follow:

Very welcoming. Visitors are greeted at the door. The month of February is Fun Month at the school. Today is hat day, so the office staff, teachers

⁶ Mathews, D. (2006). Reclaiming public education by reclaiming our democracy. Kettering Foundation Press, Dayton, Ohio. p. 42.

⁷ Thompson, D. (2000). Organizational learning in action: becoming an inviting school. *Journal of Invitational Theory and Practice*: Vol. 10, 52-72.

and students are wearing hats. The speech teacher was [the evaluator's] companion during the day; she gave a tour of the school, introduced visitor to other members of the staff and joined visitor for lunch. Volunteers are welcomed and accommodated. They are given training materials in the area of reading. There are volunteers in the school today helping students with reading and helping to staff the school library.

Visitors are welcomed. A prominent welcome sign greets visitors. A friendly volunteer, who is a member of the Foster Grandparent Program, sits at the entryway, assuring that visitors' sign in, get their visitor passes and report to the office. There are three visitor parking spots in the front of the building.

Field notes of a school rated with a minimal first impression follow:

A little awkward. No recognition or welcome in the school by the secretarial staff or the principal. It was discovered that a school lunch option would not be possible because visitor was not in the computer system and the office did not handle cash. The principal heard this and said there was nothing that could be done. It must not be easy for volunteers or parents to eat with their children. In fact, there are no volunteers in the school during the days observing the school. The only other interaction in the front office was being informed not to leave things in the faculty lounge because things get stolen.

Table 2
Front Office Welcome & Initial Impression

Value	Criteria	Frequency	Percent
0-Inadequate	Visitors ignored, unsure of visit, no sign-in	0	0.0
1-Minimal	Visitors receive a cool welcome, aware of visit	3	7.5
2-Good	Warm welcome, with 2 of the 3 indicators below	11	27.5
3-Superior	Visitors receive a warm welcome: invited to sign-in & given a visitor's badge, given lunch options, escorted to room	26	65.0
Total		40	100.0

Table 2 presents the frequency and percent of the front office welcome and initial impression. In three of the forty schools, evaluators received a cool welcome. For the schools observed, most of the time the evaluators received a warm welcome. They were invited to sign-in as a visitor and offered a visitor's badge; they were given the opportunity to buy a school lunch and were provided a guide to reach their destination.

Exhibiting Student Work in Public Areas

A sense of community strongly influences student development.⁸ Student-produced work displayed in public areas symbolically represents that students are a part of the school community and their work is valued by the school culture. The student-centered schools were places rich with student made papier-mache, dioramas, life-size posters, cooperative learning projects, newsletters, maps and sculptures in public areas. The *student work exhibited* variable measured artwork on view from every classroom at children's eye level in public areas of the school.

Field notes from two schools follow:

There is a lot of student work and posters on display. In the foyer there are several Missouri history dioramas, posters of students who won the day's principal award, etc. In the hallways there are displays of student work and posters promoting the student "math-a-thon" to benefit St. Jude's Children's Hospital. Some these posters are professionally produced, but many of them are student made.

Pictures of students, student work and newspaper articles which feature students are in the halls. Monday is the 100th day of school and the hallways are full of student-made displays--things like 100 inches, 100 items, everything 100.

In student-centered schools the academic content went hand-in-hand with the student displays. Social studies models were displayed in libraries, environmentally friendly studies were spilling over in the hallways, real world experiments were graphed on bulletin boards, scientific experiments were set up in niches and lunch rooms were decorated with student designs.

One student-centered school displayed student artwork in the principal's office on a rotating basis. The principal sent a letter home to announce that the office was being "honored" with the student's work.

⁸ Quick, P. & Normore, A. (2004) Moral Leadership in the 21st Century: Everyone is watching-especially the students. *The Educational Forum* 68 (4), 336-347.

Table 3
Student Work Exhibited in Public Areas of School

Value	Criteria	Frequency	Percent
0-Inadequate	No schoolwork or artwork displayed in public areas	0	0.0
1-Minimal	Items in public areas are not child produced but adult or commercially produced	4	10.0
2-Good	Some child-produced items displayed in public areas	14	35.0
3-Superior	One exhibit per room displayed in hall or other public areas. Items displayed on child's eye level.	22	55.0
Total		40	100.0

Table 3 lists the criteria established for student work exhibited in public areas of the school. In four of the forty schools, items exhibited in public areas were adult or commercially produced; in fourteen of the schools, there were some child-produced items in public areas; in twenty-two of the schools, each room had something on exhibit in public areas and items were displayed at various heights to accommodate a child's eye level.

Office Staff Relates to Students and Their Progress

In schools led by student-centered principals everyone played a role in building community. These schools promoted school climate in all interpersonal interactions, including student interaction with office staff. Office staff was observed positively engaging with students. They made an effort to improve the physical and social environment for the students. It was not unusual to enter an office seasonally decorated by the secretary for the benefit of the students. In these inviting places, secretarial staff would greet students as a valued person, asking about their day and their class work. When students came in tardy, the staff was glad to see them; when they brought a slip from the teacher, they were pleasantly accommodated. During these observations, it was apparent that some office staff attended school socials, fundraisers and functions. Likewise, when feasible the teachers included office staff in student activities. For example, in one school the Remedial Reading teacher had students read short passages to different people in the building. The secretary was included as one of the five people for students to practice reading.

The *relating to students by office staff* variable was determined by students being treated in a positive manner with evidence of office staff aware of student achievement.

Table 4
Relating to Students by Office Staff

Value	Criteria	Frequency	Percent
0-Inadequate	Office staff treat students in a negative manner	1	2.6
1-Minimal	Office staff is cordial & custodial to students	4	10.3
2-Good	Office staff handles students in a positive manner	13	33.3
3-Superior	Office staff handles students in a positive manner and there is evidence that office staff know achievement or progress of students	21	53.8
Total		39	100.0

*frequency missing = 1

Table 4 indicates how students were recognized by office staff. In one school, students were treated in a negative manner. Overwhelmingly students were recognized in a positive manner by office staff.

Attention to Student Behavior by Teachers in Public Areas

Teachers were observed working with students to create an orderly environment. There were social support systems where students could be socialized in respectful and consistent ways as part of the larger community. No single model of behavior management describes all of the student-centered schools. Observations captured teachers being proactive with at-risk students, using instructed behavior, recognizing students exhibiting desired behavior and using peer mentors. However, the common feature in student-centered school was the attention given to expected behavior more often than punishment for inappropriate behavior. One principal succinctly stated this approach:

We constantly try to reinforce good behavioral expectations and talk to the kids, speak into their lives. Discipline is not about punishment. Discipline is about changing behavior. So, if somebody needs more practice on something, we provide that as part of the consequence . . . The counselor follows through with things if there are concerns . . . our school is working toward a behavioral goal. . . the goals have to do with respect. . Those are talked about daily.

Principals thinking ahead to avoid problems and giving attention to expected behavior measured the *attention to student behavior by teachers in public areas* variable.

In schools that used the same student expectations school-wide, these expectations were posted across the building. The principals said that it was easier to have consistency throughout so everyone used the same language. One principal said, “There’s not a long list of dos and don’ts, but how this place can be a really great place to learn, if we all have the same expectations.” For example, teachers would ask students, “How are you not meeting the expectations,” when students needed to make a better choice.

Some schools trained the entire staff in a specific behavior intervention strategy. One principal explained how the staff works at de-escalating a situation by making the students aware that they are responsible for their actions. The principal elaborated on student and teacher responsibility by stating that the teacher is not to solve the problem for the student, the students are expected to solve the problem. The teacher is here to help the student and the whole program is about responsibilities. In this school, teachers were in the hallways and if a student was having a problem, there was a resource person who sat and visited with the student to find out if there was something going on that needed resolution.

Table 5
Attention to Student Behavior by Teachers in Public Areas

Value	Criteria	Frequency	Percent
0-Inadequate	Students exhibiting disruptive behavior. Teachers use belittlement for control	0	0.0
1-Minimal	Teachers are cordial, but custodial and authoritarian to students.	4	10.0
2-Good	Teachers think ahead to avoid problems.	19	47.5
3-Superior	Teachers think ahead to avoid problems. Minor problems are handled before they become serious. Attention given for appropriate behavior.	17	42.5
Total		40	100.0

Table 5 presents the percentages of attention to student behavior by teachers in public areas. Evaluators found many examples of teachers thinking ahead to avoid behavior problems, instructing behavior and giving attention to the behavior that was expected. Ninety percent of the observed interaction between teachers and students was good or superior.

Student-Centered Leadership Supports Positive School Climate

The four dimensions of the School Climate Scale previously discussed are positively correlated with student-centered leadership.

Table 6
Correlations between Student-Centered Principal and School Climate Variables

	Front Office Welcome and Initial Impression	Student Work On Display	Students Recognized by Office Staff	Attention to Student Behavior by Teachers
Correlation	0.72	0.41	0.53	0.54
Number of Principals	40	40	39	40
P-Value	<0.0001	0.0081	0.0004	0.0003

The correlations in Table 6 show a strong correlation between the student-centered principal variable and the front office welcome and initial impression. Of the four variables, the three strongest correlations address interpersonal relationships. The remaining variable deals with student displays. Principal’s leadership practices appear to frame other interactions in the school.

MAP Performance-Level Results

The previous section addressed what leadership acts contributed to a positive school climate. This section addresses the research question, “Is there a relationship between student-centered principals and student achievement?” The analyses that follow are based on 2004 MAP results released in September 2004. The analyses focus on MAP mathematics and communication arts, as they are the tests required for elementary-school students. This analysis presents results for mathematics and communication arts tests by observed principal leadership for all 40 schools accepted into the eMINTS FY03 program. The analysis begins with the percentage of mathematics students with student-centered principals.

Table 7
Fourth Grade Math Students by Student-Centered Principals

Teacher Status	Criteria	Frequency	Percent
eMINTS Students	Student-centered principal	679	48.2
Non-eMINTS Students	Student-centered principal	730	51.8
Total		1409	100.0

Table 7 indicates that in the FY03 cohort of eMINTS schools, about 48 percent of fourth grade eMINTS students and about 52 percent of non-eMINTS students were enrolled in schools led by student-centered principals.

Of the 679 eMINTS students in schools with student-centered principals, 676 were successfully matched with a MAP mathematics score as indicated by the Table 8.

Table 8
Percentage of 2004 MAP Mathematic Achievement Levels by Principal Leadership in eMINTS Classrooms

Math MAP Performance	Student-Centered Principal Leadership	Other Principal Leadership	All FY03 Schools
Step 1	.9	1.4	1.1
Progressing	13.5	22.5	16.9
Nearing Proficiency	44.8	42.7	44.0
Proficient	32.1	27.3	30.2
Advanced	8.7	6.2	7.7
Total	100.0	100.0	100.0
Number of Students	676	422	1098
P-Value	0.000		

Table 8 presents results for the 2004 MAP mathematics test for eMINTS students. The results for mathematics show a significant difference between those schools lead by a student-centered principal compared to other leadership styles. A higher percentage of eMINTS students with student-centered principals scored in the nearing proficiency, proficient and advanced categories. In a school lead by a student-centered principal, nearly 41 percent of eMINTS students scored in the proficient or advanced categories. In a school led by a principal with another leadership style besides student-centered, about 33 percent of eMINTS students scored in the proficient or advanced categories. This suggests that student-centered principals make a difference in MAP mathematics test scores for eMINTS students.

Of the 730 non-eMINTS students in schools with student-centered principals, 728 were successfully matched with a MAP mathematics score as indicated by the table below.

Table 9
Percentage of 2004 MAP Mathematic Achievement Levels by Principal Leadership in non-eMINTS Classrooms

Math MAP Performance	Student-Centered Principal Leadership	Other Principal Leadership	All FY03 Schools
Step 1	.4	2.4	1.3
Progressing	12.2	20.9	15.9
Nearing Proficiency	45.1	43.0	44.2
Proficient	35.7	28.9	32.9
Advanced	6.6	4.7	5.8
Total	100.0	100.0	100.0
Number of Students	728	532	1260
P-Value	0.000		

Table 9 presents similar results for the mathematics test in non-eMINTS classrooms and eMINTS classrooms in buildings lead by a student-centered principal. Non-eMINTS students with student-centered principals scored higher in the nearing proficiency, proficient and advanced categories. In a school lead by a student-centered principal, about 42 percent of non-eMINTS students scored in the proficient or advanced categories. In a school led by a principal with another leadership style besides student-centered, slightly more than 33 percent of non-eMINTS students scored in the proficient or advanced categories. This suggests that student-centered principals make a difference in MAP mathematics test scores for non-eMINTS students as well as eMINTS students.

The previous three tables included both eMINTS and non-eMINTS students. Tables 10a and 10b focus on eMINTS classrooms. The tables compare average student scores for fourth-grade MAP mathematics test by principal leadership. Discussion of the significance and strength of the relationships follow.

Table 10 a
Mean 2004 MAP Mathematics Results for eMINTS Students by Principal Leadership

	Mean	Number	Std. Deviation
eMINTS students with student-centered principal	646.55	675	34.132
eMINTS students without student-centered principal	639.52	419	34.320
Total	643.86	1094	34.359

Table 10 b
2004 MAP Mathematics Test of Significance

	t-test	Significance	Mean Difference
Total Map Score Equal variances assumed	-3.308	0.001	-7.036

The results of the 2004 MAP mathematics test indicate that a student-centered principal makes a difference in the scores of eMINTS students as shown by a mean MAP mathematics score higher for eMINTS students with a student-centered principal than for eMINTS students without a student-centered principal. The average score for students in eMINTS classrooms with student-centered principals was seven points higher than for students in eMINTS classrooms without a student-centered principal. This is a significant difference between means for eMINTS students by principal leadership.

The analysis of the MAP mathematics scores shows positive differences associated with student-centered principals. The next tables examine the communication arts test among eMINTS and non-eMINTS students by student-centered principals.

Table 11
Third Grade Communication Arts Students by Student-Centered Principals

Teacher Status	Criteria	Frequency	Percent
eMINTS Students	Student-centered principal	440	49.4
Non-eMINTS Students	Student-centered principal	451	50.6
Total		891	100.0

Table 11 indicates that in the FY03 cohort, about 49 percent of third grade eMINTS students and almost 51 percent of non-eMINTS students were enrolled in schools led by student-centered principals.

Of the 440 eMINTS students in schools with student-centered principals, 438 were successfully matched with a MAP communication arts score as indicated by the table below.

Table 12
Percentage of 2004 MAP Communication Arts Achievement Levels in eMINTS Classrooms

Communication Arts MAP Performance	Student-Centered Principal Leadership	Other Principal Leadership	All FY03 Schools
Step 1	5.3	3.5	4.4
Progressing	15.8	17.1	16.4
Nearing Proficiency	42.9	43.7	43.3
Proficient	34.7	34.4	34.6
Advanced	1.4	1.3	1.3
Total	100.0	100.0	100.0
Number of Students	438	398	836
P-Value	0.946		

Table 12 indicates that there is roughly a ninety-five percent probability that any difference in MAP scores is due to chance rather than principal leadership style. There is no significant difference in communication art scores for eMINTS students by principal leadership style.

Of the 451 non-eMINTS students in schools with student-centered principals, 448 were successfully matched with a MAP communication arts score as indicated by the table below.

Table 13
Percentage of 2004 MAP Communication Arts Achievement Levels in non-eMINTS Classrooms

Communication Arts MAP Performance	Student-Centered Principal Leadership	Other Principal Leadership	All FY03 Schools
Step 1	3.8	6.2	5.2
Progressing	20.8	22.3	21.7
Nearing Proficiency	40.2	41.7	41.1
Proficient	34.4	29.5	31.4
Advanced	.9	.4	.6
Total	100.0	100.0	100.0
Number of Students	448	696	1144
P-Value	0.031		

Table 13 presents results for the communication arts test in non-eMINTS Classrooms. Unlike the eMINTS students' scores, the non-eMINTS students' scores were affected by principal leadership style and the differences were statistically significant. Non-eMINTS students with student-centered principals scored higher in the proficient and advanced

categories. In a school lead by a student-centered principal, about 35 percent of non-eMINTS students scored in the proficient or advanced categories. In a school led by a principal with another leadership style besides student-centered, nearly 30 percent of non-eMINTS students scored in the proficient or advanced categories. This suggests that student-centered principals make a difference in MAP communication arts test scores for non-eMINTS students.

The previous three tables included both eMINTS and non-eMINTS students. The next tables, Tables 14a and 14b, focus on eMINTS classrooms. The following tables compare the average student score for the third-grade MAP communication arts test by principal leadership. Discussion of the significance and strength of the relationships follow.

Table 14a
Mean 2004 MAP Communication Arts Results for eMINTS Students by Principal Leadership

	Mean	Number	Std. Deviation
eMINTS students with student-centered principal	642.89	438	29.101
eMINTS students without student-centered principal	644.35	398	28.161
Total	643.59	836	28.649

Table 14 b
2004 MAP Communication Arts Test of Significance

	t-test	Significance	Mean Difference
Total Map Score Equal variances assumed	.733	0.464	1.454

There is no significant difference between means for communication arts for eMINTS students by principal leadership. The mean MAP communication arts score is slightly higher for students without a student-centered principal, but the difference is not significant statistically.

Conclusion

This research has established a relationship among student-principal interaction and school climate. Principals who exhibit student-centered leadership are an important determinant in creating a positive school climate. In this study, dimensions of school climate were measured in 40 elementary schools. This research suggests that principals leading student-centered schools maintained high visibility with the students. They were typically observed visiting students in the classroom, relating to students in other school settings and monitoring student achievement and progress. In the Title I eMINTS schools, student-centered principals correlated with student work being displayed in public areas, with teachers attending to and instructing student behavior in public areas and with students being positively recognized by office staff. The heartiest correlation

was the front office welcome and initial impression. Three of the four variables related to student-centered principals involved interpersonal interactions.

The analysis of MAP scores shows positive differences associated with student-centered principals. The differences on the mathematics tests were clearly significant and showed that students enrolled in eMINTS classrooms in a school lead by a student-centered principal outperformed other students. The differences on the communication arts tests were more understated. First, no differences existed between students enrolled in eMINTS classrooms. The statistical test for means was not significant for communication arts. However, the results suggest that non-eMINTS students led by a student-centered principal in an eMINTS school perform better on the communication arts test.

As seen by these results, eMINTS classrooms can be supported by a student-centered principal. This finding continues to support the important role of leadership found in previous eMINTS studies (see Leadership Orientation of FY00 eMINTS Principals at <http://www.emints.org/evaluation/reports/>).

Like eMINTS teacher instructional practices, there is variance in eMINTS school leadership. The FY03 year was the first year that eMINTS professional development expanded to eMINTS4Administrators. This training worked with principals to inform them of the eMINTS framework. The eMINTS4Administrators training could provide the necessary resources to help move the eMINTS initiative forward at the school level by articulating not only the teacher instructional practice and technology infrastructure, but the school climate components. Further research is required to work toward an eMINTS model of suitable school climate indicators.