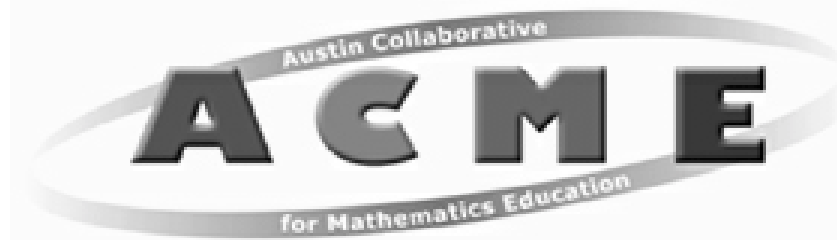


**Austin Collaborative for Mathematics Education
and Campus Support Initiative,**

2000-01 Evaluation



Austin Independent School District
Office of Program Evaluation
March 2002

***Austin Collaborative for Mathematics Education and
Campus Support Initiative, 2000-01 Evaluation***
AUSTIN INDEPENDENT SCHOOL DISTRICT

Executive Summary

The *Austin Collaborative for Mathematics Education (ACME)* is an initiative begun in August of 1997 to improve mathematics education in all elementary and middle school classrooms in Austin Independent School District (AISD) by providing teachers with long term, high quality professional development. This initiative, funded by the National Science Foundation (NSF) and the district, supports teachers as they implement the district's curriculum resources *Investigations in Number, Data, and Space* and *Connected Mathematics (CMP)*, which are aligned with the state standards for mathematics education in the Texas Essential Knowledge and Skills (TEKS) and the national standards set by the National Council of Teachers of Mathematics (NCTM). These standards focus on broadening the topics taught at all grade levels, developing children's mathematical thinking, and deepening children's conceptual understanding through concrete experiences. The standards contrast with traditional mathematics education which is characterized by rote memorization and computation practice.

Examination of student mathematics achievement on the Texas Assessment of Academic Skills (TAAS) demonstrated that teachers' strong implementation of standards-based mathematics instruction was linked to the highest levels of student performance (Batchelder, 2001). Longitudinal observations of mathematics instruction in AISD elementary and middle school classrooms revealed that the level of implementation of standards-based instruction of most teachers who participated in ACME professional development did not change in one or two years. Among the teachers whose instruction advanced in the level of implementation, more were not implementing when first observed than were implementing. On the basis of this research, it appears that many teachers need additional professional learning opportunities (e.g., mentoring, collaboration, coaching) to develop strong standards-based instruction.

In the 2000-01 school year, as part of the District Improvement Plan (DIP) the district launched a Campus Support Initiative and directed AISD mathematics staff to work with 18 district campuses, called Focus Schools, because student performance on the Texas Assessment of Academic Skills (TAAS) was near the cut off for a low performing designation by the Texas Education Agency (TEA). Because half of the AISD mathematics staff positions were funded by the NSF grant, their work on the Campus Support Initiative should support standards-based mathematics instruction. This evaluation addressed whether, and to what extent, the AISD Campus Support Initiative bolstered the implementation of standards-based mathematics on these campuses and across the district.

The research questions explored in this evaluation include the following:

- ## *How do the goals of the ACME project and the Campus Support Initiative relate?*
- ## *How are AISD mathematics staff, teachers, and instructional specialists involved in campus support? What types of campus support are being implemented in AISD?*

⌘ *What characteristics of campus support appear to be effective in supporting the implementation of inquiry-based mathematics instruction?*

⌘ *What additional types of campus support for the implementation of standards-based mathematics do principals need?*

On the basis of data collected from principal questionnaires, district staff interviews, and district documents, this evaluation reached the following three main conclusions:

1. A main finding is that the goals of the Campus Support Initiative and the ACME project were overlapping, but somewhat different. Both focused on school improvement, but the Campus Support Initiative focused on a small number of campuses with high needs for support in curriculum and instruction and the ACME project focused on rigorous mathematics education for all AISD students.

Recommendation: Coordinate funds to improve the implementation of standards-based mathematics instruction across the district. Title II funds, for example, could be used to develop professional learning communities among teachers and across campuses to support the implementation of standards-based mathematics instruction.

2. Half of the AISD mathematics staff understood that the goal of the Campus Support Initiative was to improve instruction and student achievement on the TAAS. However, there was confusion about the district's model for working with campus administrators and staff.

Recommendation: *Develop a model for how AISD mathematics staff should provide campus support to designated AISD campuses that is aligned with the teaching practices and philosophies of other district initiatives (e.g., Principles of Learning initiative). The model could emphasize campus learning communities and provide training to facilitate small groups.*

3. The types of campus support that principals considered to be the most effective in helping teachers implement standards-based mathematics in their classrooms require intensive involvement with teachers (i.e., modeling, observing, and discussing lessons; helping teachers with the instructional strategies of standards-based mathematics).

Recommendation: *The district should define the roles of Instructional Specialists as campus-based coaches, some of whom specialize in standards-based mathematics instruction and provide training in high quality coaching strategies (e.g., Content-Focused Coaching).*

PREFACE

This evaluation report looks at the relationship between two Austin Independent School District (AISD) initiatives: the Austin Collaborative for Mathematics Education (ACME) Project and the 2000-01 Campus Support Initiative. It focuses on support that takes place on campuses, which provides teachers opportunities to improve mathematics content knowledge and pedagogical skills. Campus support provided by AISD mathematics staff includes a variety of activities such as sharing information about materials; providing training in curriculum materials; cognitive coaching; examining student work; modeling, observing, and critically reflecting on lessons; analyzing assessment data; mentoring; or campus planning to attend to needs.

PURPOSE OF THE EVALUATION

Longitudinal observations of mathematics instruction in AISD elementary and middle school classrooms revealed that the level of implementation of standards-based instruction of most teachers who participated in ACME professional development did not change in one or two years (Batchelder, 2001). Among the teachers whose instruction advanced in the level of implementation, more were not implementing when first observed than were implementing. On the basis of this research, it appears that teachers needed additional professional learning opportunities such as mentoring, collaboration with colleagues, and coaching focused on content and pedagogy to develop strong standards-based instruction.

During the beginning years of the ACME project, these professional learning opportunities were limited. Teachers at eight elementary and three middle schools that piloted the ACME project participated in mentoring, modeling lessons, and collaborating with ACME staff in the first two years of the project. Later in the ACME project during the spring of 2001, some middle school teachers participated in ACME follow up professional development located on campuses that focused on implementation of standards-based mathematics and included planning, observing, and critically reflecting on lessons.

At the beginning of the 2000-01 school year, AISD mathematics staff, many of whose positions were funded by the NSF grant to support the implementation of standards-based mathematics instruction, began to working with designated district campuses as part of the Campus Support Initiative. This initiative focused on five campuses that received Texas Education Agency's (TEA) low-performing designation due to student academic performance on the Texas Assessment of Academic Skills (TAAS), although none of these campuses were low-performing in mathematics. In addition, 18 additional middle school and elementary campuses and three high schools, called Focus Schools, were chosen for the initiative because student academic performance on TAAS was near TEA's cut off for low performing designation. This evaluation examines the extent to which the AISD 2000-01 Campus Support Initiative supported the implementation of standards-based mathematics curriculum and instruction, a central component of the ACME project.

The research questions explored in this report include the following:

How do the goals of the ACME project and the Campus Support Initiative relate?

How are AISD mathematics staff, teachers, and instructional specialists involved in campus support? What types of campus support are being implemented in AISD?

What characteristics of campus support appear to be effective in supporting the implementation of inquiry-based mathematics instruction?

What additional types of campus support for the implementation of standards-based mathematics do principals need?

HOW TO USE THIS REPORT

This report is directed at a range of audiences. *AISD mathematics staff* will find information about campus support in the 2000-01 school year that could be used to improve their work on campuses. *Central office administrators* and *school board members* will glean information that should inform decisions about district practice and policy. *Campus administrators* and *teachers* will find information about improving implementation of standards-based mathematics on their campuses.

ACKNOWLEDGEMENTS

We greatly appreciate the time and information shared by the AISD Director of the Department of Curriculum and School Improvement, AISD mathematics curriculum staff, all AISD elementary and middle school principals, and several AISD teachers.

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OVERVIEW

ACME PROJECT

In August of 1997, AISD launched the Austin Collaborative for Mathematics Education (ACME) initiative to improve mathematics education in all elementary and middle school classrooms districtwide. This initiative, funded by the National Science Foundation (NSF) and the district, is a partnership of AISD, the Charles A. Dana Center, and the University of Texas at Austin. The initiative provides long-term, high quality professional development to build the instructional capacity of AISD mathematics teachers who teach about 55,000 of the district's 77,000 students. Because of high teacher turnover, ACME has worked with over 3000 mathematics teachers. The NSF grant consists of \$5 million distributed over five years through the spring of 2002.

ACME professional development supports teachers as they implement the district's curriculum of *Investigations in Number, Data, and Space* and *Connected Mathematics (CMP)*, which are aligned with the state standards for mathematics education in the Texas Essential Knowledge and Skills (TEKS) and the national standards set by the National Council of Teachers of Mathematics (NCTM). AISD also adopted *Math in My World/Mathematicas in Mi Mundo* (Spanish) and *Mathematics: Applications and Connections, Courses 1-3 /Mathematicas: Aplicaciones y Coneciones, Cursos 1-3* (Spanish) to supplement standards not addressed in *Investigations* and *CMP*. The state and national standards focus on broadening the topics taught at all grade levels, developing children's mathematical thinking, and deepening children's conceptual understanding through concrete experiences (Russell, 1998). The standards contrast with traditional mathematics education characterized by rote memorization and computation practice (Cohen & Ball, 1990).

ACME professional development is designed to help teachers deepen their knowledge of mathematics content and standards-based pedagogy as well as to grow as a community of learners. Every elementary and middle school mathematics teacher, including special education and bilingual teachers, is expected to participate in two years of summer institutes and follow-up days during the academic year. To promote districtwide change, the ACME project focuses on the development of professional school cultures, administrative and teacher leadership, and community involvement. High turnover of teachers and administrators has challenged the institutionalization of systemic change. Approximately 20% of AISD teachers and principals are new annually.

CAMPUS SUPPORT INITIATIVE

Each school year, AISD develops a District Improvement Plan (DIP) accompanied by action steps to fulfill goals delineated in the plan (AISD, 2000). The first goal of the 2000-01 DIP is "Students show improved achievement." The Campus Support Initiative, funded by AISD, is one of the key strategies in the 2000-01 DIP for improving student achievement. The strategy reads: "Provide coordinated support for campuses designated low-performing and for identified Focus Schools." In 2000, TEA designated schools as **low-performing** when fewer than 50% of all students or students in any of the disaggregated groups (i.e., African American,

Hispanic, White, and economically disadvantaged students) pass any TAAS subject test. TEA differentiates student performance by these groups to hold districts and campuses accountable for the achievement of all students on all campuses. In the 2000-01 school year, AISD curriculum staff defines **Focus Schools** as schools with between 50% and 60% of the students passing any TAAS subject test for any of the disaggregated groups.

This initiative is aimed at schools that needed the most help with curriculum and instruction. In spring of 2000, five schools were designated low-performing, but none were low performing in mathematics. In the fall of 2000, 21 schools were identified as Focus Schools; this report addresses the 18 elementary and middle Focus Schools. The initiative focuses on guiding instructional improvement by examining student achievement on practice TAAS, monitoring school progress, and modifying the support plan accordingly. The initiative also involves modeling lessons, coaching, and providing professional development. Curriculum staff are organized into support teams led by the five AISD area superintendents. The support teams focus on school improvement, curriculum design, and instructional change, and are directed to spend three days per week on campuses. In addition to work with Focus Schools, AISD mathematics staff supported other campuses that needed help.

ACME AND CAMPUS SUPPORT INITIATIVE FUNDING

All AISD mathematics staff and administrators provided ACME professional development as well as campus support during the 2000-01 school year. These initiatives also coordinated funding sources. All AISD elementary mathematics staff were funded through the NSF grant. AISD secondary mathematics staff were funded through Titles I, II, and VI grants, the NSF grant, and local monies. Mathematics administrators were paid through NSF, local, and Title I funds.

RESULTS

ACME AND CAMPUS SUPPORT INITIATIVE GOALS

How do the goals of the ACME project and the Campus Support Initiative relate?

The goals of these two initiatives were established at different times by different AISD administrations. Information for this comparison derived from analysis of district documents and emailed questions about the district's campus support goals completed by the AISD Director of the Department of Curriculum and School Improvement. The original ACME grant proposal specified three goals:

- €# To ensure that all AISD students actively engage in a rigorous mathematics education in preparation for active citizenship,
- €# To develop school cultures that promote continual improvement in mathematics teaching and learning, and
- €# To ensure district resources are aligned with each other and the state standards, TEKS.

The AISD Director of the Department of Curriculum and School Improvement stated that the goal for campus support for the 2000-01 school year was to focus on school improvement, curriculum design, and support to campuses that needed help the most. As stated, the Campus Support Initiative was directed at low-performing schools and Focus Schools. The main goal was to reduce the number of AISD schools that received low-performing designation in the 2000-01 school year.

A comparison of the goals of the ACME project and the Campus Support Initiative revealed similarities and differences. The goals were similar in that school improvement was central to both, but the language differed. Whereas the goals of the ACME project were to develop school cultures in order to improve teaching and learning, the Campus Support Initiative focused on helping campuses with curriculum design, instruction, and collaborative planning. The goals of the initiatives were also similar in placing alignment with the TEKS at the forefront. The ACME grant proposed aligning resources with the TEKS. Although the Campus Support Initiative did not directly identify the TEKS as a strategy for helping schools improve, another DIP strategy to improve student achievement included providing professional development in the TEKS to curriculum staff and other district leaders (i.e., the TEKS for Leaders initiative). Professional development for district curriculum staff focused on the TEKS should impact discussion of the TEKS through campus support.

Key differences in the initiatives were in their target audiences. While the ACME project centered on mathematics, the Campus Support Initiative was broader and included other subjects, especially those in which a large proportion of students did not pass and those in grades that will be targeted by the Texas Assessment of Knowledge and Skills (TAKS). Differences also emerged in the target population of the two initiatives. Whereas the ACME project was broadly directed at all elementary and middle school classrooms, the Campus Support Initiative targeted

only campuses that were near or at low-performing levels due to student TAAS passing rates across all grade levels.

PERCEPTIONS OF CAMPUS SUPPORT INITIATIVE GOALS

Past evaluations of the ACME project revealed that AISD mathematics staff generally had a shared vision of the ACME project goals (Batchelder, 2001; Batchelder, 1999). Because the Campus Support Initiative was new in the 2000-01 school year, this evaluation examined mathematics staff member's perceptions of that initiative's goals.

Interviews with AISD Mathematics Staff

All AISD mathematics staff and administrators were interviewed in the Spring of 2001 for this evaluation. The interviews included questions about the district's goals for campus support as well as other topics, including models of campus support, descriptions of their work on campuses, and influences on the implementation of standards-based mathematics curriculum and instruction.

AISD Mathematics Staff Perceptions of Goals

When AISD mathematics staff and administrators were asked what they saw as the district's goals for campus support in the 2000-01 school year, more than half of the staff echoed the goals outlined by the AISD Director of the Department of Curriculum and School Improvement and the DIP. The AISD mathematics staff believed that the goals of the Campus Support Initiative were to improve instruction and student achievement on TAAS. Several staff members specified the emphasis placed on low-performing schools and Focus Schools. One staff member stated that implementing the TEKS was a goal. However, some staff expressed uncertainty about what the district's goals for campus support were. These staff stated that the goals were "undefined" or not yet decided.

Some AISD mathematics staff members reported that the district's goals for campus support involved implementing the Principles of Learning, a districtwide initiative in partnership with the Institute for Learning at the University of Pittsburgh, which aims to improve the quality of teaching and learning as well as instructional leadership in AISD. These AISD mathematics staff members said that part of campus support was their participating in Learning Walks¹, helping teachers and students develop criteria charts for mathematics instruction, and clarifying the practice of the targeted Principles² (i.e., Clear Expectations, Accountable Talk, and Academic Rigor in a Thinking Curriculum).

Some staff members added their own goals for campus support. One staff member drew on an ACME goal: "To create a school culture where teachers come together and develop a rigorous, challenging math program." Another staff member agreed with the district's focus on TEKS, but emphasized standards-based mathematics over the Principle of Clear Expectations. Still another stated that campus support should be equitable.

¹ Learning Walks are classroom visits in which district and campus staff and others observe and ask questions to promote critical reflection about teachers' instruction and student learning.

² See <http://www.insitituteforlearning.org> for definitions and examples.

DESCRIPTION OF CAMPUS SUPPORT

How are AISD mathematics staff, teachers, and instructional specialists involved in campus support?

What types of campus support are being implemented in AISD?

This description of campus support in the 2000-01 school year derives from two data sources: principal questionnaires and the interviews with AISD mathematics staff discussed previously.

Principal Questionnaires

All 90 AISD elementary and middle schools principals completed and returned questionnaires concerning campus support in the spring of 2001. Items for the questionnaire were constructed from information compiled by AISD mathematics staff members about campus support that was provided to several schools in the first three years of the ACME project. The questionnaire asked principals to report on the frequency, initiator(s), participant(s), and kinds of support that mathematics staff provided as well as rating its effectiveness. In addition, principals reported on other types of support needed.

CAMPUS SUPPORT ACROSS THE DISTRICT

Seventy of the 90 AISD elementary and middle school principals (78%) reported that AISD central office mathematics staff had visited their campus in the 2000-01 school year. These responses described campus support across the district and were not limited to low-performing schools or Focus Schools. To determine whether there were differences in levels of campus support across the district, the responses were statistically tested comparing by areas, by elementary and middle schools, and by schools at which 56% or more of the students were low income (i.e., receiving free and reduced lunch) and schools with fewer low income students. A few significant differences emerged for schools with 56% or more low income students and for elementary and middle schools, which are reported in the following section.³

Frequency of Campus Support

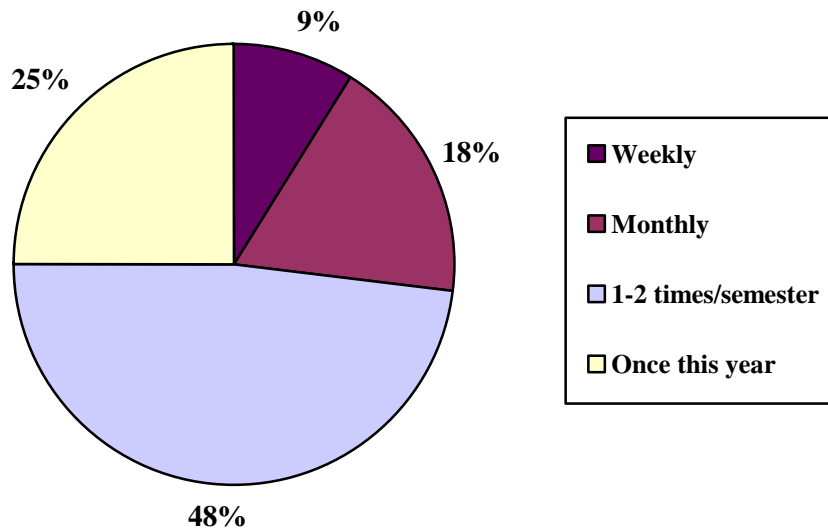
Figure 1 presents the percentages of campuses at which principals reported receiving support from AISD mathematics staff by the frequency of visits. Nearly three-fourths of the campuses received infrequent visits from AISD mathematics staff (i.e., one to two times per semester or less). The remaining quarter of the campuses that received support were visited monthly or weekly. All of the campuses that were visited weekly had 56% or more low income students.

The infrequent visits reported by most principals concurred with the accounts of AISD mathematics staff members. AISD mathematics staff members reported working with a small number of campuses; those who were assigned to an area listed three to seven campuses where

³ The statistical tests for differences by area were either not valid because of small frequencies or not significant.

they provided support. Each AISD mathematics staff member reported working intensely with two to four campuses, which resulted in less than one-fourth of all AISD campuses receiving frequent support.

Figure 1. Percentage of Campuses Receiving Support by Frequency of Visits



Initiator of Campus Support

On most campuses, principals (67%) reportedly initiated the visits from AISD mathematics staff, especially at schools that had 56% or more low income students (34 of the 47 principals, 72%, who reportedly initiated visits led schools that had 56% or more low income students). At a majority of campuses, AISD mathematics staff (51%) also initiated visits. At 40% of the campuses that principals reported receiving visits, central office administrators initiated the visits.

Participants in Campus Support

Typically, principals reported that AISD mathematics staff who provided campus support worked with teachers (83% of the campuses) and/or principals (80% of the campuses). Nearly half (49%) of the schools that received campus support involved Instructional Specialists⁴. All but one of the schools at which Instructional Specialists participated in campus support had 56% or more low income students. At 29% of the campuses that received support, principals reported that AISD mathematics staff attended team meetings.

During the open-ended interviews, AISD mathematics staff listed other participants in campus support. Some AISD mathematics staff members reported that they worked with assistant principals, counselors, special education teachers, mathematics chairs in middle schools

⁴ Instructional Specialists are teachers on special assignment whose role is to improve the quality of teaching on their campuses; these positions are funded by the local grant Account for Learning (AFL).

and high schools, reading and language arts specialists, and parents. Another staff member reported talking to parents about how to improve children's mathematics skills and knowledge at home.

Some AISD mathematics staff members noted that the structure of campus support varied by campus. On some campuses, the principal acted as a gatekeeper and directed AISD mathematics staff members to specific teachers who were new to teaching, who were new to standard-based mathematics instruction, or whose students were struggling with mathematics. At other campuses, AISD mathematics staff members worked directly with teachers and then reported back to the principal.

Types of Campus Support

Table 1 presents the 11 most frequent of 14 types of campus support in mathematics that principals selected on the questionnaire and the percentage of campuses at which principals reported receiving each type. (Principals could select more than one category.) Principal ratings of the effectiveness of the types of campus support will be discussed in a following section.

More than two-thirds of the principals reported that "Sharing information about materials" and "Providing ACME training schedules" as types of campus support they received from AISD mathematics staff. The least common type of campus support reported by only 7% of the principals that received visits was "Designing a Campus Improvement Plan (CIP)" (not presented in Table 1 because principals rarely selected it.)

AISD mathematics staff reported providing many different types of campus support, some of which were included on the principal questionnaire. Modeling lessons was one of the most common types of campus support that AISD mathematics staff reported. Although most AISD mathematics staff members modeled lessons and discussed them during teachers' planning time, some staff preferred to observe teachers to assess their instructional style and provide feedback. Several AISD mathematics staff members reported initiating critical reflection with teachers on instructional practices, but stated that these opportunities and teacher readiness for conversations were limited.

Table 1. Principal Reports of the Percentage of the Types of Campus Support Provided by AISD Mathematics Staff and Principal Ratings of the Most or Least Effective

Type of Campus Support Provided by AISD Mathematics Staff	Percentage of Campuses Receiving Support	Principal Rating of Most or Least Effective
Sharing information about materials	82	Effective
Providing ACME training schedules¹	72	
Sharing the vision of the AISD mathematics program*	60	Ineffective
Helping teachers with the instructional strategies of standards-based mathematics (e.g., questioning techniques, managing cooperative groups, and communication)	54	Effective
Suggesting ways to better support teachers as they implement standards-based mathematics	54	
Providing ACME training for teachers*	53	Effective
Modeling, observing, and/or discussing lessons taught to students*	43	Effective
Developing approaches to student assessment aligned with standards-based mathematics*	38	
Meeting the needs of diverse students (e.g., bilingual, special education, and GT)	38	
Analyzing TAAS results to inform instruction*	37	
Organizing timelines, pacing, and day-to-day management of mathematics curriculum	35	

¹ Statistical tests indicated that these types of campus support were reported by a higher proportion of middle school principals who received support than the proportion of elementary principals.

Another common type of campus support that AISD mathematics staff reported involved gathering or sharing information about materials. AISD mathematics staff worked with assistant principals at new schools and existing schools to get *Investigations*, *CMP*, and textbooks ordered because materials either had not yet arrived or there were not enough materials for all mathematics teachers on campus. One AISD mathematics staff member reported gathering materials for tutoring students and for focusing on content as well as translating materials into Spanish. Another AISD mathematics staff member reportedly spent time helping new and veteran teachers become familiar with the district curriculum materials.

A major thrust of the Campus Support Initiative as outlined in the District Improvement Plan (DIP) included analyzing student TAAS results to focus changes in instruction in order to improve student achievement. A third common type of campus support that AISD mathematics staff reported was helping teachers analyze student TAAS data and the results of benchmark tests that were given during the year to inform decisions about instruction. “Analyzing TAAS results to inform instruction” was also reported by 37% of the principals who received campus support (see Table 1).

AISD mathematics staff mentioned providing several additional types of campus support. AISD mathematics staff reportedly recruited new and veteran teachers to attend ACME professional development. Several AISD mathematics staff members made presentations at campus faculty meetings or provided professional development specific to campus needs. Other AISD mathematics staff members discussed the district curriculum and helped campus staff understand the alignment between the curriculum, the TEKS, and the TAAS. Some AISD mathematics staff members stated that they helped teachers with instructional strategies: One staff member said that she tried to get teachers “to stop doing all the talking and let the students do the talking so that you know what [the students] understand,” and another helped teachers “ask questions to get students on track.” One AISD mathematics staff member reported explaining to teachers “what’s going on in the district that teachers don’t understand.”

Models of Campus Support

Some AISD mathematics staff members described different models for campus support that were implemented during the 2000-01 school year. Interviews revealed that models of campus support varied by area, by campus, and by teacher. AISD mathematics staff pulled from other initiatives, such as the Principles of Learning, which complements standards-based mathematics. In the 2000-01 school year, the Principles of Learning initiative was in its first year of implementation and beginning to influence the language, thinking, and actions of AISD curriculum staff and other district leaders. For example, district staff were talking about developing professional learning communities on campuses. Some AISD mathematics staff members drew on what they had learned from the Principles of Learning Initiative and took teachers on Learning Walks to observe the practices of others who were implementing standards-based instruction. One AISD mathematics staff member reported that these “teachers appreciated the Learning Walks, they found benefits in observing others in their vertical team, they got to make connections.” One AISD mathematics staff member implemented a coaching model that she learned about at the NCTM conference in which staff and teachers hold a pre-conference,

model a lesson, and hold a post-conference, although she did not often find time for the post-conference.

AISD mathematics staff have introduced similar models for the activities of professional learning communities on campuses as part of ACME professional development. For example, in the spring of 2001 the AISD secondary mathematics team provided ACME professional development focused on implementation of standards-based mathematics and included planning, observing, and critically reflecting on student work and the observed instruction. This model derived from the Japanese professional learning communities discussed in *The Teaching Gap* by Stigler and Hiebert (1999).

Another model for campus support that AISD mathematics staff implemented at one AISD school the previous year and at two schools in the 2000-01 school year built on the development of learning communities, the “Collaborative Assessment Model” from the Harvard Project Zero (Lewis, 1998). The model involved the AISD mathematics staff member’s meeting with a grade level team to plan a lesson. The principal got substitutes for the teachers so that all team members could observe the lesson being taught. Then the team met afterschool to discuss the observed lesson and the student understanding gained by examining student work.

What characteristics of campus support appear to be effective in supporting the implementation of inquiry-based mathematics instruction?

EFFECTIVENESS OF CAMPUS SUPPORT

On the questionnaire, principals indicated which of 14 types of campus support they considered as the most and the least effective in helping campus teachers implement *Investigations* and *CMP* in their classrooms. The four types of campus support that 15% or more of the principals selected as the *most* effective are identified in Table 1. (Principals selected only one category; the percentage of principals who selected each of the 14 types ranged from 0% to 27% with a mode of 3%.) Over one-fourth of the principals (27%) who received support indicated that “Helping teachers with the instructional strategies of standards-based mathematics” and 18% of the principals who received support indicated that “Providing ACME professional development” and “Modeling, observing, and/or discussing lessons” as the *most* effective ways to help teachers improve their abilities to implement standard-based mathematics instructional materials. To carry out all of these types of campus support, AISD mathematics staff interact directly with teachers and focus on instructional strategies.

Fifteen percent or more of the principals who received support considered three types of support as the *least* effective ways to help teachers improve their abilities to implement standard-based mathematics instructional materials. (The percentage of principals who selected each of the 14 types ranged from 0% to 23% with a mode of 4%.) Twenty-three percent of the principals whose campuses received support indicated that “Sharing the vision of the AISD mathematics program” was not an effective type of campus support (see Table 1). Fifteen percent of the principals whose campuses received support rated two additional types of campus support as ineffective in improving the implementation of standards-based mathematics: “Examining teacher attendance at ACME training” and “Designing a Campus Improvement Plan (CIP).” (These two

types of campus support were not included in Table 1 because less than one-third of the principals indicated that the types occurred.)

CAMPUS SUPPORT AND STANDARDS-BASED MATHEMATICS IMPLEMENTATION

When AISD mathematics staff were asked how the campus support that they provided influenced the implementation of standards-based mathematics, two main effects emerged. One influence reported was monitoring implementation. One AISD mathematics staff member stated, “The fact that I’m there influences what they use.” Another AISD mathematics staff member said, “They’re not able to switch out into other materials because I have a presence there.” A second influence that AISD mathematics staff reported was providing information to campus leaders and staff about standards-based mathematics and changing the way principals and teachers think about standards, *Investigations*, and *CMP*. One AISD mathematics staff member reported that conversations helped one principal see that “There’s a lot of good math in *CMP*,” and as a result the principal planned to give an “edict next year that [the campus] will do *CMP* in all grade levels.” Another AISD mathematics staff member reported that she spent time informing campus staff about what the district’s initiatives were.

LIMITATIONS ON THE EFFECTIVENESS OF CAMPUS SUPPORT

In interviews, AISD mathematics staff reported that insufficient time and human resources limited the effectiveness of campus support. AISD mathematics staff had time to visit only a few campuses in their assigned area. One AISD mathematics staff member reported, “I still haven’t done enough, I’ve been to three or four campuses and I’m supposed to serve all thirteen [elementary schools in the area]; “for cognitive coaching, you have to have days.” Many AISD mathematics staff members echoed the feeling of being “spread too thin” in their jobs. One AISD mathematics staff member reported, “There’s no time to work with a need or crisis, we identify problems but we’re too scheduled to work on them, we’re spread too thin.” Another AISD mathematics staff member stated, “We need 3 days on campuses and a week without interruptions; otherwise we’re just putting band-aids on, we’re not making a difference.” Another AISD mathematics staff member reported working with teachers to reflect on their practice, but stated, “The problem is, it’s not a regular thing, things come up on my side and [the campus’] side.”

What additional types of campus support for the implementation of standards-based mathematics do principals need?

At the end of the questionnaire, principals were asked to provide open-ended responses about what additional types of campus support for the implementation of standards-based mathematics they needed. Many principals iterated the types of campus support listed in Table 1 (especially “Modeling, observing, and or discussing lessons” and “Helping teachers with instructional strategies”). However, many principals requested additional campus support not on the questionnaire. The following list includes the additional types of campus support requested by several principals:

- ≠# Introduction to standards-based mathematics instruction for teachers hired mid-year;

€# Professional development on the TEKS and alignment with TAAS (explicit links between TEKS and TAAS are being developed in the Spring of 2002 under the new Director of Curriculum);

€# Frequent visits from AISD mathematics staff and availability to all campuses; and

€# Stipends for teacher collaboration and peer coaching during teachers' time off.

Unique requests for campus support were:

€# Assessments aligned with the ACME initiative;

€# Time to visit other campuses and grade levels;

€# Help to plan family and community events; and

€# Videos of model lessons.

Additional types of campus support that principals requested were already available:

ACME professional development on campuses, professional development not during school hours, ACME professional development for new teachers who missed the summer institutes, discussion of AISD's mathematics program at principals' meetings (occurred at the secondary level); and timelines for units by grade levels.

CONCLUSIONS AND RECOMMENDATIONS

From this evaluation, the following three main conclusions were drawn:

1. A main finding is that the goals of the Campus Support Initiative and the ACME project were overlapping, but somewhat different. Both focused on school improvement, but the target audiences differed. The Campus Support Initiative focused on a small number of campuses with high needs for support in curriculum and instruction and the ACME project focused on rigorous mathematics education for all AISD students.

It is recommended that district and campus staff coordinate funds to improve the implementation of standards-based mathematics across the district. Strong implementation of standards-based mathematics instruction was associated with student problem-solving skills on the TAAS (Batchelder, 2001). These skills will be necessary for student achievement on the future state assessment, the Texas Assessment of Knowledge and Skills (TAKS).

Title II funds, for example, could be used to support the implementation of standards-based mathematics in innovative ways. Traditionally, campuses have used these funds to send teachers professional development workshops and conferences locally and nationally, many of which support standards-based mathematics. Additionally, Title II funds can be used to support partnerships between schools, agencies, and institutions as well as to develop professional networks in which teachers share information on advances in content and pedagogy. Title II funds could be used to develop the professional learning communities among teachers and across campuses envisioned by the POL initiative and the ACME project. In the fall of 2001, a few campuses began spending Title II funds to support Learning Walks to other campuses. Visitation across campuses, which AISD mathematics staff indicated positively impacted teachers' understanding of standards-based mathematics instruction, could allow teachers who have moderate skills in standards-based mathematics instruction to be mentored by teachers with strong skills. (See Stein, D'Amico, & Israel, 1999, for information about visitation across campuses.)

2. Half of the AISD mathematics staff understood that the goal of the Campus Support Initiative was to improve instruction and student achievement on the TAAS. However, there was confusion about the district's model for working with campus administrators and staff. AISD mathematics staff appeared to pull from other district initiatives, such as the Principles of Learning Initiative, to provide high quality, professional learning opportunities for teachers.

It is recommended that district staff in collaboration with IFL and campus staff develop a model for how AISD mathematics staff should provide campus support to priority schools such as focus schools as well as to other AISD campuses. This model should align with the teaching strategies and philosophies of other key district initiatives, such as the Principles of Learning initiative. Because AISD mathematics staff cannot work one-on-one with all teachers in the district, the model could emphasize the development of small learning communities on campuses and provide district and campus staff with training to facilitate small groups.

3. The types of campus support that principals considered to be the most effective in helping teachers implement standards-based mathematics in their classrooms require intensive involvement with teachers. In particular, "Modeling, observing, and discussing lessons" as well

as “Helping teachers with the instructional strategies of standards-based mathematics” took place at about half of the K-8 campuses at which principals reported receiving visits. Research indicates that high quality collaboration that improves instruction involves team teaching, planning, observation, action research, sustained peer coaching, and mentoring, and so on (Little, 1990).

It is recommended that the district define and structure the roles of Instructional Specialists funded by the Account for Learning Grant as campus-based coaches. The district and campuses need to ensure that the Instructional Specialists who specialize in mathematics education have the content knowledge and pedagogical skills necessary to implement standards-based mathematics in classrooms and that they receive professional development in quality coaching strategies, such as Content-Focused Coaching⁵ developed by Institute for Learning. Ultimately, the district and campuses could assign Instructional Specialists to all AISD campuses or share them across sites.

⁵ See <http://www.insitituteforlearning.org> for more information.

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Publication Number 00.13

March 2002