

EVALUATION REPORT
Math and Science Academy

Year 3 Final Report
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MATH AND SCIENCE ACADEMY
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This evaluation report summarizes Year 3 of the Math and Science Academy (MSA), an educational initiative of the Northern New Mexico Council on Excellence in Education (NNMCEE). The report begins with an overview of the project, and then proceeds to describe the research questions and methods used to carry out the evaluation. Findings from the Year 3 evaluation are presented next; the report concludes with recommendations and refinements for future years of MSA.

MSA Project Goals and Objectives

In 1999, the Math and Science Academy was developed collaboratively by the Northern New Mexico Council on Excellence in Education (NNMCEE) with support from local school districts Chama, Española and Mora the Northern Network for Rural Education, the University of California and the Department of Energy's Los Alamos National Laboratory (LANL). The overall goal of the project is to improve the quality of education for the students of Northern New Mexico and to simultaneously strengthen math and science education at the middle school level. Based on a model of school reform that emphasizes professional collaboration and research-based approaches to teaching and learning, the project has established middle school cadres of teachers dedicated to providing students with exemplary learning opportunities. The Math and Science Academy addresses multiple purposes, including providing teachers with quality on-going professional development to increase content and pedagogical knowledge; stimulating teachers to better prepare students for high school; providing tools and conceptual structures for content area instruction to be integrated into classroom teaching and learning practices; and offering students the opportunity to participate in high quality science, math, social studies, and language arts learning experiences.

Years 1-3 of the project have focused primarily on middle school teachers and students as part of an effort to encourage middle school students to stay in school, to bolster sagging academic performance, and to support middle school teachers' efforts to provide their students with the knowledge and skills to participate in challenging high school classes.

Project Overview

The goals of the project are ambitious and far reaching—below average student performance, insufficient teacher preparation and low scores on competency surveys reveal a continuing need for improving student achievement and strengthening teacher preparation in northern New Mexico. Additionally, as a partner in the project, the National Laboratory in Los Alamos has a vested interest in providing employment opportunities to the citizens of Northern New Mexico through the cultivation and support of a well-prepared, well-educated workforce.

The summer of 2000 marked the beginning of the Math and Science Academy. Teachers and mentors attended a 2-week Summer Institute where they discussed ideas and developed curricula and instructional methods, and planned for the 2000-2001 academic year. The project was led by two mentor teachers selected for the program based on their experience developing curriculum, professional development expertise, knowledge of standards and reform initiative, proficiency in the use of technology in education, and experience working with middle school students.

The first year of MSA, referred to as the development year (2000-2001 school year), focused on three middle schools located in northern New Mexico. Schools were selected for project participation based on a competitive application process. At each site a team of teachers (four teachers from each site, 12 total teachers) worked with the two mentors during the school year to develop instructional strategies and implement curricula to support and strengthen student learning and achievement in math, science, social studies, and language arts. Throughout the school year, mentors and teachers collaborated with each other, participated in on-going professional development sessions, and worked to develop curricula and teaching methods to support on-going efforts to improve the quality of math, science, language arts, and social studies education at MSA schools. Project members also met with school administrators and community members to inform them about the project and its' goals.

During Year 2 of MSA (the 2001-2002 school year), the project expanded to 23 teachers (from the original 12 members), and included one team of 8th grade teachers. Additionally, three student teachers attended the MSA Summer Institute; two of those teachers participated in the project during the spring of 2002 during their student teaching. Content areas represented in the project included language arts, math, science, and social studies. Project goals for Year 2 of MSA focused on further refining program objectives, and increasing and strengthening the level and quality of MSA implementation at each of the sites. Of particular importance was the implementation of a practice known as “cognitive coaching”, a research-based approach to mentoring and professional development that guided mentors in their work and interactions with teachers and administrators (Costa & Garmston, 1994).

Year 3 of the MSA has focused on continued refinement of the tools and structures for quality teaching and learning, and on providing on-going support for teacher collaboration and professional development. Twenty-seven teachers participated in Year 3 of MSA, including one (continuing) cadre of 8th grade teachers. The project was expanded at one of the middle schools to include an ELL teacher, and other content area teachers. Not all teams at each site had full participation from all content areas: at some sites, teams functioned with two or three MSA members, due to previous personal commitments and challenges. During the third year of the project, there were nine 3rd Year MSA teachers, eight 2nd year, and six 1st Year MSA teachers, including two teachers who were new to the profession as well as to MSA. Teachers met weekly to discuss student work and progress, worked with the mentor teachers to reflect on their teaching effectiveness and instructional strategies, responded electronically to research articles on instruction and assessment, developed professional portfolios, and worked with administrators to communicate the goals and objectives of MSA to parents and their communities. The cognitive coaching model and accompanying protocol were further refined to better reflect project goals during Year 3 of MSA. The model continued to play an important role in mentors’ work and interactions with teachers and administrators.

Evaluation and Design Issues

Years 1 and 2 of the UCLA/CRESST evaluation of the MSA project were designed to describe how the program was implemented, to assess program effects and to generate recommendations for the improvement and enhancement of the project. Year 3 of MSA evaluation paralleled many of the same research questions as

Years 1 and 2 of the project, and included a number of different features designed to further strengthen the project and gauge project impact. The following research issues were examined during Year 3 of the project:

- How is the MSA program evolving?
- What is the effect of MSA on teaching and learning?
- How can the program be refined and sustained?

Additionally, Year 3 of the evaluation focused on establishing a database of student information to monitor long-term effects of the project. This database was structured to collect information on student achievement data from multiple measures, student absences, participation in special programs, awards received, drop out rates, and grades. Collection of this baseline information is critical to better understand the long-term effects of the project due to the scarcity of measures sensitive to the kinds of enriched learning opportunities students are afforded in MSA classrooms, and the absence of measures sensitive to increases in conceptual knowledge and understanding the project promotes.

The evaluation employed a multi-method approach to understand and assess program implementation and effects. Surveys, interviews, focus groups, program documents, and observation of program activities were used as information sources on program implementation and impact. We continued to use a formative approach to our research, that is, by systematically conferring with project participants throughout the year, and by providing important information to project members regarding project successes and challenges, revisions and modifications were made throughout the school year to maximize project impact.

Method

Multiple sources of information were used to provide evidence of project implementation and impact. Table 1 displays the various data sources used during Year 3 of MSA.

Table 1

MSA Year 3: Data Sources

| Student Data | Classroom Assignments | Surveys | Observations | Interviews |
|---|--|--|--|---|
| <ul style="list-style-type: none"> • Standardized achievement scores (CTB/Terra Nova) - language arts - reading - math - science - social studies | <ul style="list-style-type: none"> • Science lessons • Math lessons • Language arts lessons • Social Studies lessons | <ul style="list-style-type: none"> • Teachers | <ul style="list-style-type: none"> • Classrooms • Professional development sessions • Summer Institute (2002) | <ul style="list-style-type: none"> • Teachers • Principals • Administrators • Project mentors • Focus groups |

Instruments. Student achievement data were collected from each of the sites on the CTB/Terra Nova, standardized achievement test published by McGraw Hill. Longitudinal data were analyzed for MSA student performance over the past three years for the 8th grade cohort. Classroom observations gathered data on project goals, including grouping patterns and practices, assessment strategies and teacher-student interactions. Post-instructional interviews with teachers included specific questions about the lessons observed and general questions about the way/s in which MSA objectives were evident or implemented in classrooms. Classroom assignments were collected from teachers (and mentors) during the December site visit, and during the April/May site visit when classroom observations were completed. Assignments represented typical work from all content areas.

Surveys were administered at the conclusion of the school year during a 3-day MSA culmination session. The teacher survey queried teachers on the way/s in which participation in the Math and Science Academy influenced teachers' instructional practices, their knowledge and understanding of standards-based instruction, use and knowledge of technology, willingness to use a variety of instructional settings, assessment practices, and ratings of program effectiveness. The survey asked both open-ended questions and questions that involved a rating scale. Another source of data for the Year 3 evaluation was teacher responses to weekly electronic messages that were closely linked to project goals and objectives.

Principal interviews included questions about project successes and barriers and general impressions regarding MSA impact on teachers and students. Copies of

all instruments developed and used in the evaluation can be found in the Appendices.

Project Findings: Year 3

Findings from Year 3 of MSA are presented in the following sections. Demographic information on teacher participants is presented first, followed by general demographic info on students and the schools. Results in the second section are organized around the research questions for Year 3 of MSA. We conclude the report with more general information on project implementation, impact and recommendations for future years of MSA.

Participants

MSA Teachers. A total of 22 teachers were full participants (defined as teachers who participated in the majority of MSA requirements) in Year 3 of MSA. Teachers were from three districts (four middle schools: two schools are 6th – 8th grade, one school is 7th grade only, and one school is 8th grade only) in northern New Mexico. Survey data are available for 21 of 22 2002-2003 MSA teachers: data is absent from one teacher who left the project at the conclusion of Year 3. Of the 21 teachers surveyed, MSA teachers had an average of 11.5 years of teaching experience (ranging from 1 to 30 years) and held multiple types of credentials (e.g., bilingual, single subject, Language Arts, Special Education, and Early Childhood Education). Two MSA teachers were first year teachers. The majority of MSA teachers held Bachelor's degrees with teaching credentials and units beyond those degrees, four teachers held Master's degrees with additional course units of study, and one MSA teacher holds a doctorate.

A number of teachers reported teaching outside their content area specialization. As previously noted in other reports, it is an on-going challenge for teachers to instruct in content areas for which they have little formal training or content knowledge. At one MSA school, teachers taught three different subjects at three different grade levels. Most teachers (over 50%) reported English as the primary language of instruction, with another 15% reporting using English and Spanish for instruction. Code switching, at culturally appropriate times, was observed in MSA classrooms. When necessary, MSA teachers often provided additional explanations or instructions to students in Spanish who had limited knowledge of English. Eight of the 21 surveyed MSA teachers had previous

experience with reform initiatives similar to MSA (including Peace Corps, Math and Science Reform, and the University of New Mexico Math Academy). Table 2 displays demographic data for the 21 Year 3 MSA teachers who completed surveys at the conclusion of the 2002-2003 school year.

Table 2
Year 3 MSA Teacher Demographic Information

| Variable | Descriptor | N=21 |
|--|---|------------|
| Sex | Male: | 7 |
| | Female: | 14 |
| Ethnicity | White: | 6 |
| | Hispanic/Latino/Spanish American: | 14 |
| | Native American: | 1 |
| | Other: | 0 |
| Highest Degree Received | Bachelor's Degree: | 6 |
| | Bachelor's + Credential + Units | 8 |
| | Beyond: | 2 |
| | Master's + Units Beyond: | 4 |
| | Doctorate: | 1 |
| Teaching Credential* | General Elementary: | 10 |
| | General Secondary: | 8 |
| | Special Emergency: | 0 |
| | Multiple Subject: | 4 |
| | Single Subject: | 7 |
| | Bilingual: | 2 |
| | Other: (Lang. Arts, Special Ed, Early Childhood): | 2 |
| Years of Experience | Average Number: | 11.5 years |
| | Range of Years Teaching: | 1 - 30 |
| Previous participation in projects like MSA | Yes | 8 |
| Year 3 MSA Teacher Experience (23 total participants) | 1 st Year MSA Teachers | 6 |
| | 2 nd Year MSA Teachers | 8 |
| | 3 rd Year MSA Teachers | 9 |

*Note: teachers may hold multiple credentials.

MSA Students. During the third year of MSA, approximately 79 6th graders, 448 7th grade students and 232 8th grade students participated in MSA project. All 7th grade students participated in MSA at three of the project sites. At the two smaller schools, all 6th, 7th and 8th grade students participated in MSA. At the fourth school (8th grade only) a subset of students, those who participated in Year 2 MSA for their 7th grade year, continued to be a part of MSA for their 8th grade year. Student ethnicity was primarily Hispanic/Latino/a (80%), with roughly 10% Native American and 10% white and/or other ethnicities. More than 80% of the MSA student population qualified for a free/reduced lunch program (an indicator of the impact of SES), while on average, more than 70% of the total population was identified as ELL. Table 3 displays more specific demographic information about Year 3 MSA students. Data for this table were collected at the 40th day of enrollment at the school, and thus, may not reflect changes in enrollment that occurred later in the school year. Note: at School B, ELL percentages were reported at 10% of the population, yet more than 75% students participated in a bi-lingual program at the site. Further exploration of this discrepancy is warranted, and may be due to reporting error to the state.

Table 3

MSA Year 3: Student Demographics

| | School A | School B | School C | School D |
|---|---|---|--|--|
| Grade Level of Students in School | 6 th : 26 7 th : 20 8 th : 22 Total: 68 | 6 th : 53 7 th : 55 8 th : 73 Total: 181 | 7 th : 373 Total: 373 | 8 th : 411 Total: 411 |
| Total Number of MSA Students | 68 | 181 | 373 | 137 |
| MSA/Gender | Female: 25 Male: 43 | Female: 94 Male: 87 | Female: 211 Male: 162 | Female: 67 Male: 69 |
| Ethnicity | Asian: 0/0% Black: 1/1% White: 11/17% Hispanic: 56/82% Native American: 0/0% Other: 0/0% | Asian: 0/0% Black: 0/0% White: 4/2% Hispanic: 176/97% Native American: 0/0 Other: 1<1% | Asian: 0/0% Black: 0/0% White: 13/3% Hispanic: 348/94% Native American: 12/3% Other: 0/0% | Asian: 4/1% Black: 0/0% White: 13/3% Hispanic: 374/91% Native American: 18/4% Other: 2<1% |
| % ELL | 75% | 10% | 85% | 74% |
| %Free/reduced lunch | 75% | 89% | 65% | 64% |
| Total Number of Teachers in Middle School | 5 | 9 | 28 | 20 |

MSA Mentors. Two MSA mentors (one an original member of MSA, the other joined the project in June 2001) worked extensively with teachers during Year 3 of the project. Both mentors have extensive teaching and professional development experience, and both are well-known members of the teaching and learning community in Northern New Mexico. In the summer of 2002, mentors prepared and facilitated two Summer Institutes: one institute—the Leadership Institute—was dedicated to MSA administrators, and the other institute focused on MSA teachers. During the school year, mentors observed each teacher during instruction an average of six times. Each observation included a pre-conference discussion of the lesson to be observed, the observation itself, during which time mentors compiled notes and used the classroom protocol developed in Year 2 of the project as a written record of the observation, and a subsequent debriefing session of the teaching event.

Mentors also organized follow-up training sessions in December and June, and worked extensively with 1st year teachers. Additionally, MSA mentors were responsible for arranging and managing the logistics of the project and its administration, and for on-going communication with leadership and administration at each of the sites. In April 2003, a third mentor teacher joined the project, a 30-year veteran with experience and expertise in science and math instruction, technology, and a well-known member of the teaching and professional development community.

Implementation of MSA Year 3 Project Goals

Information in this section is organized around the three research questions, with specific examples of how and in what ways teachers implemented the various elements of the project. The focus for Year 3 of the project was to further refine strategies for instructional excellence, continue to foster and support collaboration amongst and between teachers and schools, to more systematically assess student learning, and to use technology to support communication and instruction.

MSA Program Evolution

To examine the multiple ways in which MSA has evolved as a model for professional development, monthly contact with mentors occurred in the form of site visits, phone conferences and e-mail correspondence. These conversations allowed mentors time to reflect on the general status of the project and its implementation, discuss recent research findings that may impact teachers and their practice, and plan for future staff development sessions with teachers.

Additionally, selected MSA classrooms were the focus of two site visits during the 2002-2003 school year. The purpose of the site visits was to systematically collect information on the implementation of project goals. A modified observation protocol was used that incorporated and expanded upon the important instructional dimensions used by mentor teachers in their classroom observations. Data collected from these classroom visits were used to further refine the MSA model for professional development, and to provide information on how the project evolved. All classroom teachers were interviewed, either in-person or by phone, about their general perceptions of MSA progress, implementation of project goals, and specifics from observed lessons.

Analyses and review of these information sources revealed four general areas of program evolution during the third year of MSA. They included:

1. refinement of MSA's theory of action;
2. further development of the talent and expertise of the leadership team & project members;
3. increased project capacity to deal with logistics;
4. stronger and more positive relationship between MSA and schools districts.

These findings from Year 3 of MSA are discussed in detail in the following paragraphs.

Refined Theory of Action. During the past three years of the project, MSA has grown and developed as a unique, research-based approach to professional development. The program's "theory of action" evolved from a collection of separate, distinct set of practices and activities to a cohesive series of related and integrated concepts and approaches to teaching and learning. Specifically, the project uses an inquiry-based approach to analyzing and understanding teacher practice that is sustained and focused, and incorporates numerous elements of other successful reforms. The approach is characterized by intensive, on going mentoring as a backbone to support teachers in their efforts to reflect upon and refine instructional techniques and strategies to support student learning. An observation process and protocol has evolved that incorporates features of quality teaching. This cognitive coaching model has proved to be instrumental in guiding and facilitating teacher-mentor interactions and relationships. Teachers made the following comments about the cognitive coaching/mentoring process:

Teacher 1: At first I didn't feel comfortable with the observation protocol. I always feel like I have to perform when someone is observing me. The first few times I wasn't sure what to expect, but the pre-conference helped me focus on what my mentor teacher would be looking for when observing in my classroom. After a couple of observations, I looked at them (the observations) in a different way. Not as a threat, but more as a learning experience for me. I didn't put on a show but conducted my class the same way I did everyday. The comments that were shared at the debriefing really helped me become aware of what I was and wasn't doing. I felt very comfortable with my mentor teacher observing because she helped me focus on areas I was neglecting and on ways I could expand the lesson I was teaching to help students learn.

Teacher 2: As a result of MSA and the mentoring process, I have been able to take control of my teaching practices. Having the mentors visit my classroom gives my self-concept

and teaching practices a positive boost. Support is there for me. In the past, before MSA, administrators didn't guide much and didn't know how to analyze and compliment excellent teaching practices. It was a hit and miss approach. I'm not saying that our immediate supervisor is there yet, as an instructional leader and mentor, but little by little he'll get there. It helped our school to have administrators attend the MSA summer training sessions.

As these quotes demonstrate, an inquiry model of professional development, supported by mentoring, permits teachers to reflect deeply upon their practice and how it impacts students. In MSA's theory of action, teachers work together and with mentors to solve problems of practice.

In the following quote from a veteran teacher, evidence is provided about the difference between MSA and other professional development projects and reform efforts, and the importance of the developing professional discourse around the instructional practices. Additionally, the quote provides evidence of how experienced teachers can continue learning from careful, on-going analyses of their teaching.

Teacher 1: I feel MSA has changed my teaching and helped me look at what I was doing in my classroom from a new perspective. Since joining MSA, I have taken quite a few risks in trying new and old strategies with much more success. Many times we are given new ideas that must be implemented into our teaching, but never given any direction from staff developers. What eventually happens is that the idea sits on the shelf with all the other ideas we should try to implement but never do.

The difference with MSA is that we actually have real people demonstrating, informing, sharing, encouraging, and even pushing us in a more positive direction. That encouragement is such a vital part of making our risk taking a success. And if it doesn't work the first time, we sit down and try to figure out what we can do better instead of putting it on the shelf. As a veteran teacher, I know MSA has helped me become a better instructor. Education is always changing and needs to change, and this program has helped me change with the times.

Another dimension of MSA's theory of action evolution is the development of a matrix of exemplary teaching practices. This document, shown in the Appendices as Figure 1, acknowledges different areas of exemplary teaching and focuses on the development of teacher expertise in a variety of dimensions, including classroom management, assessment, instructional strategies, and implementation and use of a standards-based curriculum. By clearly identifying dimensions of quality practice,

and providing clear examples of the various levels of expertise, the MSA “theory of action” has contributed to the reflective process that teachers are asked to engage in as part of their own learning.

Increased Talent and Expertise of Leadership and Project Members. As MSA has grown, so has the talent and expertise of the project members. A number of the second and third year MSA teachers credit the project with moving their ideas and practice from a “business as usual” approach to teaching to instruction that is characterized as carefully planned, reflective, iterative and standards-based.

During the Summer Institute and throughout Year 3 of the project, teachers worked to develop their capacity to establish learning goals collaboratively, plan their lessons effectively, develop quality assessments to measure student learning and discuss way/s in which to embed and implement MSA project goals and objectives. MSA teachers, particularly 2nd and 3rd year participants, have come to view themselves as more skilled and knowledgeable with respect to providing standards-based learning opportunities, with clearly articulated learning goals, for their students. Teachers report that they are clearer and more focused in deciding what they want students to know and assessing what and how much their students have learned. The following is an excerpt from an after-school focus group, where teachers are asked to reflect on the impact MSA has had on their teaching.

Teacher 1: One of the changes since MSA is now my teaching is standards driven. We’ve all become very familiar with the standards and benchmarks, and we hold ourselves accountable to teaching those standards. Our students are aware of content standards and benchmarks, and they are also accountable for learning those through the lessons that we prepare.

Teacher 2: I would just like to say that in my teaching practices, I have a broader repertoire of things that I can incorporate into my classroom. I can use graphic organizers, I can use rubrics, I can use cooperative learning, and I can use projects that have instruction integrated with technology. I just have a broader range of things that I can incorporate into my classroom, and I feel comfortable doing it. You know, these are things that I’ve heard about, maybe you know read about, maybe went to a day workshop about it. But I’ve never implemented those ideas in my classroom. And MSA, after 3 years of being involved, I’m able to bring those ideas, like cooperative groupings, technology and standards-based curriculum, into my classroom.

Leadership capacity has likewise grown at the MSA sites in a number of different ways. For some teachers, who assumed the role of team leader (or were

recruited by mentors to serve as team leaders) at their sites, leadership was a formal responsibility. Team leaders were accountable for scheduling and conducting weekly team meetings, documenting those interactions and reporting general progress and challenges to mentors. Initially, some teachers reported feeling “stressed, apprehensive, or uncertain about their role as team leader”. But as the year progressed, and team leaders gained confidence and experience facilitating and leading their teams, teachers came to view the position of team leader as a way to contribute to student learning and success at their sites. Team leaders were, in general, successful in working with their peers. In a very limited number of cases, team leaders reported difficulties in building consensus and/or having all team members participate in the weekly MSA work and collaboration sessions.

Overall, teacher knowledge and expertise in working with their peers, in collaborative, non-threatening ways, has increased over the past three years of the project. The comment below is an example of the increase in collaboration at sites, and the ways in which teachers are assuming leadership roles at their sites.

Teacher 1: I feel as a team leader, my team was very successful in sharing information, collaborating, and encouraging as well as supporting each other. We enjoyed working with each other, covered each others classes when emergencies came up, and felt comfortable in pointing out areas we needed to improve upon to make our team more successful. We had a good group of students and a great year. I learned a great deal about leadership from this experience, because I was able to lead without having to evaluate my peers.

Leadership developed and manifested itself in other, less formal areas of teacher work and practice too. Teachers reported that they incorporated many of the MSA approaches in their work and interactions with other staff and personnel at their sites. In the comments below, teachers provide examples of their informal roles as leaders in interactions with classroom assistants and student teachers.

Teacher 1: With reference to mentoring, this year I had two aides working in my classroom. I found myself, with these two people, doing a lot more sharing, and a lot more work in a mentorship role. I’m trying to help people who are willing to go into the teaching profession. This (mentoring) has helped me to reflect too. I’m asking for feedback from observers in my classroom. I ask for feedback, from novices to experts, on the things I’m doing. Those observations bring to light things I did well, forgot to do or need to improve.

Teacher 2: MSA ideas and approaches have really helped me out with my student teacher. I used the cognitive coaching tool. That (tool), and other MSA ideas, made it much easier for us to talk about her (the student teacher) practice, and for me to provide suggestions, guidance, and direction for her teaching.

Mentors, too, have evolved in their capacity to provide leadership and expertise to the project. Over time, mentors have moved their ideas from the realm of theory into the world of practice, and have benefited from the opportunity to become true instructional leaders at MSA sites. Their observational and mentoring powers, already highly refined, have developed even further, allowing them to individualize and differentiate goals for teachers based on teacher needs, background and experience.

Mentor 1: ... in your schools, administrators fulfill a certain niche and have certain responsibilities, but you're saying it's the MSA mentors who are completing the classroom observations, the assessments, and building upon the idea of professional development as a continuous application of the observations and modeling, the mentoring and the coaching. So there are various roles MSA mentors are fulfilling.

MSA mentors have seen their roles evolve over the past three years in schools. They dedicate less time to demonstration lessons and individual work with students, although teachers report that mentors are a powerful instructional resource in cases where it has been critical to work with a small sub-group of students to clarify a concept, provide additional support or assistance for behavior problems and with technology, and engage in more cognitive coaching activity. Mentors have seen the benefits of this reallocation of time, commenting that while demonstration lessons are valuable, it is in the cognitive coaching/reflective process where they see their expertise as having the greatest influence on supporting and strengthening teaching and learning.

Increased Capacity to Deal with Logistics. A third area of project evolution relates to the program leaders' capacity to deal with logistics. The myriad of experiences and responsibilities MSA has undertaken as part of the project has necessitated a stream-lined and systematic approach to the processes of arranging schedules to observe in classrooms, coordinate payments of stipends, arrange for delivery of materials (including technology, such as computers, wiring for networks, and the like), and schedule meetings with district administrators and the community.

To address one aspect of project logistics, MSA mentors have developed a yearly project log for teachers that clearly outlines the work and responsibilities during the year and a corresponding schedule, with payments embedded into it. Figure 2 below shows an abbreviated work and product commitment log for MSA teachers during Year 3 of the project (a copy of the full 2002–2003 MSA teacher log can be found in the Appendices). Teachers noted that this schedule has allowed them to plan more systematically for work and project requirements expected for the year. Mentors view the “log” as a progress guide for better understanding how and in what ways teachers are completing project goals and objectives, and the areas in which teachers need additional help and support. For example, at the 2002 Summer Institute, teachers were responsible for planning and preparing a set of concepts, questions and corresponding content standards as a plan for their instruction during the school year. Upon completion of the task, mentors reviewed teachers’ plans, asking questions, and highlighting additional areas of interest or approaches as these plans were reviewed and subsequently revised.

Figure 2

MSA 2002-2003 (Abbreviated) Log

| | | | |
|------------------------|--|-------------------------|--|
| Name: | | Site: | |
| Grade level(s): | | Content Area(s): | |

| Item | Date | Attendance | Logged by: |
|--|---------------------------|-------------------|-------------------|
| Teacher Quality Institute (all dates to be signed and completed by mentor) | 7/29/02 – 8/9/02 AM/PM | / | |
| Item | Date completed | | Logged by: |
| Topics/big ideas for each quarter | | | |
| Concepts defined, questions developed for each quarter | | | |
| Standards for each quarter | | | |
| Assessment action plan | | | |
| Technology action plan | | | |
| Cooperative learning action plan | | | |
| Integrated unit 1 st semester | | | |
| Integrated unit 2 nd semester | | | |
| Jigsaw (cooperative learning lesson) | | | |
| Graphic organizers use and plan | | | |

| | | |
|---|----------------------------|---|
| | | |
| August - May cognitive coaching | | |
| August - May portfolio check | | |
| August - May after-school meetings with mentors | | |
| | | |
| December MSA meeting 12/7/02 | | |
| December open house | | |
| December cognitive coaching, portfolio check | | |
| December portfolio check | | |
| May Student Portfolio Fest (Open House) | | |
| May exit interviews with Mentors | | |
| June Debrief – 9AM - 4PM | 6/02/03 - 6/03/04 AM/PM | / |

Stronger Relationship between MSA and School Districts. Over the past three years, MSA has worked hard to become a viable presence, with responsibilities, influence and credibility, within project schools. Prior to the introduction of the project, districts signed contractual agreements with specific obligations to MSA and its teachers for the right/privilege to participate in MSA. Changing administrations, district politics and other factors, such as budget cuts and state mandates, impacted the ease and timeliness with which the contractual obligations were met by the districts. Timely compensation, access to the Internet, meeting and release times, coverage for classroom visits to other sites, and a host of other activities, were diligently and consistently presented to school administrators by MSA mentors and leadership as necessary, crucial elements of MSA program success. Over the past three years, by developing trust, and supporting teachers in their work to improve student learning, MSA mentors have been successful in their efforts to build strong relationships with MSA schools, district office personnel, and the community.

In response to these logistical challenges, MSA has developed a number of strategies to work effectively with districts. Mentor teachers developed a leadership academy for principals and other administrators. These academies were designed to familiarize school leaders with the concepts, theories and research upon which MSA is built. As administrators have become more familiar with the MSA, its goals and

objectives, and the processes inherent in the cycle of inquiry, the logistics of honoring meeting times, providing vehicles for long-distance transportation to professional development sessions, the importance of teachers participation in MSA work has become an easier, more seamless process.

To support and facilitate communication about the project, MSA mentors, along with MSA teachers, have made presentations to School Boards, parents and other community members to discuss the project, its goals and its accomplishments. These activities had the combined effect of creating a stronger, more powerful relationship between the schools and communities and the MSA teams and leadership.

MSA Impact on Teaching and Learning

Project Impact on Teachers

MSA has influenced teachers in a number of different areas over the past three years. During Year 3 of the project, there were five areas of focus for professional development. They included long-range planning, technology use, assessment, instructional strategies, and grouping practices. These findings are discussed in more detail in the following paragraphs.

Long-range Planning. Systematic planning was an area of refinement during Year 3 of MSA. In previous years of MSA, teachers worked collaboratively to set goals and identify concepts to teach throughout the school year. During the 2002 Summer Institute, teachers were introduced to a new planning tool. Teachers worked systematically within their teams to develop a set of “key concepts” as a process for focusing student learning during the year. The strategy, referred to as “Data Not Guesswork” or DNG, is a research-based approach (Jenkins, 2003) to establishing a clear set of teaching and learning goals for a particular class or subject. Each teacher developed a set of concept statements that served as a mechanism to guide instruction throughout the school year. These concepts, in question form, were used as “check point” of student understanding; running scores were recorded over the semester. Data on class performance were to be displayed on chart paper, and classes were encouraged to improve their scores to outscore other classes.

For many MSA teachers, “DNG” was an important tool for planning and learning goal articulation. Teachers made the following comments and observations about “DNG” as a planning tool.

Teacher 1: DNG was great! I used DNG every Thursday in my class. Students seemed to know and understand the importance of the Standards and Benchmarks better. My questions changed once I noticed the students were getting bored with the same ones over and over. So what I did was take the answers and changed them around to be the questions. I noticed more effectiveness that way.

Teacher 2: I used DNG once a week. I took questions from all of the material I planned on using throughout the year. We corrected it together and discussed it briefly. It was a great way to introduce the concepts before we covered them in class. It was a great way to review/reinforce what was already covered. Only one of the three classes I did with DNG was into the competition aspect of DNG. This was, in my opinion, a great motivator for them to do better. I wish that the other two classes would have been as competitive. I think they would have learned more.

Teacher 3: DNG was a great tool to get me focused before the year started. I had to work with the other science teachers to decide on the important parts of the curriculum and to develop the questions that would address those parts. The only difficulty was implementing the DNG because I had no previous experience with it and had to observe another teacher before I had an idea of how it would work in my classroom. I was then able to do it once a week for a total of 21 times. Each quiz had ten questions and students kept track of their progress on their own student run charts. The students were very comfortable with the process and looked forward to doing it each week since it was a routine that they understood and could be successful at and set personal goals.

Other teachers found DNG problematic or ineffective as a planning tool; other teachers considered, but never implemented the “DNG” process in their classrooms.

Teacher 1: I thought a lot about it, had some easy to grade questions in my head, but I never had enough courage to actually give it a try. I really wish I could see a video of it happening. It’s all so new, and, because I’m a new teacher, new things frighten me.

Teacher 2: I can’t say that I used DNG to guide instruction, but I know that I am going to revise my questions this summer so that they may be useful. I think that was what hurt me the most with this technique, my questions were not always useful.

Teacher 3: My questions for DNG were too long or asked multiple questions at a one time. I like to keep questions short to facilitate efficiency in the classroom. Students retained the concepts and information, in part because of the repetition of the questions.

Teacher 4: I never fully implemented DNG the way it is meant to be implemented. I never used the class run. What I found was that students liked the experience of success that the repetition bred. I also set it up in a way that made the students think that if they knew all the DNG questions they would know enough to be fully prepared for 8th grade. I would definitely use this again!

Overall, however, teachers reported, on surveys, interviews and observations, that they were more regularly and consistently planning instructional programs that focused on student learning. Additionally, teachers used the ideas and concepts developed collaboratively during the Summer Institute as a stepping stone to conversations about teaching and learning goals. Teachers answered a series of questions about the program planning approaches. Table 4 below presents results from the teacher survey.

Table 4
Program Planning: Curriculum and Articulation

| | <i>Please respond to the following based on your implementation of MSA ideas.</i> | 2002 – 2003 Mean (SD) |
|----|---|-----------------------------|
| a) | I develop yearlong and short-term goals for my students. | 4.1 (0.8) |
| b) | I select content to meet the learning goals of my students. | 4.3 (0.6) |
| c) | I design and adapt curricula to meet the needs of my students. | 4.4 (0.6) |
| d) | I use instructional strategies that develop and promote student understanding. | 4.6 (0.5) |
| e) | I work with my colleagues within disciplines to set goals and standards for learning and achievement. | 4.0 (0.8) |
| f) | I work with my colleagues across disciplines (content areas) to set goals and standards for learning and achievement. | 3.7 (0.9) |
| g) | I developed goals for “data not guesswork” and used them to guide instruction. | 3.7 (1.0) |

Note. Scale: 1 = never, 3 = sometimes, 5 = always, NA = Not applicable.

As Table 4 indicates, teachers are planning instruction in meaningful ways, including working with colleagues (most often in similar content areas) to develop long-term learning goals for students. Teachers made the following comments

about the role that instructional planning and articulation of goals and expectations had on teaching and learning in their classrooms.

Teacher 1: As a result of working MSA, I now analyze each and every move I make in the classroom, always thinking about the students and what they need. I almost debrief with myself on a class by class basis to determine if the success that I want was present or if we need to elaborate on a concept even more. The initial planning of lessons is the biggest change in my teaching philosophies. I am actually planning with assessment in mind first. I have never done that before.

Teacher 2: My focus now is on goals, with students knowing the expectations. It isn't just on curriculum and content. It is more on what the students' need to know. I have found MSA inspirational in making me think more of what I wanted the students to know.

Teacher 3: Working with my colleagues through weekly meetings has helped increase the amount of sharing and collaboration this year. We have focused more on what the students needs are in each class and how to best meet those needs. This has helped tremendously in making for a more productive successful year.

Teacher 4: I'm a first year teacher and MSA has totally provided or set the standard for me as far as planning, articulation and collaboration with my colleagues.

Technology Use

During Year 3 of MSA, all project teachers were provided with current laptop computers, with the primary goal of having teachers use the technology for instructional purposes. This "gift" had implications for technology access and use by teachers. Table 5 below presents survey data on the multiple ways in which learning materials, including technology, were used by MSA teachers in teaching and learning in MSA classrooms.

Table 5
Resources for Learning: Materials and Tools

| | <i>Please respond to the following based on your implementation of MSA ideas.</i> | 2002 – 2003 Mean (SD) |
|----|--|-----------------------------|
| a) | I structure learning time to allow students to engage in projects and/or investigations. | 3.8 (0.9) |
| b) | I create a setting for student work that is flexible and supportive of student learning. | 4.2 (0.8) |
| c) | I ensure a safe learning environment. | 4.8 (0.4) |
| d) | I make available tools & materials to students to support learning. | 4.7 (0.6) |
| e) | I make available print resources to students to support learning. | 4.5 (0.7) |
| f) | I make available technological resources to students to support learning. | 3.7 (1.1) |
| g) | I use graphic organizers to support learning. | 4.1 (0.9) |
| h) | I engage students in designing their learning assignments. | 3.1 (1.1) |

Note. Scale: 1 = never, 3 = sometimes, 5 = a great deal, NA = Not applicable.

Classroom observations suggest that technology use to support instructional purposes is slowly emerging as a viable instructional tool in some MSA classrooms. Easy and reliable access to technology, coupled with teacher knowledge and familiarity with technological tools, appear to be the primary variables associated with teachers' use of technology as an instructional tool. In the comments below, teachers discuss the impact the introduction of technology has on teachers and their students.

Teacher 1: Being from a rural area, I think it's invaluable for rural kids to be able to enhance the kinds of materials they have access to and give them the same opportunity that they (students) have in urban areas. I, myself, am not that well versed in the use of technology. I'm trying to improve myself in that area. My cohorts, my peers are exceptional as far as using the computers and the Internet . . . When the new mentor first came to the project, she talked about PowerPoint. And now I think some of my team do PowerPoint presentations in their lessons. The kids themselves are learning. We have 6th graders that I think are able to use PowerPoint. But the one thing, key, that sticks, that

really sticks out in me is the fact that we're from a rural community and it brings a lot of things to our kids that otherwise, as good a teacher as you are, you couldn't do.

Teacher 2: . . . all of us are implementing either an electronic grade book or using the Internet to research and to find sample lesson plans, rubrics and that kind of thing, and that's one of the ways how it's (technology) really has helped me. Our technology person, at the District Office, does a lot of looking for materials that we can use, and implement in our rooms. But also being able to get kids online for researching and PowerPoint and things like that are important. Kids are not satisfied anymore with just the basics. They want to get on the Internet and download stuff from the Internet to include into PowerPoint presentations so the presentations are more interactive...

Many MSA teachers echoed the ideas in these reflections, and view technology as an important tool for bringing quality resources and learning experiences to their students in rural communities. The process of introducing technology to classrooms can also be viewed as a "scary process", as described in the paragraph below.

Teacher 1: Over the past three years, it (technology) really was one of the components of MSA that was the slowest for me to acclimate to, partly because our school didn't have the technology. And I just felt very frustrated by that, but then once we had it, a new computer lab, I wasn't very comfortable bringing it into the classroom and having the kids just do stuff until during one of those informal observation times (with a mentor), I said, "Please could you come in and help me with Publisher?" And I had three MSA teachers in there, helping me, helping the students, and so I learned from them. All I had to do was like one class period. It was modeled to me and I was able to take it from there, and I just saw that the kids were excellent at it, I mean, once they got started on something, they were very involved in it, and so I have a lot more confidence in technology. But I was not resistant to it (technology), because I was using it myself like personally, but there was just some sort of like the jump to, getting having my kids involved in it. You just have to see other people succeeding with it, or other people modeling it, for it to actually happen. But you know, I'm very thankful that after 3 years in the program I know, I do, I can include technology in my classroom. Before MSA the technology was just not there and neither was my confidence in using it.

Technology was used in another capacity, for on-going communication between mentors and project members, during the third year of MSA. A weekly message was sent to teachers, via a list-server; MSA teachers were to read and respond to the research articles and opinion pieces distributed. Teacher reactions to the weekly informational electronic messages were very positive. Survey results indicated that most teachers reported responding to the weekly e-mail messages "almost always" and rated the information as "highly useful" to them as

professionals. Analysis of open-ended survey responses revealed more variation in teacher's perception of the messaging tool. Some teachers reported difficulty accessing the messages due to limited technology situations (unreliable Internet connections, etc.), and other teachers reported reading the articles but found responding electronically to be burdensome and chose instead to discuss the topics with their colleagues on-site. The vast majority of teachers however, viewed the list-server information as an important resource for new ideas on teaching, learning and assessment and saw the weekly communications as means through which to better understand their colleagues ideas and challenges on practice.

Technology had a third application in the 2002—2003 school year: in May of 2003, MSA teachers had the opportunity to pilot a new technology that enabled them to hold a multi-point teleconference. Through funds provided by MSA and LANL, teachers and MSA leadership held a videoconference that included five different sites. Teachers and project leaders alike view this new tool as a positive step towards decreasing the amount of travel time to professional development sessions, and increasing opportunities for on-going communication and collaboration.

Assessment

During Year 3 of MSA, teachers engaged in a number of opportunities to support teachers' knowledge and use a variety of assessment approaches. Prior to their involvement with MSA, most teachers characterized their assessment practices as traditional, that is, they used tests, quizzes, and assignments to "test" student learning, and primarily used scores or percentages from those assessments to arrive at a grade. These grades served as the measurement of student learning. What MSA teachers have come to realize, over the course of two to three years of intense professional development, is that assessment data represent a critical link to understanding the impact teaching has on student learning.

On the end-of-year surveys, MSA teachers rated their assessment capacity in the following ways (displayed in Table 6 below).

Table 6
Assessing Student Learning

| | <i>Please respond to the following based on your implementation of MSA ideas.</i> | 2002 – 2003 Mean (SD) |
|----|---|-----------------------------|
| a) | I systematically gather data on my students and their learning in my classes. | 4.1 (0.8) |
| b) | I analyze assessment data on a regular and systematic basis to inform and guide my teaching. | 3.7 (1.0) |
| c) | I guide my students in self-assessment. | 3.6 (1.0) |
| d) | I use student data, observations of teaching, and interactions with colleagues to reflect on and improve my teaching practices. | 4.0 (1.1) |
| e) | I provide students with information on how their work will be assessed. | 3.9 (0.9) |
| f) | I provide students with examples and models of what represents “good work”. | 3.6 (0.9) |
| g) | I use a wide variety of assessments to help me understand students’ ideas and learning. | 3.8 (0.6) |

Note. Scale: 1 = never, 3 = sometimes, 5 = always, NA = Not applicable.

Survey responses further indicated that while 70% of project teachers report having changed their assessment practices as a result of their participation in MSA, teachers are concerned about their assessment knowledge and are eager to learn more about how to more effectively and accurately use assessment to gauge student learning, and as an important indicator of how to proceed with instruction different than other areas of project impact, assessment appears to be an area of continuing need for MSA teacher learning and development. This finding is not surprising, based on national surveys of teacher assessment capacity and concerns regarding teacher assessment practices, and the corresponding gap identified in that arena. MSA teachers made the following observations about their assessment practices and expertise:

Teacher 1: I am weak in the area of assessment. I need to get myself into the habit of using different assessment techniques.

Teacher 2: I feel very confident in the knowledge area. I do not feel as strong in the assessment. MSA has made me feel better, but I still need to work more in this area.

Teacher 3: MSA has helped me to expand my assessment techniques and to incorporate a constant analysis of student work.

Teachers have begun the process of thinking and evaluating, critically, the role assessment can and should plan in their classrooms. Mentors believe that teachers are now ready to think critically about the relationship between teaching and assessment, and highlight the need for additional work and refinement of teacher assessment practices. The following reflection highlights one teacher's experience with implementing new assessment strategies in his/her classroom.

Teacher 1: Teaching for 24 years, I have always thought an assessment had to be some kind of written test. After working with MSA, even though this is still an area I feel I need to keep revisiting, I have seen how different kinds of assessment can reveal the same information as a written test. Keeping in mind that not all students do well on a written exam, I have tried different ways of evaluating that have been introduced through MSA. I am now a little more confident in using ideas like projects, posters, reports, and others as a way to assess a student's learning. This gives all students a chance to do well on some type of assessment. I still do use written test, which include multiple choice questions to keep practicing strategies to use on the standardized testing in March. I do like trying new assessments. They help students who can't perform well on written exams and for me they are much easier to grade.

Instructional Approaches

The MSA model for quality teaching incorporates a wide-variety of research-based approaches to learning and instruction. Central to the project was the notion that it was critical to move teachers away from a text-book, lecture, note-taking and worksheet instructional approach, to one that afforded students' multiple ways, and multiple opportunities to learn concepts, ideas and information. The introduction of "data not guesswork", presented and discussed in detail in previous paragraphs, was one approach implemented during Year 3 of MSA; the use of graphic organizers was another. Systematically organized, visual representations of concepts are the key elements to teacher and student use of graphic organizers. Many middle school teachers reported their initial reluctance to use tools they viewed as "too elementary, and too babyish" for their middle school students. Across the content areas, however, in math, science, social studies, and language arts, teachers reported

increases in learning and effort when graphic organizers were introduced and used with their middle school students.

MSA teachers made the following comments and observations on their use of graphic organizers.

Teacher 1: This year I focused on graphic organizers. The act of writing things down on colorful construction paper or in a booklet form seemed to get my students to remember facts much more easily. They seemed to remember the material better.

Teacher 2: I have incorporated the use of graphic organizers into my classroom, and have found students to be more engaged and more interested/interactive with the concepts for learning. I also develop assessments (quizzes or short answer reflections) based on the information the graphic organizers represent, so that students stay more focused and better understand the material they are learning.

Teacher 3: Graphic organizers are constantly used in my classroom. What an excellent way of managing my classes! It's made a difference in the way I get concepts across to my students.

Consistent across classrooms and content areas, MSA teachers reported the positive effects of using graphic organizers. Teachers indicated that: 1) students learned material more easily when graphic organizers were a part of the lesson; 2) students were better able to stay on-task, with fewer interruptions, when graphic organizers were included in lessons; and 3) student performance on other measures of learning and achievement increased when graphic organizers were used to support and facilitate learning.

Cooperative Learning. Another critical element in the MSA classroom is variation and flexibility in the instructional settings for students. Mentors view variation in the types of instructional settings as another, research based and supported means through which to increase student opportunities to learn, and ultimately increase student learning and achievement. The majority of MSA teachers, prior to the involvement with MSA, described the primary instructional settings as whole class instruction (lecture or discussion) and individual seatwork. Cooperative learning activities, small work groups or working in pairs, was limited if non-existent in MSA classrooms. MSA has provided a consistent and focused approach to providing teachers with opportunities to learn about how and in what ways classroom settings can be arranged to maximize student learning. At the

Summer Institute of 2002, teachers were introduced (and reintroduced) to a number of different cooperative learning strategies, including jigsaw approaches, fish bowl kinds of activities, and other instructional groupings.

During Year 3 of MSA, the majority of teachers reported using cooperative learning groups with their classes on a regular basis (defined in this report as at least three times per week, for 10 minutes or longer). Teachers were more willing to use groups to support student learning, and more willing to allow students the opportunity to discuss, negotiate and generate ideas within a group context.

Teacher 1: ...as far as cooperative groups, I think we've become more familiar, I've become more familiar, or, am more familiar with structuring cooperative groups, and a little bit more confident in implementing and designing lessons structured around that type of learning.

And these comments from a 7th grade math teacher about the role and importance collaborative learning, with differentiated groupings, played in his/her classroom.

Excerpt 1
7th grade math classroom
April 2003

Teacher: I have 3 groups working right now that are differentiated mostly by the pace they're working. I just had to do it. Some students were ready to move. I have one student, he's Group 1, who is working a full 2 chapters ahead of where we are. He's also writing and developing his own problem sets. Group 2 has three students in it, and they are two sections ahead of where we're working. Group 3 is scattered around the room, and they are working in pairs or triads. Sometimes I have students from Group 1 or Group 2 circulate to help answer problems. Other times I have volunteers from different groups solve problems. Students can move up or down to groups when they're ready. It's really working out well, these flexible groups that use cooperative learning structures I learned from MSA.

Group 2 Discussion

S1: We're really making progress on this percent stuff.

S2: I know it's hard, but I think I am starting to see patterns and how percents fit in with fractions, and ratios and all that ...

S3: I want to figure out a way to show what we've been doing, our approach to solving the problems.

T: Maybe you can share that with the other groups?

S3: Yeah, we could do a PowerPoint presentation, with animated numbers ...

MSA Impact on Student Learning

Data presented in this section on project impact on students are culled from a number of different sources: standardized achievement test scores student work, and teacher and administrator reports of student learning and achievement. As MSA teachers have become more familiar with the project, and have implemented, more successfully and to a greater extent, project goals, growth in students' performance has emerged in a number of classes, content areas and schools. Recent research and program evaluation has documented that it is during the 3rd year of a professional development/reform project that increases in student achievement are likely to appear (Greenwald, et. al, 1996; Little, 1999; Darling-Hammond, 1999).

Standardized Test Scores. Test scores reported here are from the 2002–2003 school year. The CTB/Terra Nova, published by McGraw Hill, was administered to students in March of 2003. Results from this year's test are presented below by school and content area. Additionally, scores for some students and schools are presented longitudinally for the past three years (2000–2003). Test data were made available to CRESST through a third party research group to ensure student confidentiality. Each student was assigned a unique ID; codes for those students will be maintained for the duration of MSA, and then destroyed. Additional tables with information on student performance can be found in the Appendices.

In this evaluation report, test scores are reported using a scale score. Scale scores are based on a scale of 1 – 1000, with the intervals between each number of equal size. The scale can be applied to all groups taking a given test, regardless of group characteristics or time of year, making it possible to compare scores from different groups. Scale scores are appropriate for various statistical purposes; for example, they can be added, subtracted, and averaged across test levels. These computations make direct comparisons among students possible and made it possible for us to compare individual scores to groups, and to compare an

individual's pre-test and post-test scores in a way that is statistically valid. These comparisons cannot be made with percentile rankings or by using grade level equivalents. Scores presented below are for 7th grade students, unless otherwise indicated. Note that school names reported below correspond to those listed in Table 3 (page 9).

Table 7

School A: 7th Grade
MSA CTB/Scale Scores (n= 20).

| | Reading/ SS | Language Arts/ SS | Math/ SS | Science/ SS | Social Studies/ SS |
|------|----------------|-------------------------|-------------|----------------|--------------------------|
| Year | | | | | |
| 2000 | 634 | 634 | 612 | 628 | 636 |
| 2001 | 641 | 642 | 621 | 640 | 642 |
| 2002 | 648 | 649 | 636 | 645 | 642 |
| 2003 | 674* | 672* | 665* | 673* | 666* |
| Gain | 39 | 37 | 53 | 45 | 30 |

Student performance at School A reflected statistically significant increases in test scores in all content areas (at the $p > .05$ level). At School A, all teachers are MSA teachers, and all teachers are 3-year members of MSA. Of particular interest is the growth in math and science; both of these content areas are taught by MSA teachers who implemented most, if not all, MSA project approaches to teaching and learning.

Table 8

School B: 7th Grade
MSA CTB/Scale Scores (n= 51).

| | Reading/ SS | Language Arts/ SS | Math/ SS | Science/ SS | Social Studies/ SS |
|------|-------------|-------------------------|-------------|----------------|--------------------------|
| Year | | | | | |
| 2000 | 631 | 634 | 623 | 629 | 634 |
| 2001 | 642 | 642 | 634* | 633 | 638 |
| 2002 | 646 | 646 | 642 | 644 | 646 |
| 2003 | 658 | 659 | 656 * | 664* | 656 |
| Gain | 27 | 25 | 33 | 35 | 22 |

At School B, student performance on standardized tests has likewise improved. Again, in the areas of math and science, student performance increases were statistically significant at the .05 level. All content areas showed increases over the past 3 years.

Table 8

School C: 7th Grade
MSA CTB/Scale Scores (n=390).

| | Reading/ SS | Language Arts/ SS | Math/ SS | Science/ SS | Social Studies/ SS |
|------|-------------|-------------------|----------|-------------|--------------------|
| Year | | | | | |
| 2000 | 635 | 637 | 616 | 625 | 631 |
| 2001 | 642 | 644 | 635* | 639 | 643 |
| 2002 | 648 | 648 | 641 | 642 | 643 |
| 2003 | 653 | 651 | 651 | 656 | 65 |
| Gain | 17.8 | 14 | 35 | 31 | 19 |

At School C, student scores increased in all content areas, with the most growth demonstrated in math and science scores over the past 3 years. It should be noted that at School C, not all teachers are members of the MSA team, that is, some students have classes taught by teachers who do not participate in the MSA project. In Table 8, scale scores reported are for **all** students in all subjects at the school, even in cases where students were taught by non-MSA teachers.

Scores are not reported here for School D because of an incomplete data set. However, additional analyses were conducted using gender and ethnicity as variables. In general, there were no significant differences in performance based on gender or ethnicity, with the exception of the 7th grade group. Note: due to variation in sample sizes at each of the schools and other variables, inferences drawn from these

analyses are limited. Caution should be used in interpreting the results.

Table 9

MSA CTB/All Schools: Gender & Ethnicity

| | Reading/ SS | Language Arts/ SS | Math/ SS | Science/ SS | Social Studies/ SS |
|--|----------------|-------------------------|-------------|----------------|--------------------------|
| Subgroup Categories | | | | | |
| 6th/White (n=8) | 662 | 657 | 654 | 670 | 660 |
| 6th/Non- White (n=89) | 649 | 654 | 646 | 648 | 649 |
| 6th/Male (n=41) | 649 | 652 | 649 | 652 | 648 |
| 6th/Female (n=35) | 651 | 657 | 645 | 648 | 651 |
| 7th/White (n=16) | 676* | 669 | 663* | 674* | 667* |
| 7th/Non- white (n=403) | 649 | 652 | 642 | 651 | 647 |
| 7th/Male (n=183) | 642 | 640 | 639 | 645 | 641 |
| 7th/Female (n=236) | 656* | 662* | 645 | 658* | 653* |
| 8th/White (n=20) | 689 | 685 | 678 | 685 | 677 |
| 8th/Non- white (n=92) | 669 | 665 | 664 | 678 | 664 |
| 8th/Female (n=51) | 661 | 656 | 661 | 678 | 662 |
| 8th/Male (n=43) | 679 | 676 | 669 | 679 | 667 |

*Note: statistically significant at the .05 level.

Of additional note is a trend in score increases: 3-year MSA teachers generally evidenced greater increases in student performance than did their 1 and 2-year counterparts. Additional tables with student data can be found in the Appendices.

Teacher Reports of Student Learning

Teachers were asked, in a variety of different circumstances, to report on the effect of project involvement on student learning and achievement. During Years 1 and 2 of MSA, evidence of increases in student learning was based primarily on anecdotal information (teacher, administrator, and parent reports), with limited

instances of growth. Year 3 of MSA focused, to a greater extent, on strengthening and improving student achievement in all content areas.

Table 10

Teacher Report of Student Learning and Achievement

| | <i>Please indicate your observations regarding student learning and achievement this year.</i> | 2002-2003 Mean (SD) |
|----|---|---------------------------|
| a) | I have observed changes in students learning and achievement this year. | 4.1 (0.7) |
| b) | My participation in MSA had a positive impact on my students' learning and achievement this year. | 4.3 (0.7) |
| c) | MSA ideas helped increase student learning and achievement. | 4.6 (0.5) |

Note. Scale: 1 = disagree, 3 = moderately agree, 5 = strongly agree, NA = Not applicable.

Teachers reported an increase in student learning and achievement this year, based on (teacher's) participation in MSA. In particular, teachers viewed the use and implementation of the "data not guesswork" instructional strategy as a productive and successful tool in supporting student learning. Teachers made the following survey comments about student learning and the use of "DNG":

Teacher 1: The release items I used for pre CTBS testing were a great help to the students. The idea of the question of the day also helped with test taking skills. The DNG quizzes helped "pound in" the main concepts that I wanted them to learn because we reviewed them almost weekly.

Teacher 2: DNG gave students a clear idea of what they were learning and what was expected of them. There was more enthusiasm from the students for their learning and their participation in class was more evident. They were excited when they were on the computers learning to use the publisher and power point programs- a very high percentage of the students completed their projects.

Teacher 3: Since the first year MSA was implemented I feel that my students have benefited from the pride I have felt in doing this project. In an area such as assessment, my students have had the opportunity to chart their growth with DNG, they have had the opportunity to do rubric-based assignments and more importantly have benefited from interdisciplinary units. MSA provided the vehicle.

Teachers also reported, somewhat reluctantly, that one of the many indicators they used to gauge project progress and success in implementation, was in standardized achievement test scores.

Teacher 1: Probably one of the most specific examples I can provide is that my students' CTB scores were higher than the other Language Arts teachers were. I would like to give that credit to MSA.

Teacher 2: I hate to use the Terra Nova as a basis for talking about student learning, but the fact is our test scores increased this year. Our math scores increased dramatically in reference to the past scores. I think this is because of the work our team has done with MSA for the past 3 years.

Additionally, teachers made the following observations about the multiple ways they have observed the impact that MSA has on student learning. What is important to note is that during Year 3 of MSA, teachers have begun to shift their focus from the process of trying new approaches to teaching, assessment and instructional techniques to the examination of how and in what ways the approaches are impacting and influencing student learning.

Teacher 1: Our CTB scores did improve. It's evident in the results. We are talking about students in how to make it a better learning environment. We are sharing more with our students about their successes and failures. For one, I don't give them busy work but I give them SMARTWORK to keep them busy learning. Students are working harder. They are putting more thought into their work.

Teachers reported other changes in student work and performance as a result of MSA at their schools.

Teacher 1: I think that kids have become more engaged in what they're doing. They've been because of the cooperative group structure and the peer tutoring I think that they've become a little more empathetic with one another, and willingness to help one another in the class setting. Instead of having to be assigned to help somebody they'll take that on their own.

Teacher 2: If you expect student growth, then there has to be teacher growth and I think that's one of the things that MSA has brought.

Teacher 3: As far as learning, I think, I realize that kids need a lot of consistency across the board, and this has helped us. As a group, we're more consistent, our practices and it's helped our students, I think.

MSA Impact on Administrators

Another important area of MSA program impact related to school principals. MSA principals were interviewed on two separate occasions to gather information on their understandings and views of the impact of MSA on teachers, students and overall learning environment at their schools. Of the four MSA principals, two were new to the project, and the other two others had served as principals or vice principals during the Years 1 and 2 of the project,

MSA principals were positive in their views about the project and its implementation. They made the following observations:

Principal 1: When I go to MSA classrooms, I really see evidence of the ideas the project is promoting. I see students working in groups, I see teachers using different instructional techniques, and in some classes, I see technology being used. The project is really taking off here this year because we have most of our staff involved.

Principal 2: We're really under the microscope here this year, due to the elementary school's performance last year on the standardized tests. I'm really hoping that the ideas and the approaches to teaching and learning that have had so much success here at the middle school can be moved to the elementary school and help student learning there.

Principals were also positive in their view of their relationship with mentors at the sites, and emphasized the importance of on-going observation and reflection as critical to strengthening teaching and learning. Principals were complimentary of the mentor's instructional capabilities, and ease and familiarity with technology.

In an effort to include and involve administrators in MSA, principals and district administrators were invited to attend a number of MSA workshops and NNMCEE meetings during Year 3 of the project. Principals reported that these events and activities supported their understandings of MSA.

Program Effectiveness

Teachers, students, administrators, and mentors continued to view MSA as a positive and important influence at their sites during Year 3 of the project.

Classroom observations, interviews, and survey results provide data to support these conclusions. Survey results of teacher ratings of program effectiveness are displayed in Table 11 below. Of interest is that overall, teachers rated all program effectiveness survey items more positively than they did during Year 2 of the project.

Table 11

MSA Program Effectiveness

| | <i>How effective was MSA in the following areas:</i> | 2001-2002 Mean (SD) N = 17 | 2002 – 2003 Mean (SD) N= 21 |
|----|---|-------------------------------------|--------------------------------------|
| a) | Familiarizing you with standards-based instruction | 4.5 (0.6) | 4.8 (0.6) |
| b) | Developing your knowledge of state frameworks for content areas | 4.2 (0.7) | 4.5 (0.6) |
| c) | Helping you develop interdisciplinary curriculum units | 3.6 (1.2) | 4.2 (0.9) |
| d) | Providing demonstration lessons that were meaningful and relevant | 3.6 (1.0) | 4.3 (0.7) |
| e) | Sharing assessment strategies | 3.9 (0.9) | 4.6 (0.5) |
| f) | Helping you to develop rubrics to support instruction | — | 4.2 (0.7) |
| g) | Informing/involving the community about MSA goals and objectives | 3.4 (1.4) | 4.1 (0.8) |
| h) | Helping you understand how to use technology effectively | 3.7 (1.2) | 4.3 (0.9) |
| i) | Assisting you in implementing cooperative learning activities | 3.5 (0.9) | 4.1 (1.0) |

Note. Scale: 1 = not effective, 3 = somewhat effective, 5 = highly effective, NA = Not applicable.

Decision Support Tool: Systematic Use of Data

One area of project refinement exploration, geared toward supporting schools and teachers systematic use of student data and information, explored during Year 3 of MSA was the option to use Quality School Portfolio (QSP). QSP, developed by CRESST/UCLA and funded by the Institute of Education Sciences (IES) is a

“decision support” technological tool that has features to help educators understand and use data to improve student achievement, including individual records for each student. Test scores and other data can be disaggregated by various subgroups, and can be transformed into graphs to support and facilitate decision making at the district, school, and classroom level. In May of 2003, the QSP development team prepared a demonstration of the QSP for MSA schools and other participants in the Northern New Mexico Network. The purpose of the presentation was to explore the possibility of introducing the tool as a means through which districts, schools, administrators, and teachers could easily and reliably disaggregate data to understand learning successes and challenges.

At the conclusion of the presentation, QSP was viewed as a positive and user-friendly tool to support teachers and schools use of data to better understand student progress and allow staff to disaggregate data to better estimate specific areas of program impact and need. Administrators and teachers were particularly interested in QSP features that allowed the incorporation of performance based types of student data, including projects, performances, and other individualized records of student learning. This electronic portfolio can be used as a longitudinal tool that accompanies students from grade to grade and class to class.

However, in 2000, the New Mexico State Department of Education placed a mandate on schools, requiring their buy-in of a similar data analysis program (generated by the developers of the CTB, McGraw Hill) to more easily allow schools access to data disaggregation tools. QSP would duplicate some, but not all, of the same features represented in the state-required program. Schools and districts were concerned about the time and resource necessary to import data to each of the programs. Thus, at the writing of this report, no further decisions have been made regarding QSP and its use and implementation to MSA schools and neighboring districts.

Additional Areas of Year 3 MSA Impact: As has been noted and documented throughout this evaluation report, MSA is a rigorous project for professional development that requires time, dedication, and interest on the part of the teachers involved with the program. A stipend is awarded to teachers, but project participants go beyond the required work and developed plans and ideas for strengthening instruction. As in prior years of the project, during Year 3 of the project, teachers and mentors faced a number of challenges that influenced their ability to fully implement MSA in their classrooms and at their sites. First, at one

site, student teachers were responsible for assuming full teaching responsibilities for a 6-week session as part of their credential programs. Their presence, while important to developing new teachers' teaching competencies, probably had an impact on student learning and achievement at that site. Second, teams faced on-going challenges with incomplete teams. In some instances, teachers faced personal problems that prohibited them from full MSA participation and implementation; in other cases, teachers were simply unwilling or unable to join their colleagues in the kinds of on-going discussion and dialogue necessary to support project goals and objectives. Third, up-coming changes in administration, at a site in critical need of principal support, impacted that site's ability to effectively and cohesively plan, teach and implement the project. Finally, mid-year, one site was charged with the additional task of mentoring the elementary school in their district. In many respects, this was a positive development, as it provided the MSA team with opportunities to further refine their thinking and helped to strengthen their leadership roles. Involvement with the elementary school took time and energy away from some of that team's focus for Year 3.

These additional areas of project impact are important to note because they influenced the quality and level of implementation of MSA at various sites.

Summary and Recommendations

The summary and recommendations that follow are organized around the findings and goals for Year 3 of MSA.

Summary. In general, Year 3 of MSA was characterized as a year of refinement and evolution of the MSA model for professional development. This was a multifaceted, complex process. Similar in many ways to the learning process or cycle, ideas and approaches were introduced, refined and implemented in a slightly modified fashion. For mentors, this process often meant translating abstract, conceptual theories and notions into classroom applications, often layered with the complexities of the political environment at schools. Mentors have come to realize and acknowledge that reform can assume many different iterations based on any given teacher's background, experience and willingness to try new ideas, and to engage in the (sometimes painful) process of reflection. For teachers, the Year 3 of the project was also one of refinement and reflection of MSA concepts and ideas. Teachers' knowledge and self-confidence evolved with respect to their ability and

capacity to engage in reflective practice with a focus on the way(s) in which new approaches and ideas impacted student learning.

For administrators, the evolution of MSA has a multitude of meanings. At one site, MSA evolved from a single team commitment to entire school participation. The principal had a strong commitment to providing enhanced learning opportunities to all students. Through successful negotiation, MSA expanded at that site from a single team to whole school participation. For other administrators, project evolution has meant an increase in the administrator's awareness and understanding of standards-based curriculum and instruction.

Recommendations for Year 4

Professional Development

Continued project involvement in quality, research-based professional development learning opportunities is important to teachers as they develop and refine their instructional strategies and incorporate new approaches into their classrooms. Administrative support is crucial to program success. On-going collaboration with colleagues and mentors, in the form of lesson study or other opportunities to analyze practice is critical to the continued success and growth of MSA.

Technology

Many MSA teachers have made significant steps towards developing their own technological expertise, and a number of teachers have begun to integrate technology into instruction. Continued work with technology, including a variety of programs, is important to allow teachers and students a vehicle through which to access current information and ideas. Teacher's participation in list server types of communications or another related type of structured technology-based interaction can continue to be a valuable source of interaction and discussion of instructional ideas, and problems of practice.

Instructional Settings

It is important for MSA teachers to continue to refine their use of varied classroom settings, particularly cooperative groupings, to support and maximize

student learning. On-going observations and analyses of assignments and group settings will assist teachers in efforts to maximize learning for their students.

As teachers become more expert in managing cooperative group work, and through clearly establishing goals and expectations for work and responsibilities within those group settings, increases in student learning and positive attitudes towards learning and school are likely to emerge.

Assessment

The area of assessment is one where MSA teachers and mentors recognize the need for continued development and refinement of assessment knowledge, use and implementation. MSA teachers are motivated and interested in deepening their approaches and understandings of how and what ways teachers can make best use of assessment data to both gauge student learning and as a tool for planning subsequent instruction. Project members have been introduced to a wide variety of assessment strategies; it will be beneficial to the project and to teachers to continue the conversation around the use and implementation of quality assessments, with a focus on the use of classroom assessments as an indicator of the nature and quality of student learning. Additionally, a classroom technology tool for archiving student data, such as QSP or other commercially prepared database, would be a worthwhile investment for the project. The tool alone, however, may be insufficient to support teachers and administrators efforts to make sense of student data. On-going collaboration with researchers and other assessment experts can serve to supplement and strengthen the assessment process at the classroom and school level.

Standards-Based Curriculum and Instruction

Continued work and discussion is essential to teachers' understandings of standards-based instruction. MSA can support teacher's development in those areas through careful work and analyses of curriculum and performance standards. Administrators, too, need to be familiar with content standards and benchmarks, and to continue to develop their understandings of what standards-based instruction looks like and the importance of supporting teachers in their efforts to provide high-quality standards-based instruction. Regular classroom visitation, with the purpose of learning about MSA teachers' instructional practices, continues

to be an important strategy for mentors and teachers for strengthening teaching and learning.

Project Logistics

Significant progress has been made since MSA's inception with respect to project logistics, including work requirements, and meeting times. What is needed in coming years is structural support for the MSA and its teachers. Clarity, with respect to meeting attendance, goals for students, communications with parents and the like, is critical to on-going project success.

Implications

During Year 3 of MSA, project teachers continued to implement MSA goals and objectives with increasing success and savvy. Teacher's willingness to try new approaches, to collaborate and to engage in reflective teaching practices, increased in both quantity and quality. Student achievement, in some classrooms, for some teachers, increased. Student attitudes towards learning, reflected in the nature and quality of their work and interactions with each other and with their teachers, improved. Growth was most dramatic for third year MSA teachers who fully implemented most (if not all aspects) of the program. MSA teachers continue to make important strides towards refining their teaching practices and implementing the instructional strategies, methods and tools to support and strengthen student learning and achievement. In future years, as the project theory of action continues to evolve, an increasing emphasis on student learning and performance is critical to incorporate into the theory of action.

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Appendix A

MSA Teacher Log, Full Version 2002-2003

| | |
|------------------------|-------------------------|
| Name: | Site: |
| Grade level(s): | Content Area(s): |

| Item | Date | Attendance | Logged by: |
|--|-----------------------|-------------------|-------------------|
| Teacher Quality Institute | 7/29/02 – AM/PM | / | |
| | 7/30/02 – AM/PM | / | |
| | 7/31/02 – AM/PM | / | |
| | 8/01/02 – AM/PM | / | |
| | 8/02/02 – AM/PM | / | |
| | 8/05/02 – AM/PM | / | |
| | 8/06/02 – AM/PM | / | |
| | 8/07/02 – AM/PM | / | |
| | 8/08/02 – AM/PM | / | |
| | 8/09/02 – AM/PM | / | |
| Item | Date completed | | Logged by: |
| Topics/big ideas for each quarter | | | |
| Concepts defined for each quarter | | | |
| Questions on concepts for year | | | |
| Standards for each quarter | | | |
| Mission statement | | | |
| Slogan | | | |
| Syllabus | | | |
| School/classroom discipline plan | | | |
| Expectations for students | | | |
| Daily routines | | | |
| Letter to parents including items above | | | |
| Assessment action plan | | | |
| Scatter gram action plan | | | |
| Technology action plan | | | |
| Cooperative learning action plan | | | |
| Integrated unit 1 st semester | | | |

| Item | Date completed | | Logged by: |
|---|----------------|---|------------|
| Integrated unit 2 nd semester | | | |
| Jigsaw (cooperative learning lesson) | | | |
| Graphic organizers | | | |
| | | | |
| August after-school meetings and Internet time | I | M | |
| | | | |
| September cognitive coaching | | | |
| September portfolio check | | | |
| September after-school meetings and Internet time | I | M | |
| | I | M | |
| | I | M | |
| Sept. after-school meetings with CBs | | | |
| | | | |
| October cognitive coaching | | | |
| October portfolio check | | | |
| October after-school meetings and Internet time | I | M | |
| | I | M | |
| | I | M | |
| Oct. after-school meetings with CBs | | | |
| | | | |
| November cognitive coaching | | | |
| November portfolio check | | | |
| November after-school meetings and Internet time | I | M | |
| | I | M | |
| Nov. after-school meetings with CBs | | | |
| | | | |
| December MSA meeting 12/7/02 | | | |
| December open house | | | |
| December cognitive coaching | | | |
| December portfolio check | | | |

| Item | Date completed | | Logged by: |
|--|----------------|---|------------|
| December after-school meetings and Internet time | I | M | |
| | I | M | |
| | | | |
| January cognitive coaching | | | |
| January portfolio check | | | |
| January after-school meetings and Internet time | I | M | |
| | I | M | |
| January after-school meeting with CBs | | | |
| | | | |
| February cognitive coaching | | | |
| February portfolio check | | | |
| February after-school meetings and Internet time | I | M | |
| | I | M | |
| | I | M | |
| February after-school meeting with CBs | | | |
| | | | |
| March cognitive coaching | | | |
| March portfolio check | | | |
| March after-school meetings and Internet time | I | M | |
| | I | M | |
| | I | M | |
| March after-school meeting with CBs | | | |
| | | | |
| April portfolio check | | | |
| April after-school meetings and Internet time | I | M | |
| | I | M | |
| | I | M | |
| | | | |

| Item | Date completed | | Logged by: |
|---|----------------|------------|------------|
| May MSA meeting May 3, 2003 | | | |
| May after-school meetings and Internet time | I | M | |
| May Student Portfolio Fest (open house) | | | |
| May exit interviews with CBs | | | |
| Item | Date | Attendance | Logged by: |
| June Debrief – Chama 9AM-4PM | 6/02/03 AM/PM | / | |
| Mora 9AM-4PM | 6/03/03 AM/PM | / | |
| Española/Los Alamos 10AM-5PM | 6/04/03 AM/PM | / | |

You may miss 6 after-school meetings this year. The 9 hours will be credited to you when you arrive at summer institute with your concepts and questions for your year.

9. Language(s) of instruction:

- Mostly Spanish _____
- Both English and Spanish _____
- Mostly English _____
- Other _____

Planning an Effective Program: Curriculum and Articulation

10. Please respond to the following statements based on your implementation of MSA ideas:

| | | Never | | Some-times | | Always | N/A |
|----|---|-------|---|------------|---|--------|-----|
| a) | I develop yearlong and short-term goals for my students. | 1 | 2 | 3 | 4 | 5 | N/A |
| b) | I select content to meet the learning goals of my students. | 1 | 2 | 3 | 4 | 5 | N/A |
| c) | I design and adapt curricula to meet the needs of my students. | 1 | 2 | 3 | 4 | 5 | N/A |
| d) | I use instructional strategies that develop and promote student understanding. | 1 | 2 | 3 | 4 | 5 | N/A |
| e) | I work with my colleagues within disciplines to set goals and standards for learning and achievement. | 1 | 2 | 3 | 4 | 5 | N/A |
| f) | I work with my colleagues across disciplines (content areas) to set goals and standards for learning and achievement. | 1 | 2 | 3 | 4 | 5 | N/A |
| g) | I developed goals for “data not guesswork” and used them to guide instruction. | 1 | 2 | 3 | 4 | 5 | N/A |

11. To what extent has your instructional planning, articulation and collaboration with your colleagues changed as a result of your participation in MSA?

| | | | | |
|------------|---|----------|---|--------------|
| Not at All | | Somewhat | | A Great Deal |
| 1 | 2 | 3 | 4 | 5 |

Please explain.

Guiding and Facilitating Learning

12. Please respond to the following statements based on your implementation of MSA ideas:

| | Never | | Some-times | | Always | N/A |
|---|-------|---|------------|---|--------|-----|
| a) I focus and support inquiry as I interact with my students. | 1 | 2 | 3 | 4 | 5 | N/A |
| b) I support student discussion of ideas in small and large groups. | 1 | 2 | 3 | 4 | 5 | N/A |
| c) I model and provide guidelines for positive ways to share ideas and information. | 1 | 2 | 3 | 4 | 5 | N/A |
| d) I require students to take responsibility for their learning and to work collaboratively. | 1 | 2 | 3 | 4 | 5 | N/A |
| e) I recognize and respond to student diversity. | 1 | 2 | 3 | 4 | 5 | N/A |
| f) I expect all students to participate fully in learning. | 1 | 2 | 3 | 4 | 5 | N/A |
| g) I encourage and model the skills of inquiry as well as curiosity, openness to new ideas, and skepticism that characterize continuous learning. | 1 | 2 | 3 | 4 | 5 | N/A |

13. To what extent have your approaches to guiding and facilitating student learning changed as a result of your participation in MSA?

| | | | | |
|------------|---|----------|---|--------------|
| Not at All | | Somewhat | | A Great Deal |
| 1 | 2 | 3 | 4 | 5 |

Please explain.

Assessing Student Learning

14. Please respond to the following statements based on your implementation of MSA ideas:

| | Never | | Some-times | | Always | N/A |
|--|-------|---|------------|---|--------|-----|
| a) I systematically gather data on my students and their learning in my classes. | 1 | 2 | 3 | 4 | 5 | N/A |
| b) I analyze assessment data on a regular and systematic basis to inform and guide my teaching. | 1 | 2 | 3 | 4 | 5 | N/A |
| c) I guide my students in self-assessment. | 1 | 2 | 3 | 4 | 5 | N/A |
| d) I use student data, observations of teaching, and interactions with colleagues to reflect on and improve my teaching practices. | 1 | 2 | 3 | 4 | 5 | N/A |
| e) I provide students with information on how their work will be assessed. | 1 | 2 | 3 | 4 | 5 | N/A |
| f) I provide students with examples and models of what represents “good work”. | 1 | 2 | 3 | 4 | 5 | N/A |
| g) I use a wide variety of assessments to help me understand students’ ideas and learning. | 1 | 2 | 3 | 4 | 5 | N/A |

15. To what extent have your assessment practices for teaching and learning changed as a result of your participation in MSA?

| | | | | |
|------------|---|----------|---|--------------|
| Not at All | | Somewhat | | A Great Deal |
| 1 | 2 | 3 | 4 | 5 |

Please explain.

Instructional Materials and Resources

16. Please respond to the following statements based on your implementation of MSA ideas:

| | | Never | | Sometimes | | A Great Deal | N/A |
|----|--|-------|---|-----------|---|--------------|-----|
| a) | I structure learning time to allow students to engage in projects and/or investigations. | 1 | 2 | 3 | 4 | 5 | N/A |
| b) | I create a setting for student work that is flexible and supportive of student learning. | 1 | 2 | 3 | 4 | 5 | N/A |
| c) | I ensure a safe learning environment. | 1 | 2 | 3 | 4 | 5 | N/A |
| d) | I make available tools & materials to students to support learning. | 1 | 2 | 3 | 4 | 5 | N/A |
| e) | I make available print resources to students to support learning. | 1 | 2 | 3 | 4 | 5 | N/A |
| f) | I make available technological resources to students to support learning. | 1 | 2 | 3 | 4 | 5 | N/A |
| h) | I use graphic organizers to support learning. | 1 | 2 | 3 | 4 | 5 | N/A |
| g) | I engage students in designing their learning assignments. | 1 | 2 | 3 | 4 | 5 | N/A |

17. To what extent has your design and management of students’ learning environment changed as a result of your participation in MSA?

| | | | | |
|------------|---|----------|---|--------------|
| Not at All | | Somewhat | | A Great Deal |
| 1 | 2 | 3 | 4 | 5 |

Please explain.

Building Communities of Learners

18. Please respond to the following statements based on your implementation of MSA ideas:

| | Never | | Some-times | | Always | N/A |
|--|-------|---|------------|---|--------|-----|
| a) I display and encourage respect for the ideas, skills and experiences of my students. | 1 | 2 | 3 | 4 | 5 | N/A |
| b) I give students a voice in decisions about the content and context of their work. | 1 | 2 | 3 | 4 | 5 | N/A |
| c) I require students to take responsibility for the learning of all members of their group/class. | 1 | 2 | 3 | 4 | 5 | N/A |
| d) I support collaboration among my students. | 1 | 2 | 3 | 4 | 5 | N/A |
| e) I structure and facilitate ongoing formal and informal discussions based on a shared understanding of the rules of classroom discourse. | 1 | 2 | 3 | 4 | 5 | N/A |
| f) I model and emphasize the skills, attitudes, and values of inquiry. | 1 | 2 | 3 | 4 | 5 | N/A |

19. To what extent have your ideas and practices relating to the development of learning communities with your students changed as a result of your participation in MSA?

| | | | | |
|------------|---|----------|---|--------------|
| Not at All | | Somewhat | | A Great Deal |
| 1 | 2 | 3 | 4 | 5 |

Please explain.

School & MSA Community

20. Please respond to the following statements based on your implementation of MSA ideas:

| | Never | | Some-times | | Always | N/A |
|--|-------|---|------------|---|--------|-----|
| a) I participate in planning and developing the school program for my content area. | 1 | 2 | 3 | 4 | 5 | N/A |
| b) I have a voice in making decisions regarding the allocation of time and other resources of the program. | 1 | 2 | 3 | 4 | 5 | N/A |
| c) I plan and implement professional growth and development strategies for myself and my colleagues. | 1 | 2 | 3 | 4 | 5 | N/A |
| d) I communicate with the parents in our community about MSA goals and student progress towards those goals. | 1 | 2 | 3 | 4 | 5 | N/A |
| e) I meet with my MSA colleagues to discuss student work, teaching and learning on a regular basis. | 1 | 2 | 3 | 4 | 5 | N/A |

21. To what extent have you changed your involvement and participation in the ongoing planning and development of the school learning plan as a result of your participation in MSA?

| | | | | |
|------------|---|----------|---|--------------|
| Not at All | | Somewhat | | A Great Deal |
| 1 | 2 | 3 | 4 | 5 |

Please explain.

MSA Program Effectiveness

5. How effective was MSA in the following areas:

| | Not Effective | | Some-what Effective | | Highly Effective | N/A |
|--|---------------|---|---------------------|---|------------------|-----|
| a) Familiarizing you with standards-based instruction | 1 | 2 | 3 | 4 | 5 | N/A |
| b) Developing your knowledge of state frameworks for content areas | 1 | 2 | 3 | 4 | 5 | N/A |
| c) Helping you develop interdisciplinary curriculum units | 1 | 2 | 3 | 4 | 5 | N/A |
| d) Providing demonstration lessons that were meaningful and relevant | 1 | 2 | 3 | 4 | 5 | N/A |
| e) Sharing assessment strategies | 1 | 2 | 3 | 4 | 5 | N/A |
| f) Helping you to develop rubrics to support instruction | 1 | 2 | 3 | 4 | 5 | N/A |
| g) Informing/involving the community about MSA goals and objectives | 1 | 2 | 3 | 4 | 5 | N/A |
| h) Helping you understand how to use technology effectively | 1 | 2 | 3 | 4 | 5 | N/A |
| i) Assisting you in implementing cooperative learning activities | 1 | 2 | 3 | 4 | 5 | N/A |

Comments: _____

MSA Impact: Self-Assessment

23. Please rate yourself along the following dimensions as a result of your participation in MSA. If you teach more than one content area, please use the comment area below to indicate your self-assessments of Question 23a and Question 23b.

| | | Weak | | Moderately strong | | Very strong | N/A |
|----|---|-------------|---|--------------------------|---|--------------------|------------|
| a) | Knowledge/ understanding of your content area (math, science, language arts, or social studies) | 1 | 2 | 3 | 4 | 5 | N/A |
| b) | Knowledge/understanding of your content standards (math, science, language arts, or social studies) | 1 | 2 | 3 | 4 | 5 | N/A |
| c) | Confidence in teaching content area | 1 | 2 | 3 | 4 | 5 | N/A |
| d) | Knowledge of a wide variety of instructional techniques | 1 | 2 | 3 | 4 | 5 | N/A |
| e) | Familiarity with state standards and benchmarks for your content area | 1 | 2 | 3 | 4 | 5 | N/A |
| f) | Technology skills | 1 | 2 | 3 | 4 | 5 | N/A |
| g) | Knowledge and implementation of cooperative learning strategies (i.e., jigsaw, small groups) | 1 | 2 | 3 | 4 | 5 | N/A |
| h) | Knowledge of various assessment strategies | 1 | 2 | 3 | 4 | 5 | N/A |
| i) | Implementation of various assessment strategies | 1 | 2 | 3 | 4 | 5 | N/A |

Comments: _____

Student Learning and Achievement

24. Please indicate your observations regarding student learning and achievement this year.

| | | Disagree | | Moderately strong | | Strongly Agree | | N/A |
|----|---|----------|---|-------------------|---|----------------|--|-----|
| a) | I have observed changes in student learning and achievement this year. | 1 | 2 | 3 | 4 | 5 | | N/A |
| b) | My participation in MSA had a positive impact on my students' learning and achievement this year. | 1 | 2 | 3 | 4 | 5 | | N/A |
| c) | MSA ideas helped increase student learning and achievement. | 1 | 2 | 3 | 4 | 5 | | N/A |

Please explain and provide specific examples.

25. Describe how the pre-conference, observation and debriefing experience with the mentor teachers impacted (or not) the teaching, learning and planning in your classroom this year. Please include specific examples if possible.
26. Describe how and in what ways you used the “data not guesswork” to guide instruction this year (if at all). Please include specific information on the structure you used, types of questions developed, frequency of use and overall reactions to this instructional/assessment approach.

27. Did you respond to the weekly informational e-mail messages?

| Not at All | | Sometimes | | Almost Always | |
|------------|---|-----------|---|---------------|--|
| 1 | 2 | 3 | 4 | 5 | |

How useful was the information sent to you as a professional?

| Not at all useful | | Somewhat useful | | Highly useful | |
|-------------------|---|-----------------|---|---------------|--|
| 1 | 2 | 3 | 4 | 5 | |

Please provide more information on your response to Question #27:

28. **For Site Leaders:** describe your experience working with your team members this year. How (if at all) did your leadership role impact your experience with MSA, your teaching and your relationship with your colleagues?
29. List three successes in the implementation of MSA at your school site.

- 1)
- 2)
- 3)

Please elaborate.

30. List three barriers to the implementation of MSA at your school site.

- 1)
- 2)
- 3)

Please elaborate.

31. How could MSA be improved?

Thank you for completing this survey.

Appendix C

MSA Teacher Cover Letter

June 2003

Dear MSA Teacher:

Our year-end data collection process is underway. Enclosed is a teacher survey that we ask you to complete. The survey is one way that we can collect information regarding teachers' perceptions of the MSA project. The information you provide us in this survey is critical to our portrayal of how the project is operating and its effects on students, teachers, and others. Your views will also help us to formulate recommendations for the future.

Your responses to this questionnaire will be held strictly confidential. Our report will not identify any teachers by name or school, and only we at UCLA will have access to completed questionnaires. Please take a few minutes before you begin the Summer Institute to fill out this survey.

The value of our work depends on the quality of information we receive. We understand the many demands on you and appreciate the time and energy that thoughtful responses require.

Thank you in advance for your assistance, and congratulations on your successful participation in MSA.

Sincerely,

Ellen Osmundson

Joan L. Herman

Appendix D (Figure 1)