



POLICY AND PROGRAM STUDIES SERVICE

**Evaluation of the
Magnet Schools Assistance Program,
1998 Grantees:
Case Studies Appendix**

FINAL REPORT

2003



**Evaluation of the
Magnet Schools Assistance Program,
1998 Grantees:
Case Studies Appendix**

Prepared for:
U.S. Department of Education
Office of the Under Secretary
Policy and Program Studies Service

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Introduction to Case Studies

AIR conducted in-depth case studies of eight MSAP projects in school districts identified as Districts A to H.¹ The purpose of these case studies is to help illuminate and illustrate results obtained from the data collected on all 57 MSAP projects.

Methodology

The districts were selected to be sufficiently diverse to reflect the characteristics of the 57 projects that are the focus of the evaluation. Districts were selected to include projects with both required and voluntary desegregation plans, to provide variety in geographic representation (i.e., Northeast, Southeast, Central, and West²) and to reflect variation in the proportion and makeup of the minority population.³ A comparison of the profile of the case study districts to all MSAP projects is provided in the appendix to Chapter 1. (See Table A-I-3.)

For each project, a sample of three to four MSAP schools was selected⁴ to represent a mix of elementary, middle, and high schools across the eight district sites, and to include a variety of themes. Each MSAP project director was given the opportunity to recommend one school, and AIR selected the remaining three schools for inclusion in each case study.⁵ Although the case districts and schools were not sampled at random from the full population, the case studies provide examples and permit comparisons of student achievement outcomes in MSAP schools and non-magnet schools enrolling similar students within each case district.

In addition to the MSAP schools, one or two comparison schools were also identified in each of the eight districts. These were schools at the same level and that served students with similar racial-ethnic backgrounds as the MSAP schools, but which did not operate magnet programs. In most cases, close matches were found, but in districts that were small or in which there were numerous magnet schools, the comparison schools tended to have fewer minority students than the MSAP schools.

AIR conducted one-week site visits to the eight case study districts in April and May 2000 and again in April and May 2001, which was prior to the No Child Left Behind Act (NCLB), when schools were operating under the Improving America's Schools Act (IASA). Two site visitors went to each site, and they gathered data at the central district office as well as in the selected MSAP and comparison schools.

As part of the week-long visit to each site, the site visitors spent one day together conducting interviews at the project level with the MSAP project director, the recruitment specialist, and the district curriculum specialist. In some cases, the site visitors attended MSAP project staff meetings. The interviews with district and project staff focused on topics including the implementation

¹ Per agreement with the districts, the names of the districts remain anonymous.

² Based on regions used by the National Assessment of Educational Progress, the National Education Association, and the Bureau of Economic Analysis of the U.S. Department of Commerce.

³ In the initial design, some of the case study districts were also to be a source of data for a more in-depth, longitudinal study of individual student achievement. Thus, at least five of the districts have good data systems for collecting student achievement data. During the course of the project, however, changes in federal policy regarding the collection of individually identifiable student data by federal contractors led us to revise this aspect of the study. (See Appendix I for further details.)

⁴ In the methodology section (Appendix I) we refer to the project level of the case studies as Study 3, and the MSAP school level of the case studies as Study 4.

⁵ Of the 32 MSAP-schools selected, there were 18 elementary, 6 middle, 7 high schools, and one combined level school.

process, the relationship of the MSAP project with the district, what MSAP schools offer, how the MSAP project fits into each of its schools, district curriculum and standards, magnet program themes, student populations, and recruitment strategies.

During the remainder of the week, the site visitors conducted one- to two-day visits to the MSAP and comparison schools where they interviewed the principals, talked with teachers, and conducted classroom observations. In the MSAP schools, they spoke with resource teachers and technology specialists funded by MSAP. Questions included topics such as professional development, student populations, school-specific and district assessments, the effects of MSAP schools on other schools in the district, education reforms, and integration of technology.

In three of the case study districts, site visitors conducted voluntary focus groups with students in six elementary schools, three middle schools, and one high school. AIR requested permission from district and school administrators to conduct the ten student-level focus groups. We also developed parental consent forms that were sent to parents of a school-selected class, through the assistance of the district and school administrators. Six to eight students participated in each of the focus groups at the various schools. In some instances, school faculty or administrators observed the focus group discussion.

AIR developed a student focus group protocol with age-appropriate questions that site visitors used in conducting the sessions. Questions on the protocol asked about student likes and dislikes, themes or special programs, choices between magnet schools and other schools in the district, school culture and climate, and opportunities for academic enrichment. Focus groups generally lasted for 20-30 minutes and were conducted during nonacademic times in the school day.

We administered principal surveys at the MSAP-funded schools as part of the larger survey data collection, and we also administered principal surveys at the non-MSAP comparison schools.⁶ Surveys also were administered in 2001 to a sample of teachers at the MSAP and non-MSAP comparison schools. At each of the MSAP and comparison elementary schools, surveys were administered to ten reading teachers and ten mathematics teachers. At each of the MSAP and comparison middle and high schools, surveys were administered to seven language arts teachers and seven mathematics teachers. In addition, at each of the MSAP middle and high schools, surveys were administered to six teachers who teach special subjects related to the school's theme. Questions covered topics such as educational background, instruction in subject area, the relationship between the magnet school program and their approach to instruction, the role of state and district standards and assessments, professional development, accountability, the principal's leadership role, parent involvement, and school climate and community.

Organization of the Case Studies

Each case study includes four major sections. The first section of each case study focuses on ***district context***. The section begins with the location, size and student composition of the district. The section then turns to a description of the district's magnet school history that details how long magnet schools—both MSAP-funded schools and others—have been implemented in the district,

⁶ In four of the districts where schools were not at the same level, one additional comparison school was selected and principals were asked to fill out the survey to provide more information about the non-MSAP schools.

how many schools there are, and what their role is in the district. Next, the section considers the state's systemic reform efforts—that is, the state's assessments, and its overall plan to establish content standards and assist the district and schools with curriculum alignment. Finally, the district's reform initiatives are briefly discussed.

The second major section of each case concerns the *project characteristics*. The section begins with an overview that includes the features that characterize the project and its role in the school district. The section then turns to a description of the district-level staffing for the project, the MSAP project's recruitment issues and strategies, and desegregation plans and objectives. Next, we consider the role of the MSAP project in supporting state systemic reform and other district initiatives, and the district's student achievement objectives. Beginning in 2005-06, the No Child Left Behind Act (NCLB) requires annual testing in grades 3-8 and at least one grade 10-12, and test scores are to be disaggregated by ethnicity and other subgroups. Some of the case studies are in states that are already implementing assessments in all or some of these grades. We conclude this section with a brief description of the professional development offered by the MSAP project and innovative practices that are occurring in the district's magnet schools.

In the third major section of each case, we describe the *school-level programs and activities* in the case district. The section begins with a brief overview of student and teacher characteristics, and brief physical characteristics of the schools. We then describe for each level (i.e., elementary, middle and high school) the magnet schools' programs, themes, and goals, and compare them with the programs in the non-MSAP schools. In our discussion of school programs, we focus on topics that are of common interest across the projects, including school theme(s) and issues such as integration of technology, promotion of professional development, and involvement of parents and the community. We also include in some instances topics that are specific to that particular case (e.g., a reading program or activities outside the classroom). Finally, we conclude the section on schools by describing the instructional activities in MSAP and comparison schools, providing examples of classrooms observed by AIR.

The fourth major section is a brief *summary* that focuses on the benefits, challenges, and lessons learned during the 1998-2001 MSAP grant period. The summary also provides a brief outline of the district's future plans for magnet schools.

Case Study, District A

District Context

Location and Size

District A serves a 600 square-mile area in the Southeast that contains two cities and surrounding unincorporated areas. Primary employers in the area include tourism, agribusiness, fishing and marine industries, light manufacturing, and electronics. At first glance, the district appears to be situated in a rural town in decline, with many old and outdated homes and many stores that are going out of business or are already closed. However, the area is also one of the fastest growing in the nation. The area's population currently numbers about 200,000, more than double what it was 20 years ago. Historically, the population has been composed primarily of white and black residents, but over the past several years, the migration of Hispanic and Haitian families into the area has added to the ethnic mix.

Student Composition

The district serves approximately 30,000 students from kindergarten through grade 12. Reflecting the trend in the general population, the district's student population has increased rapidly in numbers and diversity. In the decade preceding the MSAP grant award, the student population increased by about 60 percent, and the district built more than a dozen new schools to accommodate its burgeoning population and meet its desegregation goals. By 1999-2000, the district operated 21 elementary schools, five middle schools, four comprehensive high schools, a K-8 school, a grade 6 to 12 school, and four special schools (an alternative high school, an exceptional education center, and schools for teenage parents and youths with behavioral problems). The district continues to gain about 1,000 students per year.

The ethnic composition of District A's public school enrollment is approximately 60 percent white, 31 percent black, 8 percent Hispanic, and 1 percent Asian and Native American. Districtwide, just over half (53 percent) of the students are eligible for free or reduced-price meals.⁷ Limited English proficient students, virtually all of whom speak either Spanish or Creole, represent 7 percent of the elementary school enrollment and 3 percent of the secondary school enrollment. Although these students are enrolled in almost all of the schools in the district, they are concentrated in just a few.

Magnet School History

At the time that the 1998 MSAP grant was awarded, District A's magnet program was already well established, having been a key element of the district's desegregation plan since the mid-1980s. During three earlier grant cycles the district had been awarded three MSAP grants, with which it developed seven magnet school programs. All of these are still operating, although only four are supported by MSAP in the 1998-2001 grant. By 1998, therefore, the project could draw on district and school staff who were knowledgeable about the steps needed to establish and manage new magnet school programs. For instance, the MSAP project director had directed the district's federal

⁷ The K-12 statistic is drawn from the Common Core of Data (CCD)—the state suppresses high school statistics because high school students tend to underreport their eligibility.

and special programs for 20 years, and had become the magnet project director during the previous MSAP grant period.

According to the MSAP project director, the magnet schools are well regarded in the community. Local interest and support played a central role in the selection of the magnet themes. Each school has an advisory council of school and community members in which parents and other community representatives compose just over half of the membership. Themes were selected by the school staffs and their advisory councils, and then reviewed and approved by the district superintendent's cabinet and the school board. Once the themes were selected, the school faculties became heavily involved in the planning and implementation of the magnet programs. The MSAP project director believes that faculty involvement and buy-in have been a vital ingredient of the schools' success.

State Systemic Reform and District Reform Initiatives

Statewide assessments of student achievement are a major element in the systemic reform context in which District A's magnets operate. The state assesses students in selected grades each year using a combination of nationally normed standardized tests and criterion-referenced tests aligned with state standards. It also sets continuous quality improvement goals in reading, writing, mathematics, science, social studies, and career awareness for its schools. Schools are publicly "graded" each year based on their test scores and year-to-year gains. Low-performing schools (in the bottom two of the state grading system's five levels) are eligible for technical assistance and funding to support additional services for students, and are subject to sanctions if they do not show improvement within two years.

The overarching goal of District A's systemic reform agenda is to improve student achievement, particularly as demonstrated through performance on the above-mentioned state-administered achievement assessments. In pursuit of this goal, the district is aligning its curricula with the state's content standards (which were adopted in the mid-1990s) and promoting the implementation of research-based teaching and learning methods as well as increased use of technology in its schools. District A has established program objectives that directly correspond with MSAP's efforts to assist local education agencies in achieving systemic reforms: a model extended day program, professional growth and development, parental decision-making and involvement, and community involvement. These objectives are discussed in more detail below.

In addition, the district is working to reduce class sizes and to build multicultural awareness curricula. To support these improvements, District A and its schools have obtained funds from a variety of external sources including the federal MSAP grants and a technology grant.

Project Characteristics

Overview

The magnet schools in District A are part of a controlled choice desegregation plan in which all of the schools in the district potentially draw students from outside their immediate neighborhoods, and all attempt to develop and market distinctive identities. Nine schools have whole-school magnet

programs that are available to all of the students, however, and the MSAP grant supports four of them. Three of these magnet schools are in geographical areas and one is a districtwide magnet school. Two elementary schools (K-5) have mathematics, science and technology themes. An elementary school that currently serves grades 3-8, and is adding K-2, has an arts program, and the fourth magnet school is a comprehensive high school with a science, technology, and applied research (STAR) program. Administration of the programs is decentralized; the principal of each school is considered the key implementer and monitor of the program in his or her school.

In District A, magnet school programs are intended to further state and district reform goals of improving student achievement, particularly in language arts and mathematics. All schools are required to use standards-based curricula that have been developed for the district as a whole, and to show improved student performance on achievement tests. The objectives set by the MSAP project for its schools are the same objectives that have been set for them by the district, so it is not surprising that district and school administrators report that there is no tension between the goals of magnet schools and those of the district. Other district initiatives include infusing technology and multicultural education into the curriculum as well as providing additional support to at-risk students through in-school and after-school programs. MSAP funds allow magnet schools to devote more resources to such initiatives, or to be the first schools in the district to implement some of them, but few program elements are unique to the MSAP schools.

District-Level Staffing

The district allocates about seven percent of the MSAP budget to support magnet program operations at the district level. The MSAP staff includes the project director, a part-time evaluator, and a full-time secretary for the first two years of the grant. The management and execution of the district's student recruitment and assignment functions are handled by district staff who are not supported by MSAP funds. During the first year of the grant, the MSAP project director was the district's executive director of federal and special programs, a 20-year veteran in that role. Having become the MSAP project director during an earlier MSAP grant cycle, she was heavily involved in writing the 1998 grant application. She reported that directing the MSAP project (including regular meetings with the magnet school principals) accounted for a quarter of her time. After she retired in 1999, responsibility for the magnet program was taken over by two successive administrators within the district's curriculum department, and the administration of the project became more decentralized. The district uses a school-based management model, in which routine decisions about the operation of the schools are made at the school level, under the direction of the principals.

The district does not employ a magnet student recruitment specialist *per se*. The district information specialist is responsible for updating and producing the informational brochures and advertisements that the district disseminates each year to explain the school choice system and to describe the programs offered by each of the district's schools. The director of student assignment is in charge of school applications (including applications to magnet schools). She informs parents about their options, tries to direct them to schools that have programs that best match their children's interests and needs, and provides them with a descriptive brochure, sample schedule, and the name of a contact person for the school they choose. Her office then facilitates the final steps of the enrollment process by alerting the school contact person to expect the arrival of the parent at the school, where the application is completed.

Recruitment Issues and Strategies

The MSAP magnet schools compete for students with other public schools in the district—including both magnet and non-magnet schools that have advertised their distinctive characteristics—and about ten private and parochial schools, an online high school, and home schooling. District staff did not view the loss of students to nonpublic schools as a serious threat to the desegregation program or the quality of the students who are attracted to the magnet schools. They believe that the steadily growing school population and the magnet schools' demonstrated attractiveness to local parents are sufficient in themselves to maintain strong student bodies in the magnets. Parent satisfaction with the programs seems to be borne out by the fact that none of the students enrolled in the MSAP magnet schools have requested to transfer to another school in the district. The MSAP project director reported, "It is a real rarity for students to leave magnet schools; they only leave a magnet school when they move to another district."

Outreach efforts are addressed to a districtwide audience rather than focused on particular groups of students. The district has used a wide variety of methods to inform residents about their schools, including the following:

- Publication of brochures.
- Presentations by administrators, counselors, teachers, and students.
- School tours for parents and realtors.
- Internet sites.
- Mailings and phone calls to parents.
- Advertisements in local newspapers.
- Stories on the school board's television channel.

Information about schools presented in brochures and Web sites includes curricular emphases; special programs (e.g., after-school and mentoring activities); and grants, awards, and recognition received by the schools and their staff. Magnet program staff reported that the most effective methods for attracting new students are word of mouth and the free space offered by the local newspaper, which annually publishes an explanation of the controlled choice system, produces a pullout section describing the distinctive features of each of the district's schools, and occasionally publishes stories about school activities and outstanding students. Paid advertisements, an informational videotape, brochures, and flyers are found to be the least effective.

Desegregation Plan and Objectives

At the time that they applied for the 1998 grant, District A had been developing magnet programs as part of their desegregation effort for well over a decade. The district operated under a court-ordered desegregation plan between 1984 and 1997, and since then has maintained a voluntary school choice plan. In both phases, magnet programs have been used to encourage students to enroll in schools outside their immediate neighborhoods. The district is divided into three geographical areas, each of which encompasses both high- and low-minority neighborhoods, and in which the overall student and staff ethnic compositions approximate those of the district as a

whole. Residents may apply to enroll their children in any school within their own geographical area or in one of five schools that draw students from throughout the district. Through the development of attractive programs in its schools, the district hopes to encourage minority and nonminority students within the district to enroll in schools outside their immediate neighborhoods and thus to reduce minority group isolation, particularly in schools that have the highest concentrations of minority students. Nine schools are designated as “magnets,” including the five that draw their students from the district as a whole and four that draw students from within a geographical area.

Students may apply to attend any school within their geographic area as well as any districtwide magnet appropriate to their grade level.⁸ Information about magnet schools is mailed to parents in January, and vacancies are generally filled by the end of February. Waiting lists for the magnet schools are ordered by date of application. There are no special requirements (such as examinations, interviews, grades, or recommendations) for admission to any of the MSAP-funded magnet schools, although two of the non-MSAP “academic” magnets have academic requirements that exceed those of other district schools. The MSAP project director reported that there were no students on the waiting list for MSAP magnets in 1999-2000, but in 2000-2001, 15 students who were on a waiting list for admission to the arts magnet were subsequently admitted.

One districtwide magnet school (MSAP elementary school No. 3) and three magnet schools in geographical areas are supported by the MSAP grant. All are located in high-minority neighborhoods and have minority enrollments exceeding the average percent minority of their area and the district overall. The schools also report high but varying percentages of students in poverty as well as high student mobility. One school has the highest percentage of limited English proficient students in the district.

The District’s MSAP programs were only partially successful in reducing minority isolation. During the four-year period from 1997-1998 to 2000-2001, two out of the four MSAP magnets in District A were able to prevent or reduce minority isolation. The districtwide Performing Arts

Minority Group Isolation. *The district’s MSAP programs were partially successful in meeting their desegregation objectives. Two of the four MSAP magnet schools prevented or reduced minority group isolation.*

magnet succeeded in preventing minority isolation by keeping minority enrollments below 50 percent. One of the geographically assigned

elementary school magnets reduced minority isolation. The percent minority enrollment at the other two geographically assigned MSAP magnets, one an elementary and the other a high school, increased more rapidly than the districtwide increase.

⁸ Applications for non-magnet schools are collected and vacancies filled during three application cycles each spring. Parents who apply during the earlier cycles are more likely to receive their first choice of school than parents who apply later; about 80 percent receive their first or second choice.

The Role of the MSAP Project in Support State Systemic Reform and Other District Initiatives

During the three-year grant period, the efforts of District A's Curriculum Department focused on aligning the district's curricula with the state content standards, the state achievement assessments, technology, and curriculum mapping. To support state and district reform initiatives and to provide students the opportunity to meet challenging state content and performance standards, the MSAP project has incorporated the following districtwide objectives into its systemic reform objectives for all magnet schools:

- A model extended day program.
- Professional growth and development.
- Parental decision-making and involvement.
- Community involvement.

The MSAP project implemented a research-based action design for an extended day program that incorporates best practices that contribute to district and state systemic educational reform efforts. Curriculum was restructured with emphasis on state standards and on technical and instructional specialists who are available to the schools to collaborate with parents and students on instructional design and delivery. Second, a comprehensive professional development model was designed to provide administrators and staff at the MSAP schools with essential knowledge and skills to provide all students the opportunity to meet the state content standards and state performance standards. A third objective was to increase and intensify the participation of parents in the educational achievement of their children who are enrolled in MSAP schools. Finally, MSAP's objective was to develop collaborative partnerships with community-based agencies, organizations, businesses and institutions in an effort to maximize the utilization of available resources and services for K-12 students in the MSAP schools.

To support improved student learning, the MSAP project is also focusing on creating a disciplined learning environment (fostering positive social interaction and self-directed behavior) and infusing technology and multicultural education into the curriculum. The MSAP grant has enabled the magnet schools to give greater emphasis to these endeavors than some of the other schools in the district, particularly in terms of adding staff specialists and purchasing computers and software.

Student Achievement

The MSAP project in District A based its achievement objectives for students in grades K-2 on teacher-assigned ratings (report card grades), and for students in grades 3 through 12 based on state

Achievement outcomes. *District A's student achievement objectives for students in grades 3 through 12 were based on state assessments. Results were mixed. The elementary schools met goals for increasing performance on norm-referenced tests in mathematics, science, and social studies, and on a criterion-referenced writing test. However, they showed mixed results on criterion-referenced tests in mathematics and reading, and generally poor results on a standardized test of reading comprehension. The high school met its goal for writing but not for reading and mathematics.*

assessments. District A uses their state's nationally normed standardized test in four core subjects as well as criterion-referenced tests at selected grades in reading, mathematics, and writing. Goals were also set for the percentage of students who were promoted to the next

grade each year and whose responses to an informal interest inventory indicated widening interest in, and a positive attitude toward, vocational careers.

For two schools serving students in grades K-2 (not included in the state assessment system), project objectives called for increasing percentages of students to be rated "satisfactory" in several grade-specific performance areas. Early in the grant, the performance targets for 2000-2001 were reset to the same level as for 1999-2000. With one exception, students in each school met some of these benchmarks each year; the exception was at the kindergarten level, where in the first year of the grant, students in both schools met all of the benchmarks.

The three schools serving students in grades 3-7 had mixed success in meeting MSAP project targets. Objectives called for 3 percent increases by spring 2001 in the percentage of students scoring in the upper five stanines of a norm-referenced test in core subjects. In 1999, all three of the elementary schools began with small percentages of students scoring in the desired range, and by spring 2000, all three had greatly exceeded the end-of-grant goal for mathematics, science, and social studies. However, by spring 2000, none of the schools had met a goal of a 5 percent increase in the proportion of students proficient in reading comprehension; in fact, most grades in all schools showed substantial decreases between spring 1999 and spring 2000.⁹ Performances on the state's criterion-referenced tests were also mixed, with one elementary school meeting goals for a 3 percent increase in students proficient in reading and mathematics tests by spring 2001, one school meeting the goal for mathematics, and one meeting neither goal. However, by spring 2000, all three schools had exceeded the goal of a 5 percent increase in students scoring at proficient level on the state's writing test by spring 2000. The one elementary school that met goals for all three subjects assessed by the state's criterion-referenced tests also increased its ranking in the state's accountability system from a "D" to a "C" during the grant period while the other schools maintained their rankings of "C" or "B."

⁹ The goals called for gains in language arts, mathematics, science and social studies by spring 2001. By the end of the grant period, 2000-2001 scores on the norm-referenced tests were still unavailable, and language arts data were only available for one year. Consequently, we are unable to determine if the gains in mathematics, science, and social studies through spring 2000 were sustained to the end of the project, or if the schools were able improve their results for reading comprehension by the end of the grant.

The high school magnet did not meet any of its goals for increases in the percentage of sophomores and juniors scoring at proficient level on the state's criterion-referenced tests in reading and mathematics but did meet the goal for increases in the percentage of proficient writers.

Promotion data, available only for one year for the three elementary schools, showed all three meeting an end-of-project goal of a 90 percent promotion rate in the first year of the grant. Data from the vocational interest inventory indicated that the schools met their goals for increasing proportions of students expressing interest and positive attitudes on the school survey.

Professional Development

District and school administrators discussed two areas of training that have been particularly important to the MSAP schools: addressing the needs of diverse students and incorporating technology into classroom instruction, planning, and record-keeping. Teachers and staff in MSAP schools receive training on how to embrace and celebrate diversity inside and outside of the classroom, as well as on strategies for teaching English for Speakers of Other Languages (ESOL). In particular, information about the learning styles embedded in different cultures is discussed and utilized. Some of the training is provided by the district's professional development office, service providers hired by individual schools, and at state conferences attended by staff and administrators. In addition, teachers at each school are important resources for their peers. Staff members who are experienced in working with students of different racial and socioeconomic backgrounds train their colleagues on the best methods for understanding the students and teaching them effectively. Some of the staff members have learned these methods through graduate school courses, while others have experience, such as teaching in or directing specialized programs designed to reach students of varying backgrounds. Participation in many of these professional development activities is above and beyond what is required by the district, but MSAP staff participate nonetheless, believing that it is necessary to become truly effective in their classrooms.

The use of technology is another major focus of professional development throughout District A. The district has surveyed its teaching staff about their levels of experience with technology and has organized its training program accordingly. Most schools have staff members who focus on upgrading and maintaining hardware and software in their buildings. The district, in collaboration with some school-based personnel, takes charge of introducing new software and providing training on how to use it. Two of the MSAP schools are involved in a partnership with a local university through which their teachers receive training and technical assistance beyond what the district is able to offer.

The MSAP magnets are in the forefront of this modernization effort, as they have made substantial investments in new computers, integrated technology into their curricula, and hired or reassigned specialized staff to support the process. Professional development in technology, which varies from school to school, includes training in basic computer applications such as Microsoft Word and PowerPoint, incorporating Internet activities into classroom instruction, and using a curriculum management package being introduced throughout the district that allows teachers to make their own tests, scan and print out results, and track students' progress.

Training in the magnet schools in District A had also taken place on a variety of topics including the state content standards, curriculum alignment with the standards, the state achievement tests, and performance-based assessments.

Innovative Practices

District staff described several school-specific innovative practices that are made possible by the magnet program's provision of material and human resources. One elementary school's program of adult mentoring for students strengthens community involvement in the school and gives students extra help in reading and other academic work. The strong technology program in the other elementary school attracts many visitors interested in how the program has been implemented in classrooms. The school development of a Seniors Online program allows magnet students to show visiting senior citizens how to use computers. The arts program in a third elementary school uses newly purchased equipment that allows students to showcase their talents in the community, and the high school's technology-based courses and career academies are being emulated by other local high schools.

School Level Programs and Activities

This case study describes findings from site visits to District A in spring 2000 and spring 2001, and focuses on four of District A's MSAP schools: three elementary schools and one high school. Two non-magnet comparison schools—an elementary and a high school—were also part of the case study visits. Student focus groups, with five to six students, were conducted in one MAP-supported elementary school and in the MSAP-supported high school.

Overview of Elementary Schools

At the elementary level, AIR focused on three MSAP-supported schools and one comparison school.

MSAP Elementary School No. 1	MSAP Elementary School No. 2
<p><i>MSAP School Theme:</i> Mathematics, Science, and Technology Grade Levels: PK–5 Student Characteristics Number of Students: 603* Race-Ethnic Breakdown of Students:</p> <ul style="list-style-type: none"> • Hispanic: 31.7% • White: 24.2% • Black: 43.5% • Asian/Pacific Islander: 0.6% • Am Indian/Alaska Native: 0% <p>Percent Free/Reduced-Price Lunches: 65.5% Teacher Characteristics Number of FTE Teachers: 42 Race-Ethnic Breakdown of Teachers:</p> <ul style="list-style-type: none"> • Hispanic: 1.8% • White: 51.8% • Black: 46.4% • Asian/Pacific Islander: 0% • Am Indian/Alaska Native: 0% <p>5+ Years of Teaching: 42.9% Newly Hired: 28.6% School and Neighborhood Characteristics</p> <ul style="list-style-type: none"> • Recently renovated • Good condition 	<p><i>MSAP School Theme:</i> Mathematics, Science, and Technology Grade Levels: K–5 Student Characteristics Number of Students: 608 Race-Ethnic Breakdown of Students:</p> <ul style="list-style-type: none"> • Hispanic: 13.2% • White: 47.4% • Black: 37.7% • Asian/Pacific Islander: 1.5% • Am Indian/Alaska Native: 0% <p>Percent Free/Reduced-Price Lunches: 63.7% Teacher Characteristics Number of FTE Teachers: 37 Race-Ethnic Breakdown of Teachers:</p> <ul style="list-style-type: none"> • Hispanic: 6.1% • White: 53.1% • Black: 40.8% • Asian/Pacific Islander: 0% • Am Indian/Alaska Native: 0% <p>5+ Years of Teaching: 38.8% Newly Hired: 6.1% School and Neighborhood Characteristics</p> <ul style="list-style-type: none"> • Adequate condition • Needs some renovation
MSAP Elementary School No. 3	Comparison Elementary School
<p><i>MSAP School Theme:</i> School of the Arts Grade Levels: 3–8 Student Characteristics Number of Students: 332 Race-Ethnic Breakdown of Students:</p> <ul style="list-style-type: none"> • Hispanic: 5.7% • White: 59% • Black: 35.2% • Asian/Pacific Islander: 2% • Am Indian/Alaska Native: 0% <p>Percent Free/Reduced-Price Lunches: 36.1% Teacher Characteristics Number of FTE Teachers: 17 Race-Ethnic Breakdown of Teachers:</p> <ul style="list-style-type: none"> • Hispanic: 4.8% • White: 66.7% • Black: 28.6% • Asian/Pacific Islander: 0% • Am Indian/Alaska Native: 0% <p>5+ Years of Teaching: 14.3% Newly Hired: 14.3% School and Neighborhood Characteristics</p> <ul style="list-style-type: none"> • Historically important 86-year old building • Recently renovated 	<p><i>School Theme:</i> None Grade Levels: K–5 Student Characteristics Number of Students: 671 Race-Ethnic Breakdown of Students:</p> <ul style="list-style-type: none"> • Hispanic: 19.2% • White: 38.8% • Black: 41.3% • Asian/Pacific Islander: 0.8% • Am Indian/Alaska Native: 0% <p>Percent Free/Reduced-Price Lunches: 67.1% Teacher Characteristics Number of FTE Teachers: 36 Race-Ethnic Breakdown of Teachers:</p> <ul style="list-style-type: none"> • Hispanic: 4.2% • White: 68.8% • Black: 27.1% • Asian/Pacific Islander: 0% • Am Indian/Alaska Native: 0% <p>5+ Years of Teaching: 56.3% Newly Hired: 25% School and Neighborhood Characteristics</p> <ul style="list-style-type: none"> • Well-maintained • Good condition

*Data are from 1999-2000 school year

MSAP elementary school No. 1 is one of the two elementary magnet schools in geographical areas that are supported by the MSAP grant. Improving student achievement is a salient issue at this school, which has a substantial mobility rate of 40 percent, a high proportion of students in poverty and with limited English proficiency, and among the lowest test scores in the district. The school took measures to improve student achievement, including reducing class sizes, implementing mentoring programs, and intensifying work with limited English proficient students. By the end of the MSAP grant, elementary school No. 1 had been recognized by the state for its progress in improving student performance on the state assessment.

MSAP elementary school No. 2 became a magnet school for the first time during this MSAP grant cycle. Although it is located fairly close to elementary school No. 1, it is in a different geographical area. The school's extensive use of technology has attracted much publicity and interest over the course of the MSAP grant. All instruction is provided in mixed-ability classrooms.

MSAP elementary school No. 3 is a new districtwide magnet school that serves grades 3-8 with a performing arts theme. The recently renovated school is designed for 700 students but currently serves about half that number. Elementary school No. 3 is adding a grade level every year until it is fully populated as a K-8 school. The building has a dance studio, an art gallery, a 625-seat auditorium, and a music room.

The principal ensures within-school desegregation by hand-assigning students to classrooms. The results of his efforts are apparent in the classrooms, all of which contain a mix of races. The administrators, teachers, and other school staff also reflect the district's overall ethnic composition.

The **comparison elementary school** is quite similar to MSAP elementary schools No. 1 and No. 2 in terms of student demographics. Through acquisition of different grants in the past, this school increased its technology resources and capabilities, thereby reducing the difference between it and the MSAP-supported schools in the quality and availability of technology.

Program, Themes, Goals

The MSAP-supported elementary schools described in this case study are distinctive both in their evident themes, focus on multiculturalism, technological resources and professional development activities, which translate into numerous activities outside of the classroom.

School themes

MSAP elementary school No. 1 adopted a mathematics, science, and technology theme that extends and enhances a multimedia theme that had been introduced during a previous MSAP grant cycle. The school also features a multicultural curriculum, enhanced literacy instruction, individual mentoring of students by community members, and a program designed to promote productive social and academic behavior in students. In order to provide students with more instructional support, the school used MSAP and Title I funds to reduce class sizes from 25 (the typical size for District A) to 18 beginning in 1999–2000. The school also began use of a one-on-one adult mentoring program to assist students who had low achievement scores.

In the past, elementary school No. 1 operated a Center for English Speakers of Other Languages (ESOL) that served the area's ESOL and migrant populations. Although the center no longer exists, families served by the center still feel comfortable sending their LEP children to this school. This is because the school retains many of the center's characteristics. About 21 percent of the school's students have limited English proficiency. Every teacher in the school is either ESOL-certified or working toward certification, and many staff are bilingual. All of the teachers in the comparison elementary school have also earned ESOL certification in order to address the needs of their students.

Elementary school No. 1's priorities center on improving students' reading and mathematics scores on state assessments. (At the beginning of the grant period, the school was identified as a low-performing school in need of immediate improvement by the state's accountability system.) The school uses district-developed and supplemental curricula in language arts and mathematics, which include additional assessments that monitor students' progress during the year. Teachers seek ways to enhance instruction and assessments in these two critical subject areas while integrating mathematics and science across the curriculum and using technology in daily instruction.

Like elementary school No. 1, MSAP elementary school No. 2 adopted a mathematics, science, and technology theme and uses separate

Lab activities. Elementary school No. 2 uses separate mathematics, science, and technology labs. Each has a full-time, MSAP-funded coordinator who works with individual teachers to enhance students' understanding of each of these subjects through activities that augment regular classroom instruction.

mathematics, science, and technology labs, each with full-time, MSAP-funded coordinators to distinguish itself from other schools. The three lab coordinators work with individual teachers to enhance students' understanding of each of these subjects through activities that augment regular

classroom instruction. Each of the three labs is supplied with materials and resources that address a variety of learning styles. These materials include:

- For the *Math* lab, mathematics manipulatives, computers with interactive mathematics software, mathematics games and exercises, televisions, videocassette recorders, and a listening center with headphones.
- For the *Science* lab, a variety of animals (both alive and dead) such as freshwater and saltwater fish, spiders, frogs, insects, mice, and snakes; posters of science in everyday life; displays of bird and small mammal bones, reptile skins, and other items; and computers, books, and magazines on numerous science topics.
- For the *Technology* lab, 35 computers with approximately 18 different software programs. The lab coordinator introduces all aspects of computer usage to students and teaches them how to use the computer, Internet, and a variety of software programs.

Each week, all classes in all grades are scheduled to spend at least one hour a week in each of the labs receiving instruction beyond what they receive in their regular classrooms. Five elementary students in a focus group said that they would like to have more than one hour a week in each of the labs. Teachers or students can also schedule extra time in the labs for additional

assistance. Classroom teachers can either use the lab time as a planning period or assist the coordinator in the lab. A tremendous amount of energy seems to be devoted to the three labs; the school schedule is built around them and they create an innovative atmosphere at the school. The labs are integral to instruction throughout the school, and they are used daily by different classes of students. The students in the focus group generally enjoyed the labs, but felt that they didn't have anything to do with their regular class time.

In terms of science specifically, the lab coordinators at both MSAP schools dedicate their time to strengthening the science programs in their schools and district by developing year-long curriculums for each grade level that take a hands-on approach to learning. At the time of the site visit, the district did not test science as a core subject but was to do so in two years. The lab coordinators were confident that the results of the initial testing year would show that this hands-on approach to science is valuable to students' learning. Both coordinators hope that their students will show a much higher level of scientific thinking in their individual schools than other students in the district and state.

MSAP elementary school No. 3's magnet theme is performing arts, which encompasses visual arts, music, dance, and drama. Its integration of arts and academics fulfills the community's long-

***Arts as instruction.** Elementary school No. 3's theme is performing arts, which encompasses visual arts, music, dance, and drama. Its integration of arts and academics fulfills the community's long-standing desire for a magnet school of the arts. The principal and teachers explain that the rationale behind using the arts as an instructional strategy is their ability to address students' multiple intelligences.*

standing desire (dating back to the first exploration of potential themes in the mid-1980s) for a magnet school of the arts. The principal and teachers explain that the rationale behind using the arts as an instructional strategy is their ability to address students' multiple intelligences. The school has a student-centered

instructional approach and it fosters a sense of belonging to a community. The school program provides the same curriculum as other schools in the district and provides ample attention to state standards and state assessments, but it uses music, art, drama, and dance as vehicles for instruction. There is a clear relationship between elementary school No. 3's theme and the resources purchased with MSAP funds. About 60 percent of the MSAP budget funds the salaries of two arts specialists—the music and drama teachers.

The comparison elementary school quite closely resembles MSAP elementary school No. 1 and No. 2's themes because the principal acquired funding from an alternative source in the past that allowed him to successfully implement a mathematics, science, and technology theme. It is worth noting, however, that all principals stress the important role that the additional funding—regardless of its source—plays in the success of a school's program.

Focus on multiculturalism

A pervasive element in elementary school No. 1 which is also present in elementary school No. 2 and in the comparison school is a focus on multiculturalism. Students at elementary school

“Around the World” fair. Preparation for the fair begins early in the school year when each classroom selects a country or state to investigate. The students study the place throughout the school year and display what they have learned on posters and in other art projects and written assignments. The year-long project culminates in an evening in the spring when students, parents and the community are invited to the school to take a “world tour” and learn about other cultures.

No. 1 produce an annual “Around the World” fair. Preparation for the fair begins early in the school year when each classroom selects a country or state to investigate. The students study the place throughout the school year and display what they have learned (e.g., about food, climate, history, exports) on posters and in other art projects and written assignments. The year-long project culminates in an evening in the

spring when students, parents and the community are invited to the school to take a “world tour” and learn about other cultures. Multiculturalism is also a focus during Black History month and Hispanic Heritage month. In addition to these special events, students have access to books representing many different countries and written by a variety of authors.

In addition to its attention to its magnet theme of mathematics, science, and technology, elementary school No. 2 also has a multicultural focus, which is integrated throughout the curriculum. The multicultural curriculum is intended to develop a thorough understanding of and appreciation for the various cultures present at the school and throughout the larger community. The notion of strength in diversity is articulated clearly within the school, and each class seems to address the issue in a positive light. Whether through books and stories featuring characters of different racial, ethnic, and socioeconomic backgrounds, student plays and presentations, or discussions about the foods and cultures of different people, the classes we observed demonstrated a respect and appreciation for diversity. Students seemed quite comfortable talking about different people’s backgrounds and asked questions openly.

Like MSAP elementary school No. 1 and the comparison elementary school, elementary school No. 2 celebrated multiculturalism through a multicultural festival at the end of the academic year. Teachers and students in each classroom had chosen a country to represent at the festival as well as the manner in which they would represent it. Some classes made and displayed traditional toys or ornaments from their respective countries, while others wore the traditional clothes of the country they had chosen. Some classes made food from around the world, while others produced skits depicting daily life in different countries. The schoolwide celebration of diversity, which occurred during AIR’s site visit, involved all students, teachers, administrative and clerical staff, as well as parents and guardians. It appeared to be a great success, as all students were able to see each other’s work and taste traditional foods from many countries. The students seemed proud of their work, and the staff and parents were openly proud of them.

An annual “Spring Fling” recital was held in elementary school No. 3’s auditorium at the time of one of the site visits. The event was well attended by proud family members, teachers, and

community members. The talent level of the recital participants seemed exceptional to the observer, who had to remind herself that the performers were third- to eighth-grade students.

Technology

To achieve its achievement objectives, MSAP elementary school No. 1 houses several computers in each classroom while also operating a technology lab and a math and science lab (each staffed by a resource teacher and a paraprofessional) in which classroom learning is reinforced. The lab coordinator commented that the grant has enabled the school to “bridge the technology gap” by providing its large population of economically disadvantaged and minority students with access to computers that they have little chance of accessing outside the school. The technology lab coordinator, for instance, keeps electronic copies of all of the teachers’ lessons so that when students work in the technology lab they can be assigned activities (in particular, software programs that provide students with practice in reading and mathematics) that supplement the work that they are doing in their regular classrooms. Based on AIR’s observations in elementary school No. 1, technology appears to be fully integrated with daily instruction and students appear to be comfortable with, and accustomed to using, computers.

Student-run broadcasts. *Morning announcements are broadcast over closed-captioned television. A small group of fifth-grade students produce and anchor the daily broadcast. An adult supervises the production, but the students are so capable that they run each broadcast virtually independent of adult intervention.*

Not only is the technology theme integrated into classroom instruction in elementary school No. 1, it is also a part of the students’ overall school experience. For instance, the morning announcements are broadcast over closed-captioned

television. A small group of fifth-grade students produce and anchor the daily broadcast. An adult supervises the production, but the principal stresses that the students are so capable that they run each broadcast virtually independent of adult intervention.

MSAP funds enable elementary school No. 2 to release one of the school’s existing classroom teachers on a part-time basis to assist the technology lab coordinator in ensuring the proper functioning of all computer hardware and software in the school. Students in higher grades have access to more software programs because they are already knowledgeable about computer use. Younger students often receive their introduction to computers in the technology lab. Students in the focus group generally liked working in the computer lab and they liked that there were a lot of games that made the work “more fun than normal.”

The lab coordinator also works closely with teachers in the school to determine which students need extra practice in specific areas, especially in language arts. Some of the software programs focus on phonetics and language acquisition, which help limited English proficient students. In addition, MSAP funds are used to purchase a variety of software packages, both for instruction in language arts, mathematics or science and for teachers to use in curriculum management. One of the latter packages is the A-plus system, a software package used by teachers and paraprofessionals to assess students, store data from the assessments, produce needs-assessment reports, and track student growth over the school year.

Using technology. *In one school, MSAP funds have been used to purchase equipment and instructional resources: 20 microphones and headsets, a CD and tape player for every classroom, art textbooks, art materials (e.g., paints, slides, videos), hands-on manipulatives, multi-tiered risers for the stage, various instruments for use within school, and a mixing board and speakers in the auditorium.*

In elementary school No. 3, MSAP funds have been used to purchase equipment and instructional resources: 20 microphones and headsets, a CD and tape player for every classroom, art textbooks, art materials (e.g., paints, slides, videos), hands-on manipulatives, multi-tiered risers for the stage,

various instruments for use within school, and a mixing board and speakers in the auditorium. The principal explains that he encourages his staff to buy top-of-the-line equipment to last throughout the years (even after MSAP funding ends), rather than purchasing more equipment at budget prices that would likely deteriorate rapidly.

The comparison elementary school has purchased resources similar to those found in the magnets, including mathematics and science manipulatives for students at different grade levels, 60 new classroom computers, and approximately 24 computers for a new computer lab. Thus, because the comparison school has used special funds to build its own mathematics, science, and technology program, it resembles the MSAP-supported schools rather than contrasting with them due to a lack of technology.

Professional development

To implement the themes successfully, the MSAP-supported elementary schools provide a great amount of professional development to staff. Staff and administrators of elementary school No. 1 mentioned a variety of professional development activities that occur because of the MSAP grant. Training in pedagogical methods—in mathematics and reading, for example—is credited with increasing the amount of hands-on activities that teachers are building into their instruction, and ultimately with helping to improve the students' achievement. A good portion of the training also focuses on developing staff proficiency in using computers, the Internet, and computer software, for classroom instruction, assessment, and performance tracking. All of the teacher survey respondents from elementary school No. 1 report having received training in the instructional uses of technology.

In elementary school No. 2, all teachers receive at least 40-45 hours of professional development each year to strengthen their teaching strategies and interactions with students. The school's professional culture encourages teachers to take advantage of as many professional development opportunities as they can. Staff development activities take place both at the school and off-campus, and are directed by school staff members as well as external experts. In addition to providing informal classes during their own prep periods and after school, teachers monitor each other's classes to allow colleagues to attend off-campus professional development activities.

The MSAP funding allows the teaching staff at elementary school No. 3 to further the program goals in a variety of ways. Some of the MSAP funds are used to help teachers obtain ESOL and Gifted

and Talented Education (GATE) certifications.¹⁰ The two MSAP-supported staff (performing arts teachers) not only teach their own classes, but also serve as resources for their colleagues, consulting with them about ways to integrate the arts into their regular instruction of the core curriculum. Professional development opportunities outside the school have given the staff additional support in integrating arts into the curriculum. For example, one teacher reported that she attended a workshop on integrating arts and literature.

In contrast, professional development at the comparison elementary school often relies on in-house informal activities because funding for activities led by professional staff is not as readily available as it is with the MSAP-supported schools.

Activities outside the classroom

Beyond the magnet themes, the MSAP elementary schools maintain several other educational programs that boost the efforts of the MSAP themes, and that are readily apparent to visitors. For instance, elementary school No. 1 voluntarily adopted the federal program Project Achieve to build an environment that supports learning and constructive social behavior among students. Project Achieve posters, which espouse positive thinking and behaviors, are displayed throughout the school—from the front office to every classroom. Teachers remind students to act according to the Project Achieve philosophy, particularly in situations where students act inappropriately. For example, by a teacher simply pointing to a Project Achieve poster, a student who regularly interrupts other students during instruction is reminded to respect others' opinions and wait his turn to be called on. This student, like others in the school, accepts this corrective action without questioning or arguing his or her case. In another classroom, a teacher praises a student for voluntarily following the behaviors listed on the Project Achieve poster. To the classroom observer, the ease with which the teachers and students resonate with the ideas promoted by Project Achieve suggest that the principles had become a natural part of the students' overall instruction, and the everyday life of the school.¹¹

Elementary school No. 3's regular curriculum is also augmented by programs provided through the efforts of interested community members. Some volunteers visit the school to read to students in their classrooms. In addition, local professionals volunteer their time to conduct arts workshops, enabling the school to offer many after-school programs (for example, music and dance classes) for students who are interested in learning the performing arts. Thus, students have ample opportunity to learn about the arts, not only through the arts integrated into the regular curriculum, but also through activities designed to teach them the performing arts that resonate with their personal interests.

¹⁰ Although the school's enrollment does not currently include students with limited proficiency in English, ESOL certification is required of all teachers in the state.

¹¹ The comparison school also adopted the Project Achieve program, which was much in evidence in the classrooms we observed.

Community involvement. *One elementary school introduced a program called “Help One Student to Succeed” that assigns community members and high school students to work with students in grades two through five. Records for each child are kept indicating in what areas the student needs extra work. Mentors read, write and play educational games with their students to help strengthen their skills. The program has now been adopted by several other elementary schools in the district.*

records are kept indicating in what areas the student needs extra work. Mentors read, write and play educational games with their students to help strengthen their skills. The program has now been adopted by several other elementary schools in the district.

An additional program in elementary school No. 1 is the supplemental support provided to students through a community mentoring program. This school is one of the first in the district to introduce a program called “Help One Student to Succeed” that assigns community members and high school students to work with students in grades two through five. For this program a folder for each child is maintained in which

Approximately 200 students in elementary school No. 1 are involved in two other after-school programs that are designed to strengthen students’ academic skills that operate two hours a day, four days a week. Both elementary schools No. 1 and No. 2 use the after-school Voyager program and Failure Free Reading. Voyager is a hands-on “adventures” program designed to involve students in reading, writing and mathematics (for example, building a model space shuttle and a car out of cardboard). Both programs include a technology component.

School Instruction and Activities

Diverse instructional materials. *Reading Renaissance activities are readily apparent in every classroom. The system is installed on the school’s intranet so that students have access to the program in every classroom. Because of the schoolwide connection and the teachers’ commitment to improving their students’ reading ability, there is essentially no real down time in the students’ daily school experience.*

curriculum, designed to improve reading skills by reinforcing lessons taught in regular classroom instruction, consists of a series of grade-leveled books and accompanying diagnostic software. During “down time” in reading classes, students either read a book of their own choosing or work on computer-generated reading lessons independently or under their teacher’s direction. When students are finished reading a book, they take a computer-administered test on it and the software generates diagnostic scores summarizing students’ reading skills and progress. Reading Renaissance activities are readily apparent in every classroom. The system is installed on the school’s intranet so that students have access to the program in every classroom. Because of the schoolwide connection and the teachers’ commitment to improving their students’ reading ability, there is essentially no real down time in the students’ daily school experience. The students seem to enjoy “playing” the computer reading “games” and reading their self-selected books.

Elementary school No. 1 offers several examples of the magnet theme (particularly technology) being integrated into reading and mathematics instruction, across the grades and classrooms. For instance, students spend a considerable amount of time working with Reading Renaissance, a nationally marketed instructional package that is used in several District A schools. This

Mathematics classes in both elementary schools No. 1 and No. 2 use computer-delivered practice and problem-solving activities to enhance instruction. Classroom instruction at both schools utilizes a “centers” approach to most instructional exercises, whereby students are divided among a few small groups to work on different tasks. While computer-related activities are almost always one center in each of the classrooms in both schools, all teachers stress that the software is used to reinforce regular classroom instruction, not replace it.

Teachers in both elementary school No. 1 and No. 2 report that they also use manipulatives purchased with MSAP funds to reinforce mathematics and science concepts in their regular instruction. As examples, students use beans to understand addition and subtraction, paper pie shapes to understand fractions, and plastic cups to understand measurement. Some teachers use flash cards and color paper shapes to help students understand geometric terms, and compasses and magnets to illustrate scientific topics. In one of the kindergarten classes in elementary school No. 1, students worked with a variety of manipulatives (e.g., cork, rocks, and blocks) to learn which objects float in water and which sink to the bottom. Students also have available to them books about various science topics and learning kits about the rain forest, batteries, and insects.

Both MSAP elementary schools No. 1 and No. 2 also utilize a “centers” approach during their time in the mathematics, science, and technology labs, depending on the specific needs of the students. The lab coordinators ensure that each student is working on an assignment at the appropriate level of difficulty and that all students remain on task. Students engage in a variety of lab activities, including being guided by a cassette tape to read a story and solve story-related problems, working through various stages of software applications on computers, learning probabilities by playing mathematical or reasoning games, engaging in assessments, and dissecting insects and reptiles. Students seem to like being in the labs and appear to find the resources an enjoyable means to learning lessons. Students in the focus group were critical of the math lab and felt that they didn’t learn anything from their lab activities.

In elementary school No. 2, the science lab is filled with computers, books, and magazines on numerous science topics. Students are able to engage in a truly hands-on approach in the lab. The students in the focus group described their time in the science lab as the best part of their school

Infusion of arts theme. *In a sixth-grade mathematics class, students not only learned about angles and degrees in a traditional way, the mathematics teacher also has them perform with a dance partner. The teacher directed the students’ dance movements by calling out angles in which their arms should be and numbers of degrees that they should turn. Thus, dance is integrated with mathematics instruction so that kinesthetic learners and students who learn best from traditional instruction will have comparable opportunities to learn the concepts.*

experience. A visit to the science lab found students working in four workstations, learning about the life cycle of small birds. From researching the life activities of these birds on the Internet, to comparing size, shape and feel of different bones of various small birds, to reading about the food intake of each bird,

the handful of students at each workstation allowed for more give-and-take of questions and answers with the teacher. Likewise, in elementary school No. 1 the lab included students’ 3-D dinosaur projects, plants, science books, discovery kits on senses, color, light, the human body, and

water; and learning kits on the rain forest, batteries, and insects. Some students at the centers were studying the science of transportation-related issues while others solved mathematical problems needed to understand how science functions in transportation.

The content of elementary school No. 3's curriculum is the same as that offered in other schools in the district, but the arts are incorporated as an instructional strategy to facilitate the learning of students with diverse learning styles. For example, in a sixth-grade mathematics class, students were not only learning about angles and degrees in a traditional way, but the mathematics teacher also had them perform with a dance partner. The teacher directed the students' dance movements by calling out angles in which their arms should be and numbers of degrees that they should turn, (e.g., 360 degrees or 180 degrees). The teacher then counted out the steps and directed the students to move in a circle or square and bow at a right angle. Thus, dance was integrated with mathematics instruction so that kinesthetic learners and students who learn best from traditional instruction had comparable opportunities to learn the concepts.

The principal at the comparison elementary school has obtained funds from alternative sources and implemented a program that closely resembles the programs in the two MSAP-supported elementary schools with mathematics, science, and technology themes. The comparison school operates a Reading Renaissance program with the same intensity exhibited in elementary school No. 1. In addition, the principal and teachers in the comparison school parlay the school's focus on reading into a schoolwide game that students play throughout the academic year. Books are assigned a point value based on their difficulty for students at each grade level. Students set a goal for the number of points they will earn by the end of the school year, and throughout the year they are urged on by the teachers to reach their goal. As an incentive, the principal promises to participate in a silly prank if the students are successful. (Consequently, at the end of one school year he had to kiss a pig, and another year he got a pie in his face.)

Overview of Secondary Schools

At the secondary level, AIR focused on one MSAP-supported high school and one comparison high school in District A.

MSAP High School No. 1	Comparison High School
<p><i>MSAP School Theme:</i> Science, Technology, and Applied Research (STAR) Grade Levels: 9–12 Student Characteristics: Number of Students: 1,407* Race-Ethnic Breakdown of Students: <ul style="list-style-type: none"> • Hispanic: 11% • White: 45.3% • Black: 42.4% • Asian/Pacific Islander: 1.1% • Am. Indian/Alaska Native: 0% Percent Free/Reduced-Price Lunches: 42.4% Teacher Characteristics: Number of FTE Teachers: 81 Race-Ethnic Breakdown of Teachers: <ul style="list-style-type: none"> • Hispanic: 2.4% • White: 68.7% • Black: 26.5% • Asian/Pacific Islander: 1.2% • Am. Indian/Alaska Native: 0% 5+ Years of Teaching: 55.4% Newly Hired: 18.1% School and Neighborhood Characteristics: <ul style="list-style-type: none"> • Extremely large campus, with small satellite campuses • Well maintained </p>	<p><i>School Theme:</i> None Grade Levels: 9–12 Student Characteristics: Number of Students: 1,492 Race-Ethnic Breakdown of Students: <ul style="list-style-type: none"> • Hispanic: 11.9% • White: 53.1% • Black: 33.9% • Asian/Pacific Islander: 1% • Am. Indian/Alaska Native: 0% Percent Free/Reduced-Price Lunches: 37.3% Teacher Characteristics: Number of FTE Teachers: 79 Race-Ethnic Breakdown of Teachers: <ul style="list-style-type: none"> • Hispanic: 1.3% • White: 70% • Black: 28.8% • Asian/Pacific Islander: 0% • Am. Indian/Alaska Native: 0% 5+ Years of Teaching: 61.3% Newly Hired: 15% School and Neighborhood Characteristics: <ul style="list-style-type: none"> • Drab building with trailer classrooms </p>

* Data are from 1999-2000 school year

MSAP high school No. 1's surrounding neighborhood is dilapidated, yet the school is vibrant with its bright exterior walls. Despite a mobility rate of 36 percent and its location, the school maintains an aura of pride. The campus includes academic buildings, sports fields, a student parking lot, a veterinary clinic, a small animal shelter, a carpentry workroom, and a large kitchen for student use. In addition, the school maintains an open-field pasture, about a ten-minute drive from the campus, which is used for large animals such as horses, cows, and pigs. The high school is the only comprehensive high school in one of District A's geographical areas. It operates a combined college- and vocational-preparation program that reflects the school's membership in the New American High School movement.

The **comparison high school** operates a vocational preparation program very similar to MSAP high school No. 1. The school is more centrally located in the business center of town than the MSAP-supported high school and yet lacks the vibrancy of energy of the magnet school. The comparison high school seems figuratively as well as literally enveloped by its lackluster surroundings. It maintains some sports fields on campus but uses large sections of them to house more than 20 trailer classrooms.

Program, Themes, Goals

This case study describes the Tech-Prep program, the technology, and the specialized faculty at the MSAP-supported high school and the comparison high school in District A.

Tech-Prep program

All of District A's high schools offer the Tech-Prep program which utilizes academics as the main form of instruction, and links high school preparation with vocational Associates of Arts degree programs in community colleges. MSAP high school No. 1's theme is Science, Technology, and Applied Research (STAR), and it operates 17 career academy programs that prepare students simultaneously for college and entry-level positions in a variety of jobs, several of them in science and technology fields. All students are expected to graduate with both a theoretical background and practical experience in their field of choice. They

Career programs. MSAP high school No. 1's theme is Science, Technology, and Applied Research (STAR), and it operates 17 career academy programs that prepare students simultaneously for college and entry-level positions in a variety of jobs, several of them in science and technology fields.

enroll in rigorous academic classes (language arts, mathematics, science, and social studies) required for high school graduation and college entrance. In addition, each student selects an academy program, which involves a three-year sequence of hands-on courses related to a particular vocational area (taken in grades 9-11) and work experience (an internship) in the school or a community business during the senior year. Over their four years in the high school students build portfolios, and in their senior year they complete a culminating project related to their academy theme that is judged by community members.

At MSAP high school No. 1, students can take courses at the local community college while attending high school. There is a seamless flow of students between the schools, and the high school has designed its 90-minute A and B block scheduling to mirror that of the local community college. Some students graduate from high school having already completed an Associate of Arts degree as well.

MSAP high school No. 1 is unique in the district in the number of academies it offers and in the particular career paths it supports. The academies offered include the following: Agribusiness and Natural Resource, Horticulture and Turf Management, Veterinary Assisting, Accounting Operations, Office Management and Technology, Business Administration and Management, Marketing Management, Desktop Publishing, Medical Secretary Technology, Computer Information Systems Analysis, Electronic Engineering, Office Management Technology, Carpentry, Architectural Design, Drafting, Culinary Arts, and Early Childhood Education. Students may elect to participate in any of the available academies; enrollment in the academies varies widely from about 200 in the most popular academies down to 15 or 20 students.

In addition to its academic qualities, the school prides itself on treating all students as equals and encouraging all students to succeed academically. There are no procedures for tracking students; all students enroll in mixed ability classes. Rather than focusing on the percentage of students who

participate in the federal free or reduced-price lunch programs as a reason for their students not achieving at high levels, the staff is proud of its successes—its graduation rate is rising, the dropout rate is falling and lower than the state average, the school has the lowest crime rate of any high school in the area, and it has met the achievement improvement objectives set by the state accountability system. One demonstration of the faculty's commitment to the students is that many of them have become licensed bus drivers. This enables them to drive students to sporting and special events that they would otherwise miss because most students live far from campus and require bus transportation to and from school.

Theoretically, the comparison school operates in the same manner as MSAP high school No. 1, but site visits surfaced a different reality. Many classrooms in the comparison school lacked the demanding rigor found in the MSAP high school, and while teachers focused directly on preparing students for meeting the minimum requirements on the state assessments, education attainment beyond that level seemed stagnant. Nevertheless, both MSAP high school No. 1 and the comparison school use the Tech-Prep program as their main innovative strategy. The comparison school is currently working toward developing connections in the community that would allow for hands-on student vocational experience.

Technology

In high school No. 1, MSAP funds contributed to the purchase and maintenance of six computer labs and 55 laptops and software, as well as to the professional development services needed to prepare staff to use them. As several academies relate to specialized technological fields (for example, desktop publishing, computer information systems analysis, and office management technology), high school No. 1 employs a technology director, who oversees the school's technology operations, and two specialists in software applications and lab instruction. The school struggles to keep some of its teachers, especially those related to the technology field, because private companies and organizations consistently offer them higher salaries for their qualifications and services.

MSAP funds have also been used to build or renovate some of the facilities used by the school's career academies. Most notably, the veterinary assisting lab now has state-of-the-art lab equipment and facilities for grooming and performing surgical procedures on animals. The business software programs purchased with MSAP funds have enabled the school to establish a career academy specializing in business applications.

Specialized faculty

Since all of the classes at MSAP high school No. 1 serve students with a variety of ability levels, teachers receive professional development training on methods for teaching mixed-ability classes. In addition to providing regular academic courses, the school is committed to having resident experts teaching in every academy. These teachers either have already attained mastery in their specific fields or have obtained it through professional development activities during the MSAP grant. These master teachers can and do provide in-house professional development to other teachers and staff members. While the high level of expertise possessed by many of the staff members at high school No. 1 is an asset to the school, it is also proving to be a problem. The

expertise required for these staff positions make them attractive to private industry, which offers higher salaries to these individuals to take positions with their companies.

High school No. 1's commitment to accommodating and appreciating diversity is demonstrated by the school staff, whose ethnic and linguistic diversity mirrors that of the student body. There are black, white, Haitian, and Hispanic teachers and administrators, and many of the staff speak Spanish or Creole as well as English. Furthermore, students with disabilities are mainstreamed throughout the school, and are assisted by full and part-time staff as needed. For example, one hearing impaired student has had a full-time licensed hearing-impaired specialist to work with her in every class and in her internship.

By contrast, at the comparison high school, we observed two classrooms in which teachers who did not understand Spanish or Creole were responsible for instructing students with limited or no English proficiency. One mathematics class, comprised predominately of Spanish- or Creole-speaking students, was taught by a teacher who could not communicate in either language. The teacher instructed the English-speaking students while two bilingual aides translated into Spanish and Creole (with mixed results). Other classrooms that contained some non-English speaking students operated without a teaching assistant. We were informed that a classroom must contain a minimum number of non-English speaking students who all speak the same language in order to warrant a teaching assistant.

School Instruction and Activities

Instruction in MSAP high school No. 1 seemed to be fairly student-centered. Classrooms are set up in a variety of configurations. Some classes have all of the desks in rows, facing the front of the room. Some have the student desks in semi-circles facing the front of the room, and in other classrooms students face each other or sit in groups of four or five. Some classes, especially those that are academy-specific, do not use desks very often. The students in the veterinary assisting and carpentry courses use desks for specific tasks, but most learning involves hands-on activities in job-related settings. Regardless of how the desks were arranged, the teachers were interacting enthusiastically with the students in the several academy classes observed. The teachers seemed to work hard at making the material interesting in order to catch and maintain the students' attention. The work in academy classes is innovative and exciting (for example, a veterinarian actually showing students how to spay a dog). However, instruction in traditional mathematics, science, and language arts classes did not appear to differ from traditional schools, where some classes were student-centered while others were teacher-centered, and some lessons were innovative while others were more traditional.

Six high school students in a focus group expressed that they like the variety of academies available at the school and the academies that they had chosen, as well as the fact that they can get hands-on experience in each of the academies. They were more critical of the core courses in English, mathematics, science, and social studies because they were separate from the academy focus, and the academy courses did not have any reflection on the core courses.

At high school No. 1, the principal and staff take pride in their school's ability to offer students experiences not possible at the comparison high school in this district. Licensed professionals provide hands-on teaching experiences to students in academy classes. For instance, veterinarians and veterinarian assistants teach students in the veterinary assisting academy how to perform such

Unique experiences. Veterinarians and assistants teach students in the veterinary assisting academy how to perform such functions as grooming, physical check-ups, and spaying and neutering. Culinary technicians teach students in the culinary arts academy how to cook a variety of foods for different numbers of people.

functions as grooming, physical check-ups, and spaying and neutering. Culinary technicians teach students in the culinary arts academy how to cook a variety of foods for different numbers of people as well as the presentation of those foods. These students provide the meals for all of the school's special events, so that outside catering is not needed. Carpenters teach students in the carpentry academy

how to develop and implement carpentry plans. Students work with Habitat for Humanity to build new homes in the area, with the city and county government offices to build new benches and gazebos for public parks, and with private employers on a variety of projects. Academy courses are sufficiently demanding that some students have difficulty in passing them. The school has instituted remedial reading courses to support ninth-grade students who arrive at the school insufficiently prepared to meet the demands of the academies.

High school No. 1 assists students with acquiring both paid and unpaid internships over the summer and with academy-related positions during the academic year. Students, especially upper

Internships. One high school assists students with acquiring both paid and unpaid internships over the summer and with academy-related positions during the academic year. Students gain practical experience through these positions as well as first-hand applications of their learning.

grade students, gain practical experience through these positions as well as first-hand applications of their learning. Examples of these job assignments include doing "rounds" at the local hospital, gaining systems analysis experience at CISCO computer systems, or doing general work at the U.S. Department of Agriculture or the

Smithsonian Institution. Positions such as these are not required for graduation, but they are strongly encouraged by the administrative and teaching staff.

Academic rigor coupled with practical, hands-on applications in the academies clearly distinguishes MSAP high school No. 1 from the comparison high school. Whereas the primary focus of instruction at the comparison school appears to be enabling students to achieve a passing grade on the state assessment, MSAP high school No. 1 pursues this same goal while also encouraging students to achieve beyond their traditional classrooms through the academies.

Summary

The magnet schools in District A are part of a controlled choice desegregation plan in which all of the schools in the district potentially draw students from outside their immediate neighborhoods, and all attempt to develop and market distinctive identities. Nine schools have whole-school magnet

programs, however, and the MSAP grant supports four of them. Three of these are magnets in geographical areas and one is a districtwide magnet. During three earlier grant cycles, the district had been awarded three MSAP grants. By 1998, therefore, the project could draw on district and school staff who were knowledgeable about the steps needed to establish and manage new magnet school programs. Outlined below are some of the benefits and challenges that District A and the magnet schools have experienced in the 1998-2001 grant cycle, some lessons they have learned along the way, and the MSAP Project's plans for the future.

Benefits

MSAP funds have benefited District A's school improvement efforts in a variety of ways. The MSAP grant has provided resources to improve the schools' technology in areas such as developing and upgrading computer labs; wiring classrooms; purchasing laptops and desktop computers, computer software, and DVD players; and hiring technology specialists and lab coordinators for the mathematics, science, and technology labs. MSAP support also enabled the schools to acquire new equipment and materials, and to support special activities (e.g., supplies for the hands-on activities in the mathematics, science, and technology labs in two of the elementary schools). Acquisitions of new materials not only enriched the instruction provided to students, but also provided evidence of the uniqueness of the magnet schools.

MSAP-supported schools have been able to implement more professional development activities, in many cases focused on technology training, which has led to students having the opportunity to gain technology skills. While all teachers received professional development in a variety of areas, the resource teachers, whose positions were funded by the MSAP grant, were a significant benefit to their schools in that they provided technical expertise, enthusiasm, and additional hands to do the work of the magnets.

Challenges

District A experienced two major challenges with the MSAP grant. First, the funding from the grant afforded the district the opportunity to hire and provide ongoing professional development for technology experts in an effort to modernize the district's technological equipment and expertise. However, the sophisticated level of expertise required for these staff positions made them attractive to private industry, which offered higher salaries to these individuals to take positions with their companies. The district not only had to increase their salaries but it also had to be creative with the position requirements and expectations to make the roles challenging and invigorating for these technology experts.

In addition to developing sophisticated technology experts, District A also hired and trained staff to coordinate and operate the specialized mathematics, science, and technology thematic labs. However, staff in these positions were funded primarily by the MSAP grant. District policy was to enable the schools to maintain the lab coordinators after the MSAP funding ended, but the staff was to take on different responsibilities, including teaching and curriculum development.

Lessons Learned

The MSAP project director in District A learned that interest and support from the magnet school faculties and the larger community are key to the magnet schools' success. Advisory councils of school and community members selected the magnet themes, and the school faculties were involved in the planning and implementation of the magnet programs. The new elementary school with a performing arts theme fulfills the community's long-standing desire for a magnet school of the arts.

MSAP school administrators learned that two areas of professional development were particularly important for teachers to become truly effective in their classrooms: addressing the needs of diverse students and incorporating technology into classroom instruction, planning, and record-keeping. Faculty at the magnet schools participate in more of these professional development activities than is required by District A, but they believe that it ultimately helps improve student achievement.

Plans for the Future

In 2002, all of the magnet schools in District A that were supported under 1998-2001 MSAP funds were still operating. The district has provided some funds to keep them operating, and the schools have acquired some grants, as well, such as 21st-Century Schools, Comprehensive School Reform Demonstration Program, and Title I. The elementary schools wanted to sustain the mathematics, science, and technology labs but they were uncertain whether they would be able to do so, and uncertain about what the future would hold for the lab coordinators.

Case Study, District B

District Context

Location and Size

District B is located in the West in a city of fewer than 100,000 persons, and is approximately 120 miles from the nearest metropolitan center. There are 23 schools in the district, including 15 elementary schools, three middle schools, two high schools, a career development school, and an alternative campus. This district, which is smaller than most of the other MSAP-supported districts, does not have any charter schools.

Student Composition

District B has a public school student population of about 15,000 that is about 58 percent minority (mainly Hispanic) and 42 percent white. In 1999-2000, minorities constituted 61 percent of student enrollment in K-8. Whereas the district's student population is predominantly minority, the county in which the district is located has a predominantly nonminority student population (57 percent white, 43 percent minority.) The residential areas of the city within which the district is located are racially segregated. In addition, many students attend private schools, mainly Catholic or other Christian schools. District B estimated in 1997-1998 that about 1,550 students attended private or parochial schools. The MSAP project director speculates that the private schools attract students primarily by offering religious instruction, smaller classes, and specially selected students (i.e., the schools do not accept all students). Some students are home schooled, but the number of such students receiving this instruction is not available.

Magnet School History

The magnet school program is well established in this district, having started in 1986-1987 as part of a desegregation agreement. Three of the four magnet schools we visited were funded in 1986-1987 with local funds. The district successfully applied for MSAP grants in 1993, 1995, and 1998. At the time of the application for the 1998 MSAP grant, the district operated under a desegregation plan required under Title VI of the Civil Rights Act of 1964 and subject to the approval of the secretary of education. The district provides some limited additional local funds for desegregation. The community is familiar with the concept of magnet schools and has supported magnets in the past.

Many of the same schools have been carried over from one MSAP grant to the next. The four schools from the 1993 grant were included in the 1995 grant, along with two other elementary schools. One of the existing magnets was revised in 1995 to have a Montessori theme, and because its program was still effective, it was not included in the 1998 application. All of the other elementary magnet schools were included, with revised themes, as well as a middle school. In the 1998 MSAP grant, in addition to the district-sponsored Montessori magnet school, the district has six magnet schools: five elementary and one middle school, and all of the magnet schools are Title I schools.

State Systemic Reform

As is increasingly true around the United States, District B places great emphasis on student performance on its state standardized assessment in reading and mathematics that is administered annually to grades 3-8 and grade 10. The influence of the assessment and its results were evident in all of the schools visited, MSAP and non-magnet alike.

The state has developed and implemented content standards in mathematics, reading, English language arts, science, and social studies, and has identified the essential knowledge and skills that students should know and be able to do at every grade level. The state provides curriculum information and guidance to school administrators, counselors, and parents to ensure academic success of all students in the state.

Recently, in accordance with the state's accountability system, schools have been given an accountability rating, and are now provided financial rewards for demonstrating high levels of sustained success or improvement in achieving their educational goals.

District Reform Initiatives

One of the outgrowths of the 1995 MSAP grant application was the development of an academic standards initiative that was aligned with the state standards. Along with the application, the district developed a "roadmap" to focus on what would be taught, not how it would be taught. This led to a three-day summit in 1997 where community leaders and local educators (including both K-12 and postsecondary) met to answer the question, "What do children need to know in order to become productive citizens?" Their response required creating rigorous content standards for each subject area. The standards identify six dimensions or skills (e.g., critical thinking skills, technology, literacy, ethical behavior, communication skills, interpersonal and intrapersonal skills) and are linked with the state content standards, with benchmarks and performance indicators for each.

Among the influences on the standards was Grant Wiggins' *Understanding by Design*,¹² which focuses on performance assessment. For example, in developing the curriculum, the district began to differentiate among the types of knowledge they wanted students to gain: what is worth being familiar with, what must be learned in order to do performance tasks and projects, and what should be learned as enduring knowledge.

The standards initiative was initiated by the magnet schools, but became a districtwide effort. The skills identified by the group were incorporated into the district framework, which aligns standards and curriculum, by grade, for K-12 in mathematics, reading, and writing. (Science and social studies were to be added during the 2000-2001 school year.) The framework incorporates the essential knowledge and skills identified by the state and content standards developed at the national level. The district also developed performance-based assessments (in some schools) that embedded performance tasks that require students to use specified knowledge, skills, and processes in various content domains.

¹² Wiggins, G., and J. McTighe. 1998. *Understanding by Design*. Alexandria, Va.: Association for Supervision and Curriculum Development.

Other District B reform efforts that grew out of the standards initiative include integrating technology into the curriculum, providing continuing professional development to teachers and administrators, and developing partnerships among education, business, and the community.

Project Characteristics

Overview

The 1998 MSAP grant in District B supports five elementary schools and one middle school, all of which are whole school programs available to all magnet school students. The district has one other magnet elementary school, which was included in a previous MSAP grant and is now supported by the district. The five elementary schools are carried over from the 1995 MSAP grant with revised themes, and the middle school is a new magnet school. All of the magnet schools have clearly defined programs, and parents and most other community members seem to be aware that they have unique characteristics and offer special programs. Programs include project-based curriculum and the Joseph Renzulli Enrichment Model, broadcasting and publishing, space and science and computer technology, the education of the whole child, accelerated learning, Montessori philosophy, project based learning, and career explorations.

According to the MSAP project director in District B, several features characterize the MSAP project and its role in the school district: 1) the concept of magnet schools is firmly established in this district; 2) the magnet project is well coordinated with other district programs (e.g., Title I); 3) the magnet project makes a strong effort to fit into the district overall (e.g., sharing training, making resources such as the space module available to others, reflecting district reform efforts); and 4) the state test plays a central role in classroom instruction.

“Our magnet schools are the district’s research and development centers,” the MSAP project director states, and in recent years MSAP grants have enabled the district to identify several successful strategies for implementation in all of their schools. The MSAP-supported schools try out approaches and programs in carefully implemented stages. As an example of a proven R-and-D effort, the project director notes that the district’s standards initiative began with magnet schools and led to the development of curriculum across disciplines that has been linked with state and national standards, benchmarks, and performance descriptors for each grade level.

While staying within the regulations governing all MSAP projects, the project tries to share resources with other schools in the district. As space permits, for example, staff at non-magnet schools are invited to MSAP-funded professional development opportunities, where strategies are shared. Equipment is also shared, when possible. For instance, one of the MSAP-supported schools is developing a space shuttle simulator as part of its aeronautics theme (as described below), and the system is being placed in a converted school bus, to facilitate its use by other schools in the future. The project director believes that this policy helps reduce resentment among staff in non-magnet schools of the added resources and attention that magnet schools receive.

Both magnet schools and the MSAP project feel pressure to improve test scores, and the emphasis on mathematics and on reading and language arts creates some tension. One administrator said that focusing on reading and mathematics while still providing experiences and implementing

technology is “the biggest struggle we deal with.” One teacher noted that after the test was over in the spring, the class could finally “do other things.” Because the state plans to add other subjects to its assessment, it should become easier for District B to broaden the focus; however, magnet schools may still feel pressures not to venture too far away from basics. The fact that they are able to offer unique themes and activities is a tribute to strong district coordination and ongoing support from principals.

District-Level Staffing

The Magnet Schools Program in this district is run by the project director. The current project director assumed her position in 1997, when the 1998 grant was being developed. She has had prior experience as a content area specialist in a local magnet school, and hence has first-hand knowledge of the way that magnet programs are implemented. The policy used to be “hands off—this is a magnet” but that policy is not feasible or practical, according to the project director. She fosters a districtwide viewpoint and maintains that they “can’t do things in isolation.” The project director believes her primary role should be to remove obstacles and barriers for principals. She works closely with all of the magnet school principals (including the principal of the one district-funded magnet), and holds monthly meetings and annual retreats so that principals can share strategies and discuss problems and challenges.

Originally technology consultants were to be hired with funds from the MSAP grant, but it proved to be more expensive than hiring a full-time in-house person. Currently, the district Magnet Office of Information Technology is headed by a Magnet IT administrator to provide students, staff and administrators support for new and emerging technology applications for the classroom and community.

Recruitment Issues and Strategies

The district used a variety of recruitment strategies:

- An infomercial describing the magnet schools ran for six weeks on two local TV stations.
- A flyer was developed to wrap around the weekly grocery ads in the local newspaper.
- Commercials were included on four local radio stations.
- Nine half-size billboards were used around the city from March through mid-April.

The district also holds open houses at each magnet school, sends brochures and gives presentations in targeted recruitment areas, and prints ads in a Chamber of Commerce publication for newcomers to the city. Some magnet personnel promote the programs in the local civic groups (e.g., the Chamber of Commerce) in which they were members. The newest strategy, and the most effective in the third year of the grant, according to the project director, is a realtors’ meeting. The local realtors meet each Wednesday to tour homes, so the project director contacted them and asked them to meet at magnet campuses. Each principal was allowed to present a thirty-minute video and some of the realtors toured the school. The realtors then provided information on magnet schools in the district to clients purchasing homes in the local area.

The project maintains a Web site with information on what each magnet school offers and how students can apply for admission. Other means of publicity and recruitment include a exposition for parents at a community center in which each magnet school has a booth, and participation in state and national Magnet conferences. One of the elementary schools visited offers a summer technology camp with the hope that once students from outside the neighborhood see what the school can offer, they will be interested in enrolling. Although the district does not maintain waiting lists, the project director did report in the first year of the project that 30 students had to be turned away from one of the MSAP elementary schools and eight students were turned away from another.

Desegregation Plan and Objectives

The MSAP project in this district operated one middle school and five elementary school programs under a federally required desegregation plan that seeks to reduce minority group isolation. The district's overall minority enrollment in 1997-1998, when the district applied for MSAP support, was 61 percent of elementary school students and 56 percent of middle school students. Minority enrollment in the district's schools ranged from 20 to 86 percent of students. The district's six MSAP schools had the highest proportions of minority students, ranging from 69 to 86 percent.

Between 1997-1998 and 2000-2001 the number of nonminority students in the district decreased by 5 to 10 percent, while the number of minority students increased slightly. Consequently, the percent minority enrollment in the district increased to 63 percent of elementary school students and 60 percent of middle school students.

Progress in reducing MGI. *Despite the extensive recruitment effort, four out of six MSAP-supported schools did not make progress in reducing minority group isolation.*

Overall, the district's progress on reducing minority group isolation was limited.¹³ The middle school and one elementary school are credited with reducing minority group isolation because they experienced less of an increase in the percent minority student

enrollment compared with the district. Increases in the percent minority student enrollment at the other MSAP-supported schools exceeded the rise in percent minority enrollment for the district. Despite the extensive recruitment effort, four out of the six MSAP-supported schools did not make progress in reducing minority group isolation.

A number of factors may account for the limited success of the district in reducing minority group isolation at the MSAP-supported schools. First, the district continues to experience a decline in the number of nonminority students in public schools, which reduces the pool of potential applicants from the public system. Meanwhile, more than 1,500 school-age children are estimated to attend private schools, and it does not appear that magnet programs have yet been able to recruit them back to the public system.

¹³ Whether or not a district with a required desegregation plan met the requirements set out in a court or agency order is not being assessed in this study. Compliance with a court order is determined by a court, not the Department of Education (likewise an agency determines compliance with an agency order). Therefore, if a court or agency deems a magnet school operation and enrollment to be in compliance with an order, the Department of Education will defer to that interpretation. See 1998 Magnet School Application Notice. (See also 34 CFR 280.2(a)(1)).

Second, a decline in total enrollment in four of the six schools and the small numbers of students who have reportedly been turned away from programs indicate that in general the programs need to attract more students. All of the elementary schools experienced a decline in the number of nonminority students enrolled in the school.

Third, attendance zones may restrict the ability of schools in high-minority neighborhoods to recruit nonminority students. If priority is given to students living in the neighborhood this may decrease the availability of seats for students living outside the school's residential zone. Principals at the three schools that experienced the greatest increase in percent minority enrollment reported that their school gives priority for admission to students in the neighborhood and that more than half of the students in their school are from the neighborhood.

The Role of the MSAP Project in Supporting State Systemic Reform and Other District Initiatives

It is not surprising that the district office exerts pressure for magnet schools to perform well on the state assessment given the emphasis on state assessments and accountability. This emphasis was

Impact of state tests. Over and over again, teachers in the classrooms we observed would preface an activity by telling their students "We're going to review this because you have had trouble with it on the [state test]."

evident in every school AIR visited, both in MSAP and non-MSAP schools. Over and over again, teachers in the classrooms we observed would preface an activity by telling their students, "You need to know this for the [state test]" or "We're going to review this

because you have had trouble with it on the [state test]." When scores are released, some of the schools highlight the scores on their outdoor signboards, where announcements of open houses or other special events are usually posted.

The magnet project director sees the pendulum swinging back somewhat: the state is adding science and social studies to its next version of the test, and this will affect instruction. She feels that the test has led to some improvements in the curriculum and has given an urgency to achievement; however, it has also stymied creativity in other ways because of its focus on reading and math. The project director believes that the MSAP project has helped counteract that.

The magnet project is closely coordinated with district goals and objectives, and magnet school curricula conform to district and state guidelines of aligning standards and curriculum. The project director reports to the assistant superintendent for curriculum and instruction, and they hold formal meetings to review goals and accomplishments and meet informally as needed. For example, monthly curriculum and instruction meetings are attended by the assistant superintendent, directors of elementary and secondary education, and staff who coordinate Title I, Bilingual, Gifted and Talent Education, and Magnet programs (i.e., the MSAP project director).

Reform activities are implemented in MSAP-supported and non-MSAP schools alike. "The MSAP grant was the seed," the project director says, and the standards initiative is the primary reform in the district today. Another reform effort focused on performance assessments involves Understanding by Design, as mentioned earlier. Other reforms are much smaller in scale and vary from one school to another.

Parent involvement. A key element in successfully introducing reform efforts is the support and active involvement of parents in school activities. Each of the magnet schools developed activities designed to attract parents as active participants in their children's education.

The district maintains that a key element in successfully introducing reform efforts is the support and active involvement of parents in school activities. Each of the magnet schools developed

activities designed to attract parents as active participants in their children's education. For example, each of the elementary schools have parent liaisons on staff and some parent resource rooms on the school campus.

The magnet project continues efforts to involve the community through a community advisory council of 30-35 members that meets once a quarter. Parents of both neighborhood students and magnet students are included, and they account for about 80 percent of the membership, with principals and teachers making up the remaining 20 percent. The group has not been as active as originally planned, and in the third year of the MSAP grant was "just getting off the ground," according to the project director.

Other reform efforts at magnet schools include enhancing professional development of teachers and staff and integrating technology into the curriculum. Additionally, according to the MSAP project director, some of the magnet schools in District B have Comprehensive School Reform Demonstration Program grants and all are Title I schools. The Success for All and Roots and Wings programs are reforms, and they are also found in one of the comparison schools.

Student Achievement

District B bases its student achievement objectives on three types of measures:

- Student scores on well-established state standardized assessments in reading, writing, and mathematics administered annually to students in grades 3-8
- A criterion-referenced reading assessment for lower grades that was designated by the state about a year into the grant period
- A career-awareness checklist that was to be developed by the curriculum department

The objectives described in the district's grant application were revised in 2000. It appears that the project needed to clarify goals that had originally been stated imprecisely, take account of the unavailability of measures for one objective, and scale down expectations that had originally been set too high. The original objectives, their successors, and the school's success in meeting their goals are outlined below.

- *Increasing the number of students reading independently by the end of third-grade.* District B's objective to have all MSAP third-graders capable of reading independently by 2001 was revised in the second year of the grant to specify that 85 percent of third-grade students would be reading independently each spring. Among the five MSAP elementary schools, all had met the goal by the third year for its nonminority students, but only one had met the goal for its minority students.

- *Annually reducing performance disparities between minority and nonminority students on state assessments in reading, writing, and mathematics (grades 3-8).* The percentages

Achievement outcomes. *The percentages of minority and nonminority students passing the state tests increased over the three grant years in all six MSAP schools. However, in none was the achievement gap reduced by the amount specified in the objective. In most schools, at most grade levels, and for most subjects, the gap widened.*

of minority and nonminority students passing the state tests increased over the three grant years in all six MSAP schools. However, in none was the achievement gap reduced by the amount specified in the objective. In most schools, at most grade levels, and for most subjects, the gap widened. The

reductions that did occur were modest (about one-third of the amount envisioned by the project). Similarly, minority and nonminority students in early grades showed fairly similar growth in reading levels on the locally administered test, but a pattern of lower minority student performance persisted in all schools. The district concluded that the challenge is to maintain nonminority students' growth in achievement and accelerate the rates of growth for minority students.

- *Increasing awareness of employability skills.* District B dropped plans to measure improvement in students' awareness of employability skills by devising a career decision-making checklist when the district announced that it was in the process of devising a similar instrument. Ultimately no assessment was conducted on students' awareness of employability skills by the end of the project.

In addition to the district's stated objectives, the results from state assessments in reading, writing, and mathematics from 1998 to 2001 show that the overall proportions of minority and nonminority students passing increased in virtually all of the MSAP schools. All six schools showed improved performance over the three years in at least one area, and most improved in all three. Schools with the lowest initial passing rates showed a pattern of steady increase and occasionally large improvements over the three years (e.g., gains of 11 to 26 percent of students passing). One school experienced an overall decline in reading and writing scores but a substantial increase in mathematics scores.

Professional Development

Project funds are used for professional development, both at the individual school level (described below) and at the project level. For example, MSAP funds supported project-level training in how to understand and address the special needs of children suffering from generational poverty;¹⁴ this teacher training is now being offered districtwide. One MSAP-supported school provided special training in reading that is now used in many of the district's schools. Principals also indicated a need for training in writing, so professional development opportunities were provided in this area. One MSAP elementary school invites teachers from other schools to attend professional development activities that are not offered districtwide. For example, 10 to 20 teachers

¹⁴ This training used the following book: Payne, Ruby K. 1998. *A Framework for Understanding Poverty*. Highlands, Texas: RFT Publishing.

had attended training on writing offered at the school. These examples reflect the impact that the MSAP project has on the district.

In addition, the project is also supporting the concept of “learning communities” with time for teachers to reflect on their teaching. The project director is modeling this reflection in monthly meetings and sees it on campuses as well. She believes that it is impacting belief systems and prompting a number of study groups.

Innovative Practices

Although innovative practices tend to be school-specific rather than project-wide in this district, there are a number of shared features across the MSAP-supported schools:

- Infusion of theme throughout curriculum.
- Districtwide curriculum transformed from a traditional teacher-based curriculum to a standards-based curriculum.
- Project-based learning.
- Constructivist teaching: an approach that is based on the premise that students learn by fitting new information with the understandings, models, and meanings they have already developed.
- Multiple intelligences, based on the theory developed by Howard Gardner, who believes that we should also place equal attention on individuals who show gifts in other intelligences rather than linguistic or logical-mathematical intelligence.
- Family nights.¹⁵
- Environmental science.
- Advances in technology.

The project has had an effect on activities and programs in other schools in the district. Examples of this include environmental centers at each school, Web sites for all schools in the district, professional development programs, and training on working with students of poverty.

Sharing innovative practices. MSAP schools have also had a lot of outside visitors. One of the MSAP elementary schools has received a lot of visitors interested in a particular reading program because it is the site where a video for this program was filmed.

MSAP schools have also had a lot of outside visitors. In particular, one of the MSAP elementary schools has received a lot of visitors interested in a particular reading program because it is the site where the video for this program was

filmed. The use of infomercials done by MSAP schools for marketing and recruiting purposes has caught on with other schools in the district. Finally, the standards initiative began with magnet schools and have been implemented districtwide.

¹⁵ Family nights originated at the MSAP schools, but other schools are now using the idea.

School Level Programs and Activities

This case study describes findings from site visits to District B in spring 2000 and spring 2001 and focuses on four of District B's MSAP schools: three elementary schools and the middle school. To provide a comparison for these schools, two non-magnet schools—one elementary school and one middle school—were also part of the case study site visits. One student focus group, with six to eight students, was conducted in each of the MSAP schools. The project director recommended the MSAP middle school, and the elementary school selections were based primarily on theme. Comparison schools were selected to closely match the MSAP school in terms of student demographics (racial-ethnic breakdowns, grade level, etc.).

Overview of Elementary Schools

At the elementary level, AIR focused on three MSAP-supported schools and a comparison school in District B.

MSAP elementary school No. 1, a Broadcasting and Publishing Academy, is the most disadvantaged school in the district, as measured by the percentage of students who are eligible for the free and reduced-price lunch program. The school estimates that 25 to 30 percent of the students have a relative who is in prison. Many of the parents are unemployed, and many are not native English speakers. The school has a solid magnet program, but its location has hindered its ability to attract students from other parts of the city. The block on which the school is located has only the school and a park, and while the park is now an asset, giving the students extra play space and a view of grass and trees, until recently gang fights frequently occurred there. The school began a campaign to clean up the park and now the entire block looks serene, pleasant, and safe. The surrounding area has moderate- to low-cost houses, some a bit worn down, and light industry, but is not unpleasant. Parents are still reluctant to come to the area, however, partly because it is some distance from the downtown area and hence seems a bit remote.

Located in the heart of a commercial area, **MSAP elementary school No. 2** is not new but is well maintained and was undergoing remodeling during the site visits. A busy street runs past the back of the school, but a fence and the environmental center act as a buffer so that it is not as affected by it as it might be.

MSAP Elementary School No. 1	MSAP Elementary School No. 2
<p><i>MSAP School Theme:</i> Broadcasting and Publishing Academy Grade Levels: K-5 Student Characteristics Number of Students: 426* Race-Ethnic Breakdown of Students:</p> <ul style="list-style-type: none"> • Hispanic: 80% • White: 11% • Black: 9% • Asian/Pacific Islander: 0% • Am Indian/Alaska Native: 0% <p>Percent Free/Reduced-Price Lunches: 85% Teacher Characteristics Number of FTE Teachers: 39.3 Race-Ethnic Breakdown of Teachers:</p> <ul style="list-style-type: none"> • Hispanic: 6% • White: 94% • Black: 0% • Asian/Pacific Islander: 0% • Am Indian/Alaska Native: 0% <p>5+ Years of Teaching: 78% Newly Hired: 2% School and Neighborhood Characteristics</p> <ul style="list-style-type: none"> • Recently remodeled • Neighborhood previously rundown, but now cleaned up 	<p><i>MSAP School Theme:</i> Mathematics and Science with Emphasis on Aerospace Grade Levels: K-5 Student Characteristics Number of Students: 533 Race-Ethnic Breakdown of Students:</p> <ul style="list-style-type: none"> • Hispanic: 67.5% • White: 25.5% • Black: 7% • Asian/Pacific Islander: 0.2% • Am Indian/Alaska Native: 0% <p>Percent Free/Reduced-Price Lunches: 71% Teacher Characteristics Number of FTE Teachers: 37.2 Race-Ethnic Breakdown of Teachers:</p> <ul style="list-style-type: none"> • Hispanic: 9% • White: 91% • Black: 0% • Asian/Pacific Islander: 0% • Am Indian/Alaska Native: 0% <p>5+ Years of Teaching: 65% Newly Hired: 15% School and Neighborhood Characteristics</p> <ul style="list-style-type: none"> • Well-maintained, being remodeled • Commercial area
MSAP Elementary School No. 3	Comparison Elementary School
<p><i>MSAP School Theme:</i> Academic Excellence Grade Levels: K-5 Student Characteristics Number of Students: 612 Race-Ethnic Breakdown of Students:</p> <ul style="list-style-type: none"> • Hispanic: 65% • White: 21% • Black: 12% • Asian/Pacific Islander: 2% • Am Indian/Alaska Native: 0% <p>Percent Free/Reduced-Price Lunches: 74% Teacher Characteristics Number of FTE Teachers: 47.2 Race-Ethnic Breakdown of Teachers:</p> <ul style="list-style-type: none"> • Hispanic: 0% • White: 100% • Black: 0% • Asian/Pacific Islander: 0% • Am Indian/Alaska Native: 0% <p>5+ Years of Teaching: 60% Newly Hired: 12% School and Neighborhood Characteristics</p> <ul style="list-style-type: none"> • Well-maintained, new wings added • Poor neighborhood 	<p><i>School Theme:</i> None Grade Levels: K-5 Student Characteristics Number of Students: 583 Race-Ethnic Breakdown of Students:</p> <ul style="list-style-type: none"> • Hispanic: 60% • White: 26% • Black: 14% • Asian/Pacific Islander: 0.2% • Am Indian/Alaska Native: 0% <p>Percent Free/Reduced-Price Lunches: 79% Teacher Characteristics Number of FTE Teachers: 39.3 Race-Ethnic Breakdown of Teachers:</p> <ul style="list-style-type: none"> • Hispanic: 2% • White: 95% • Black: 0% • Asian/Pacific Islander: 0% • Am Indian/Alaska Native: 0% <p>5+ Years of Teaching: 64% Newly Hired: 16% School and Neighborhood Characteristics</p> <ul style="list-style-type: none"> • Plain, but well-maintained

* Data are from 1999-2000 school year

At **MSAP elementary school No. 3** enrollment dropped somewhat three or four years ago when a small elementary school in the area reopened. About 10 percent of the total student population are limited English proficient (LEP). The LEP students stay in the same class throughout the day, where three bilingual-certified teachers and an ESL specialist work with them.

The school is located in a poor section of the city, with houses that are somewhat dilapidated. There have been no new housing developments in recent years. The principal said that ten years ago, before a magnet program was introduced, district administrators were worried about what would happen because a gang had its territory about two blocks away from the school. It has quieted down and the gangs have moved out of the area, but the neighborhood continues to be a factor in attracting students. Some students transfer out of the school because of the condition of the neighborhood, but not because of any actual problems with the neighborhood residents.

The **comparison elementary school** building is plain but well maintained, and classrooms are inviting. While the racial-ethnic backgrounds of the students in the comparison school are similar to those in the MSAP-supported school, the school population is becoming increasingly poor, with 79 percent eligible for free or reduced-price lunches, and is highly mobile (57 percent the prior school year). The school also has a number of special education students, including some with severe problems.

Program, Themes, Goals

The three MSAP-supported elementary schools have these characteristics in common:

- Readily identifiable, well-integrated magnet themes.
- “Good Morning” television shows.
- Success for All (SFA) reading programs.
- Infusion of technology.
- Teacher professional development.

Integration of themes

As indicated above, each of these elementary schools has an easily identifiable magnet theme. MSAP elementary school No. 1 first implemented a magnet program in 1986, with local funds, and became a fine arts magnet in 1993, with MSAP funds. By 1995, the school was not drawing the number of students it had hoped, and student test scores remained below what was desired. The staff felt that a strong academic focus (e.g., reading and math) was needed. They decided that fine arts and technology could be included in the curriculum but should not be its focus. Subsequently, the interest in technology evolved into a broadcasting focus in part because it also supports an emphasis on academics. By 1998, a publishing theme was added to the broadcasting focus, but academics remain important and fine arts is still a part of the curriculum.

The publishing resource teacher, supported by the MSAP grant, helps students in grades 4-5 publish a school newspaper about once a month. All articles are written by students (with bylines)

and focus on various school activities, students' poems and fiction stories, and photos of students, teachers, and school activities.

Although performing arts are not the primary theme of elementary school No. 1 any longer, students have once-a-week drama classes that utilize equipment and materials acquired for that theme. Classes are held in the large drama laboratory, which includes a stage, an air-suspended dance floor with mirrors on three sides, and a puppet theatre made from a refrigerator box. The drama teacher stated that reading and drama are integrated, with increasingly sophisticated activities for students.

At elementary school No. 1, the influence of the state test, a staff member said, "is huge" and creates tensions for both students and teachers at this elementary school. The school seems to operate well within those constraints, however. The magnet themes of broadcasting and publishing seem to be integral parts of the curriculum. The technology—such as computers, broadcast equipment, and multimedia carts—seems to be used for educationally legitimate purposes, not for fun. Students are learning to use technology while improving their skills in writing, speaking, and conducting research, and they are receiving intensive instruction in reading and math.

A visitor entering District B's MSAP elementary school No. 2 can guess the magnet theme immediately: aerospace, or more specifically, a math and science school that emphasizes aerospace. Display cases exhibit an astronaut's jump suit (one that has been in outer space) and other paraphernalia from the National Aeronautics and Space Administration (NASA); the halls include airport-type signs that point to various sets of "gates" (classrooms); the cafeteria ceiling is partially covered by a large, student-built glider (part of a mathematics project); airport-type benches provide waiting space outside the office; and the cement area connecting two buildings is painted to resemble a landing strip. The aerospace theme is also apparent in classrooms and seems to be well integrated into the elementary school curriculum. The school's earlier experience as a science and mathematics magnet provided a foundation so that adding aerospace was not as difficult as it might have been.

In addition to its aeronautics equipment and décor, the school has had an outdoor environmental center since the late 1980s, and it includes doves and chickens, a greenhouse, fountain, deck, benches, trees, tropical plants, and herbs—the first in the district. It also has a garden with plots for each second-grade class, and beans, tomatoes, and other vegetables were growing there at the time of the site visits. During breaks, lunchtimes, and before and after school, students could be seen working independently in the environmental center, weeding, feeding animals, sweeping, and obviously enjoying themselves. Fifth-grade students in a focus group commented that they liked the environmental center, especially the garden and the animals. The center has been so successful that other schools in the district now have similar ones.

This school sponsors a number of extracurricular activities that relate to the themes of science, mathematics, and aerospace. The one most clearly tied to the theme is the Young Astronauts Club, which has been going since 1988 and meets after school for an hour each week. At one club meeting fifth-graders were actively building robots (having completed rockets earlier in the year) and working mainly in groups of 3 to 5. Each group member had one of three responsibilities: parts,

engineer, or clean-up, and students received assistance from their teacher-sponsor as needed but were mainly self sufficient.

MSAP elementary school No. 3 has been a magnet school for nearly 15 years. Its first theme was gifted and talented education; then global technology was added. After global technology failed to attract as many students as hoped, the school's emphasis changed to academic excellence, the current theme. The gifted and talented education program (GATE) remains and remnants of the global technology program are still evident; however, the major emphasis in the school now is advancing the knowledge of students. The frequent theme changes have led to the perception in the community of instability of the school, according to a school administrator, but in reality, the current program is just an enhancement of the previous programs (themes). A 26-member team of school administrators, committee members and parents has met to revise the school's five-year strategic plan (e.g., goals, actions, steps), and the school tries to provide "lots of voices" in the decision-making process and have an "open door" policy.

Many of the students have been identified as gifted and talented, and there is a differentiated curriculum for students based on their abilities. The school meets the district and state's requirement for identifying gifted and talented students and has opened up admission so that any student who wants to attend is considered. More importantly, the techniques for GATE students are applied throughout the school, for all students.

The school uses the Joseph Renzulli Schoolwide Enrichment Triad Model (SEM) to help organize teaching and learning in mathematics, science, reading, science, geography, English, music, and art. The SEM uses open-ended, guided activities to enable students to pursue individual areas of interest and grow from dependent to independent learners. SEM has a three-level approach, with increasing independence at higher levels, and teachers at this school want all students to at least go through levels 1 and 2. For the gifted and talented students, the goal is to spark their motivation to reach level 3, which is individualized guidance or research carried out by the students themselves, sometime during the year. Before the SEM was introduced, teachers used gifted and talented strategies at the school but only for gifted students. The MSAP grant opened up the school to everyone by providing SEM strategies to address educating the non-gifted students.

Another MSAP-funded program at this school is Campus Academic Mental Performance Simulations (C.A.M.P.S.), a full day of hands-on activities where the students focus on one topic of interest. At the beginning of the school year, students complete a survey to identify their interests, so that students can be matched with particular camps. The activities are usually for all grades in the elementary school. Examples include a beach camp, with seining, fish dissection, an analysis of fish prints, and construction of a sand castle; and a camp on mythology with different stations on Egypt so that students could research clay coins, astrology, diet, and other areas. According to the school administrators, the normal school budget for resources and training would not allow them to have these hands-on activities. "MSAP funds pay for some wonderful activities," one of the staff members noted in talking about the academic camps.

The comparison elementary school has many of the same characteristics as the MSAP-supported schools: it has an SFA facilitator and teacher aides during the reading period, it offers the Respect and Protect program, its students are generally well behaved, and the teachers observed

seem to be hard-working and dedicated. Students in this school were generally attentive, but to keep them on task, the teachers observed had to devote more time and attention to behavior problems than did the teachers in the MSAP-supported schools. This may be a function of the school population.

Like the MSAP-supported elementary schools, the comparison school has mathematics and reading specialists funded by Title I and other sources, a technology specialist (who runs the computer lab), and a parent liaison. Kindergarten and first-grade teachers are given substitutes for one day so that they can make home visits, and the parent liaison sometimes goes with them. Teachers call parents frequently and hold conferences at least once a year.

“Good Morning” shows

Each of the three MSAP-supported elementary schools AIR visited have closed-circuit television capability and produce 10- to 15-minute programs each morning to begin the school day. Basic “Good Morning” shows, they involve students as news anchors and camera persons and

Innovative instructional methods. *Three MSAP-supported elementary schools have closed-circuit television capability and produce 10- to 15-minute programs each morning to begin the school day. They involve students as news anchors and camera persons and include a variety of announcements, such as the lunch menu, reminders about parent permission slips for upcoming field trips, and recognition of students receiving special awards (e.g., for attendance).*

include a variety of announcements, such as the lunch menu, reminders about parent permission slips for upcoming field trips, and recognition of students receiving special awards (e.g., for attendance). As might be expected, the morning show in the magnet school with a broadcasting and publishing theme (MSAP elementary school No. 1) covers more topics, involves more students, and utilizes more sophisticated broadcasting techniques than those in

the other two schools (see below). At all three schools, however, the morning show focuses everyone’s attention, sets the tone for the day, and helps build school identity and purpose. The comparison elementary school visited does not have closed circuit television.

At elementary school No. 1, the “Good Morning” show is broadcast from a room devoted to broadcasting and computer equipment. Students use the room all day, with classes in grades 3-5 coming for 25 minutes each week. With an award-winning program, the broadcasting resource teacher (funded by the MSAP grant) has students working on Web sites as well as using a variety of software packages on Apple computers and learning to operate the broadcasting equipment. The broadcasting resource teacher also provides before- and after-school classes, with 30-35 and 20 students attending, respectively; a class for teachers; and a Saturday morning program for students, parents, and grandparents that has attracted 10-20 people.

The principal mandates that every person on campus—students, faculty, and all other school employees—are included in the announcements section sometime during the year. In all, the show touches on life skills and many aspects of school life, and is a mix of information and educational material, presented capably and professionally.

Success for All reading program

All of the MSAP-supported elementary schools and the comparison elementary school visited have adopted the Success for All¹⁶ (SFA) reading program for all grades as part of their reform

Adoption of whole-school reform models. All of the MSAP-supported elementary schools and the comparison elementary school visited have adopted the Success for All (SFA) reading program for all grades as part of their reform efforts.

efforts. This program is highly structured, with specified books and other learning materials that are found in every classroom; training is given by the publishers. All rooms exhibit the basic SFA reading materials (e.g., rugs, word walls, word pockets) and have a television monitor, from four

to eight computers, an overhead projector, and tables and chairs for students in small groups. Reading instruction is provided for 90 minutes each day, during a period that is kept sacrosanct. All students are assigned to a “homeroom teacher”—the one who is responsible for their progress in subjects other than reading—but are assigned to reading groups on the basis of their reading ability. Teachers remain in their classrooms, and students come to them. The teaching staff is supplemented by reading tutors during this period so reading groups are small and fluid, with students moving to other groups as their skills are measured. Every eight weeks, students are assessed and assigned to a reading group on the basis of their individual progress. Reading skills are enhanced and extended throughout the day as teachers work with their homeroom students in the other subject areas.

In the reading classes observed in the comparison elementary school, the same SFA techniques and strategies were employed, such as forming small reading groups based on performance, and having students create “meaningful sentences.” The same SFA word walls, carpets, and other related materials are evident in the classrooms. The school’s SFA lead teacher provides training, works with students, demonstrates techniques and strategies, and works with individual teachers. As in the MSAP-supported schools, teacher aides help provide SFA instruction.

Technology

The MSAP elementary schools visited, especially schools No. 1 and No. 2, have state-of-the-art technology. At elementary school No. 1, to make equipment readily accessible to teachers and students, the broadcasting resource teacher and other staff developed multimedia carts for each grade level, with two VCRs plus numerous other pieces of equipment, including a computer with audiovisual in and out ports, a visual presenter (e.g., digital camera), video camera, printer, and scanner on each cart. These carts can be moved around as needed and are seen in use throughout the school—by students as well as teachers.

One large room is devoted to a publishing lab with 17 networked computers and one iMac-plus. Students in grades K-2 come there on a regular schedule, and the publishing resource teacher leads them in activities that fit into their regular curriculum. She believes that students in the magnet schools use computers far more than students in other schools; the project director claims that students in magnet schools are no longer content just to write book reports but are more likely to do multimedia presentations.

¹⁶ The Success for All program was initiated by the Johns Hopkins University and developed into the Success for All Foundation.

MSAP elementary school No. 2 has a high-tech flight simulator, satellite conferencing capability, and continuous TV links with NASA. Most of the aeronautics equipment is housed in

Use of technology. One MSAP elementary school has a high-tech flight simulator, satellite conferencing capability, and continuous TV links with NASA. Most of the aeronautics equipment is housed in “Mission Control,” which includes a flight simulator that students are able to operate.

“Mission Control,” which includes a flight simulator, described as “science museum quality,” which students are able to operate. Another piece of equipment that was near completion is a space shuttle: a converted school bus that is being equipped with TV

monitors with scenes of space; commander and pilot seats that are analogous to the simulator; an exercise bike; satellite communications control; plus robotics, medical, environmental, and life science stations.

MSAP elementary school No. 3 has two computer labs—students use the lab’s 28 computers once a week in mathematics or reading for curriculum-based enrichment. A typical classroom includes six computers, a television, a VCR, and an overhead projector. The technology specialist said that the school had purchased additional technological resources in the previous couple of years, but had not had a technology person on staff to help coordinate the installation and maintain the equipment. During the second grant year, she focused on getting all the computers and other technology hooked up and running.

The comparison school does not have the good morning show and it lacks the cutting edge equipment observed in the MSAP-supported school, but it seems to have adequate resources. Computers are used as a messaging service to relay announcements to the faculty, and teachers have received technology training.

Professional development

Teacher professional development is emphasized at the MSAP elementary schools as part of the school reform efforts. The school staff at MSAP elementary school No. 2 had received seven days

Extended professional development. Staff at one of the MSAP elementary schools received seven days of training from NASA’s Teacher Center, as well as two hours of training each week for six to eight weeks in relevant areas such as the scientific method, technology, and hands-on activities.

of training from NASA’s Teacher Center, as well as two hours of training each week for six to eight weeks in relevant areas such as the scientific

method, technology, and hands-on activities. Staff development technology sessions on computer usage are also provided each month.

Teachers at elementary school No. 3 have received extensive professional development in many areas related to the school and magnet program, and much of this training is funded by the MSAP grant. The Gifted and Talented resource teachers and a team of teachers received training in SEM in Connecticut, and every Monday teachers at every grade level receive training in SEM. All staff meet the minimum state requirement of 32 hours of training in gifted and talented education, and the

principal continues to get training in that area. Because some of the teachers are “technologically challenged,” as a technology specialist described it, and technology changes so rapidly, she provides staff development technology sessions each month. Teachers have also received training that focuses on the state standards, local budget, and the district’s MSAP programs, as well as science instruction, conflict resolution, writing, and other areas.

School Instruction and Activities

Innovative classroom instruction

The three MSAP elementary schools have more resources and resource specialists, technology, and theme-related activities than the comparison elementary school, which results in more innovative classroom practices. However, the comparison school also has some creative instruction. Following are some examples of classroom instruction in mathematics, science, and writing in the MSAP-supported schools (and instruction in mathematics in the comparison school), and an example of a classroom activity in the comparison school.

On AIR’s site visits, several mathematics classrooms were observed. MSAP elementary school No. 1 uses some of the Wings mathematics program, but supplements it with other materials. A third-grade class was focusing on measurement in metrics, and the teacher emphasized the real-life application of meters and kilometers. Students worked in pairs and trios and discussed and checked their work. Fourth-grade students in the focus group appeared to like the mathematics classes at this school.

MSAP elementary school No. 3 has increased its focus on mathematics through the assistance of a mathematics specialist. For mathematics instruction, the school uses the Math Your Way philosophy in kindergarten through grade 2, and students are grouped by ability in mathematics across all grades. In the most able fifth-grade mathematics class, the students were working with “Hands-On Algebra”¹⁷ materials, which consist of a laminated sheet for hands-on equations, dice with numbers written out, and pegs. The teacher showed the worksheet to the class using the overhead projector, and the students used the colored pegs and dice to work on algebraic problems. After they solved the problem using the manipulatives, they solved the problem without the manipulatives before they started solving a new problem. The objective of it all was for the students to learn different methods to solve algebra problems.

In another second-grade mathematics class observed in this school, the Title I mathematics specialist was teaching the class and asked students how many had eaten Chinese food and how many had used chopsticks. She asked the students how many chopsticks were needed if the class was taken to a Chinese restaurant, telling them to use a piece of paper to show how they came up with the answer. She explained that they could draw a picture, act it out by counting, or write down the numbers, but that she would not accept just the answer. The students were very engaged in this activity, and many were eager to demonstrate how they got their answer.

¹⁷ This lesson was based on the Hands-On Equations Learning System by Henry Borenson of Allentown, Pa., for grades 3 and up.

In the comparison elementary school, mathematics classes focus on basic skills but utilize a variety of techniques such as lessons provided in *Hands-On Math*, published by Creative Teaching Press, Inc. Teachers at the same level seem to cover the same topic at the same time, indicating coordinated planning. For example, a lesson on decimals was observed in third-grade classes; lessons on reasoning were observed in second-grade classes.

Other subjects were also observed. In MSAP elementary school No. 1, in a fourth-grade science class the teacher was helping the class make a list for rock study, with the letters K, W, and L marking the items that they Know, Want to Know, and Learn, respectively. Once the list was developed, students read about rocks in a science book, taking turns reading. During the same science period, a kindergarten class was seen in the midst of a unit on seeds and plants, working with small flowers and talking about seeds and the parts of the flower. The kindergarten room opened onto another kindergarten room, and teachers and students moved back and forth in a team-teaching arrangement.

At MSAP elementary school No. 2 the science lead teacher works with the mathematics lead teacher (both are funded by the MSAP grant) to develop activities and projects that meet several criteria: they use mathematics and science, reflect the theme, conform with state standards, are interdisciplinary, and can be introduced in the block period and completed in classrooms. One innovative lead-teacher-planned activity was student construction of a glider—a 1901 Wright Brothers design—that involved use of ratios, measurement, and scale, first in two dimensions and then in three. The glider is 22 feet across, with 22 ribs on the top and bottom, and hangs from the cafeteria ceiling—a source of pride for the students.

Other activities planned and supervised by the lead teachers (and supported by classroom teachers) include a fifth-grade robotics project to design a red rover lander in a Mars-like environment. In “Mission Control,” students created a large sandbox that simulates volcanoes, flat weather, polar caps, and canyons and is controlled with a TV screen and computer program that students operate remotely. Related activities have included hiding ice and fossils in the sandbox so that students can figure out how to have the lander find them. (As described in MSAP middle school No. 1 below, students there and at this school can communicate through the actions of this lander.) Some of the fifth-grade students in the focus group commented that the Mars project with the rover lander was the best activity of the year at the school.

At elementary school No. 3, the MSAP grant funds support the salaries for a writing specialist and an art specialist (the only one in the district at the elementary level). The writing specialist teaches three to five classes in all of the grades during each week. An experienced classroom teacher, she assists the fourth-grade teachers with writing curriculum in their classrooms and teaches third-graders different modes of writing—“how to,” narratives, poetry—so that they are more prepared for intense study in fourth-grade. The writing specialist also runs a student writing lab, with about 25 computers (all iMacs) and two printers, and entire classes come there on a rotating schedule to work on research or write reports using AppleWorks, and to learn how to search on the Internet. Ten laptops are kept in the writing lab for the students to check out to take to other classrooms. Fifth-grade students in the focus group commented that access to laptops “to put pictures in documents” is one aspect of this school that makes it different from other elementary schools.

The writing specialist believes that magnet schools are able to offer students more enrichment activities than non-magnet schools can and that the magnet program adds a lot more “special qualities” to writing. The art specialist stated that, thanks to the MSAP grant, the students at this school have many opportunities to learn about art that other students in the district do not have.

Some creative teaching was also observed at the comparison elementary school. In one fourth-grade classroom, the classroom had been rearranged to accommodate an end-of-year activity involving various cultural areas. Students had developed displays of a culture they had learned about, and German, Polish, African, Native American, Mexican, Asian, and other cultures were featured. The school also emphasizes social skills and a nurturing environment.

Infusion of technology

Teachers in MSAP elementary school No. 1 make good use of equipment such as overhead projectors (some projecting images or words from computers), and students are frequently seen using computers to do class work or to conduct research on the Internet. For example, in a first-grade classroom the teacher used the computer to review each of the previous week’s spelling words as it flashed on the screen every three seconds. The activities of both teachers and students indicated that they are very familiar with computers and are comfortable in using them for a variety of purposes.

As in elementary school No. 1, there was widespread use of technology in MSAP elementary school No. 2. Teachers made frequent and skillful use of overhead projectors, Elmos (electronic visual presenters), and computers at each grade level. The teachers are required to input grades and other information on the computer and are assisted by the technology specialist as needed. Students use classroom computers for research on the Internet and for specific content in software programs. In the computer lab, for example, second-graders were observed doing individual work using a Josten’s program. In many classrooms, three or four students were seen at work on computers, having completed the work that the rest of the class was doing or having mastered the skills being taught.

Overview of Middle Schools

At the middle school level, AIR focused on one MSAP-supported school and a comparison school in District B.

MSAP middle school No. 1 is the district’s largest middle school and its newest magnet, becoming a magnet school with the award of the district’s 1998 MSAP grant. The school serves a socioeconomically disadvantaged area, and a school administrator estimates that about 20 percent of the parents cannot read or write. The school’s neighborhood is not a “blighted” community, a school administrator pointed out, but rather working class. The parents are appreciative and are looking for help; they want their children to have a better life.

Most of the students for whom English is not their primary language are mainstreamed; however, an ESL teacher at the school teaches English, reading, and some social studies. Most students in need of special education are also mainstreamed. All teachers have special education students in class with a combination of paraprofessionals and certified teachers to help them.

Approximately half of the students are bused in to the school, and the others live within walking distance.

The **comparison middle school’s** student body is ethnically and socioeconomically balanced with the town’s population, according to school administrators. Enrollment has decreased somewhat, or at least leveled off, in the past few years, and one reason may be the change of the other middle school in the district from non-magnet to magnet. According to the school administrator, the students’ family backgrounds are “eclectic.” Some students are bused in from the poorest areas of the city. They may have dirt floors, no utilities, or live in trailers. There are also students who feed in from affluent neighborhoods, and “everything in between.”

Major construction of a new building with 30 new classrooms and science labs is underway, which involves tearing down buildings, using portable classrooms temporarily, and having teachers share classrooms. The comparison middle school appeared to be more traditional in its general appearance. MSAP middle school No. 1 displayed much more artwork, posters, photographs, and other materials on the walls—both inside and outside the classrooms—than at this middle school.

MSAP Middle School No. 1	Comparison Middle School
<p><i>MSAP School Theme:</i> Mathematics, Science, Creative Communication, Montessori</p> <p>Grade Levels: 6–8</p> <p>Student Characteristics: Number of Students: 1,090* Race-Ethnic Breakdown of Students:</p> <ul style="list-style-type: none"> • Hispanic: 62% • White: 29% • Black: 8.5% • Asian/Pacific Islander: 0.2% • Am. Indian/Alaska Native: 0.2% <p>Percent Free/Reduced-Price Lunches: 63%</p> <p>Teacher Characteristics: Number of FTE Teachers: 75.9 Race-Ethnic Breakdown of Teachers:</p> <ul style="list-style-type: none"> • Hispanic: 41% • White: 51% • Black: 8% • Asian/Pacific Islander: 0% • Am. Indian/Alaska Native: 0% <p>5+ Years of Teaching: 95% Newly Hired: 0%</p> <p>School and Neighborhood Characteristics:</p> <ul style="list-style-type: none"> • Well-maintained • Low SES neighborhood 	<p><i>School Theme:</i> None</p> <p>Grade Levels: 6-8</p> <p>Student Characteristics: Number of Students: 971 Race-Ethnic Breakdown of Students:</p> <ul style="list-style-type: none"> • Hispanic: 52% • White: 40% • Black: 7% • Asian/Pacific Islander: 0.6% • Am. Indian/Alaska Native: 0% <p>Percent Free/Reduced-Price Lunches: 51%</p> <p>Teacher Characteristics: Number of FTE Teachers: 75.8 Race-Ethnic Breakdown of Teachers:</p> <ul style="list-style-type: none"> • Hispanic: 41% • White: 56% • Black: 0% • Asian/Pacific Islander: 3% • Am. Indian/Alaska Native: 0% <p>5+ Years of Teaching: 85% Newly Hired: 8%</p> <p>School and Neighborhood Characteristics:</p> <ul style="list-style-type: none"> • Plain, but well-maintained • New building construction • Commercial area

* Data are from 1999-2000 school year

Program, Theme, Goals

School foci

MSAP middle school No. 1's first year as a magnet was used for planning. The school's theme is a combination of mathematics, science, and creative communication, and the curriculum

School themes. *One MSAP middle school's theme is a combination of mathematics, science, and creative communication, and the curriculum emphasizes real-world problem solving and promotes higher level thinking skills, utilizing underlying Montessori concepts.*

emphasizes real-world problem solving and promotes higher-level thinking skills, utilizing underlying Montessori concepts. The school is moving toward a Career Academy model, focusing on quantitative and qualitative career

exploration programs, student empowerment, and education relevant to careers to provide students with real-life experiences.

Although a "true" Montessori curriculum is not offered in the magnet program, since Montessori programs extend only up to 12-year-old students (sixth-grade), individual responsibility and other aspects of the Montessori philosophy are emphasized. The goal of the principal, who only started the previous fall and was new to magnet schools, is to prepare students for high school and college in a structure that maintains the Montessori discipline of project-based learning and social skills. A training process in the Montessori discipline was to commence, and all new teachers are being trained in the Montessori philosophies. Twenty teachers were trained in Montessori concepts in the summer of the first grant year and another seven in the summer of the second grant year. It was anticipated that within a year a Montessori team would be in place at all grade levels. Six eighth-grade students in a focus group commented that at middle school No. 1 the "teachers are devoted to their job, "teachers help a lot," and "they take the time to help out one-on-one."

Like the MSAP-supported middle school, which has a 20-minute block of time in the afternoon reserved for targeted preparation for the state's standardized test, the comparison middle school puts a great deal of emphasis on improving scores on the state test. As a school administrator explained, the state test drives what the teachers do in their curriculum and instruction. The school has met its goals for improved test scores, so the principal believes that students are academically successful.

Magnet school resources

The MSAP grant in middle school No. 1 has provided teachers with time to carry out curriculum alignment, the personnel to call in parents, and the resources to secure materials for research and to provide teacher workshops on strategies in areas such as engineering and technology. The grant prompted changes in the middle school building such as the addition of a saltwater aquarium in a classroom, a ferret run, a solar system in the hallway, and new murals.

The MSAP grant funds were also used to support hiring a curriculum coordinator (the original MSAP curriculum coordinator was replaced with a new coordinator in the third year of the grant). The MSAP grant has allowed them to "open up the world" to relevant, hands-on curriculum, and enables the students to be curious and want to learn, according to the new curriculum coordinator.

Even though this middle school had just switched from non-magnet to magnet for the MSAP grant, the fact that the district has a long-standing history of magnet programs has certainly helped provide them with some “lessons learned” and guidance. The district’s magnet office is actively involved in coordinating the program and is attentive to the school’s needs. The new principal and MSAP curriculum coordinator, who were both novices in the Montessori philosophy and magnet schools, appeared to be managing well under the circumstances. They are both enthusiastic and have a common vision for the school.

Professional development

Teacher professional development seemed to be equally as important at both the MSAP middle school and the comparison middle school. At MSAP middle school No. 1, the first curriculum coordinator primarily focused on staff development and thematic units, and she reportedly played an instrumental role during the school’s planning year. All teachers are currently trained in gifted and talented instruction; other professional development has provided increased training in technology, critical thinking, skillful decisions, alignment of technology and the state test, test-taking strategies, hands-on computer training, and organizational structures. Training on project-based learning and creative or critical thinking skills was to be held prior to the next school year, and the teaching staff was to receive a research packet with key instructional tools.

Recent professional development at the comparison middle school has focused heavily on reading and writing strategies in general and test score improvement in particular. Training during the school year was mandatory for the entire staff, and the optional summer retreat also included training in reading and writing: 76 teachers and 15 paraprofessionals attended the day-and-a-half retreat.

Technology

MSAP funds were used for equipment in MSAP middle school No. 1’s technology lab, which opened in early 2000. It includes a wiring closet, a LAN server and the structure for it, plus other items such as drawpads, printers, scanners, digital cameras. The technology coordinator maintains that the school is more computer-wired than any non-MSAP schools in the district, and that “it’s come a long way” in the last year. Available at four workstations are different computer programs including aerospace, robotics, video production, construction, communications, and other topics related to the school’s elective courses. The school also has 55 iBooks: some are in departments and more than half are available to students on a checkout basis.

According to the technology coordinator, who conducts most of the technology training for the teachers and other staff, the overall attitude of the staff and students has changed because of the MSAP grant. With the additional technology and other resources, they feel an added sense of responsibility to do something positive with it all. They see that the district and the school are providing the tools to succeed.

Although the comparison middle school was in the process of constructing new classrooms and upgrading their computers, the level of available technological resources appeared to be far below that of the MSAP-funded middle school. The magnet school had a greater number of computers in each classroom, more software and hardware available in technology labs, and more innovative

programs such as digital photography, broadcast, and media. This is being ameliorated somewhat by a new \$100,000 technology grant and district funding for technology.

At the time of the second visit to the comparison middle school, the new two-story building was completely wired. The school had about 30 computers wired for the Internet, and almost every teacher had a computer. A computer lab aide position had been added, and the aide was working on a regular basis with the students on tutorials in English and mathematics, career development quizzes, and life coping skills.

School Instruction and Activities

Classroom activities

An innovative practice of MSAP middle school No. 1 is offering “mini-courses” for the seventh- and eighth-graders. The students rotate every nine weeks for these mini-courses, which

Innovative courses. *An innovative practice is offering “mini-courses” for the seventh and eighth-graders. The students rotate every nine weeks for these mini-courses. Examples of the mini-courses are aerospace technology, digital photography, environmental science, and writing careers. Eighth-grade students in the focus group commented that the mini-courses are what makes this school different from other middle schools.*

allows students to take four of the courses during the school year.

Examples of the mini-courses are aerospace technology, which uses simulation programs to help students explore the solar system and various aspects of traveling and living in space; digital photography; environmental science, which includes development of the natural trail around the school, studying wetlands, and investigating water

conversation as it affects their city; and writing careers, which helps students learn about jobs such as magazine writer, newspaper reporter, and novelist. Eighth-grade students in the focus group commented that the mini-courses are what makes this school different from other middle schools.

The mini-courses observed exhibited creativity and innovation. One was “Astronomy and Animals” in a classroom with a variety of animals, the most noticeable a ferret in a clear tunnel that runs along the ceiling in the class and over the hallway to the class across the hall. The astronomy portion of the class was in session, and the class had built rockets and a Mars rover that was controlled with a joystick and moved around in a plastic swimming pool which students decorated to look like the surface of Mars. The Mars rover also had a web cam on it, as did one created by students at MSAP elementary school No. 2, and the two schools send images to each other over the Web from the perspectives of their Mars rovers.

Seventh-graders also explore two semesters of career classes in consumer sciences and engineering technology, previewing the expanded courses for eighth-grade. In the eighth-grade students have an opportunity to choose from a variety of career blocks, with two courses in each block including agricultural science, with an emphasis on animals and plants and hands-on experience in landscaping, horticulture, small animal care, and engineering technology; health careers, including CPR, first aid training, and introductions to anatomy and physiology, connecting with health issues and health care occupations; and business, marketing, and the stock market.

Some of the classes observed at middle school No. 1 utilized hands-on strategies. In a sixth-grade mathematics and science class, a color-coded lesson plan was hanging in the room. Each color represented a different type of mathematics problem (e.g., number lines, subtracting decimals, converting kiloliters to liters) that students completed as a daily activity. Part of the lesson of the day was the CD-ROM “The Voyage of Mimi,” which takes the students on a “field trip to the sea” to learn more about, for example, whales and the ecosystem, and the teacher said that the students have many “hands-on” projects throughout the school year.

In a sixth-grade Montessori math and science class observed in a science lab, students were working on the instrumentation of a space probe, and they reviewed and graded a quiz covering terms such as magnetic field, imaging system, meteorology, solar perimeter, infrared interometer, radiation, scan platform, thrusters, and cosmic ray detector. The teacher then distributed check registers and checks and told students that they each had \$300 to spend. They were to figure out what they would spend it on and then record and subtract each expenditure in the register. Most of the students were excited about this new project and asked a lot of questions about how they could submit the receipts and what items they could buy.

A seventh-grade reading class observed at the comparison middle school had only 11 students; the portable classroom in which it met had one computer, one printer, and one overhead projector—less equipment than in the MSAP middle school’s classrooms. A book from the 1800s about a secret galleon was the topic of discussion for this class period. The teacher noted that the students preferred to read together as a class rather than read independently.

In general, the mathematics and reading classes observed at the comparison middle school were more traditional than in the MSAP middle school, and this school did not offer any innovative mini-courses. One class, “Fundamentals of Academics and Conduct” (FAC) was somewhat unique and was developed by the teacher. The FAC is an educational plan of programmed instruction to modify the conduct of behaviorally challenged students; a patent was pending.

The students appeared to be less engaged in their classroom activities in the comparison middle school, and it is not clear if it was because of less creative instruction, the particular classrooms visited, more behavior problems, or because they were not as used to observers as in the magnet middle school.

Infusion of technology

As mentioned earlier, MSAP middle school No. 1 had far more technological resources available to the students, although a new grant at the comparison middle school was intended to be used for upgrading their technology.

In a broadcast communications class at middle school No. 1, a large variety of technology equipment was evident, including cameras, a soundboard, a microphone, VCRs, TVs, and computers. The school has a TV station with four cameras, and each student presented a practice one-minute live TV broadcast in front of the camera, with classmates watching and critiquing. Students also took turns running the soundboard, audio scroll, and other necessary devices. An FM radio station enables students to broadcast within a two- to three-mile radius.

In the impressive digital photography lab, the students have the ability to run 12 computers (including 3 iMacs), use the Mac slide show, PowerPoint, scanners and CDs, and the CD Scriber.

Use of technology. *In the impressive digital photography lab, the students have the ability to run 12 computers (including three iMacs), use the Mac slide show, PowerPoint, scanners and CDs, and the CD Scriber. Students videotape and photograph all of the school events, make the programs for all of the functions (such as the spring band and choir performances), work on the yearbooks, and make honor roll certificates and certificates of achievement. They print all of their own material.*

Students videotape and photograph all of the school events, make the programs for all of the functions (such as the spring band and choir performances), work on the yearbooks, and make honor roll certificates and certificates of achievement. They print all of their own material. The students have

stored all of the discs for their school events and they had a master list of more than 400 events in the last year.

Students were learning to use iMovie, pasting together movies. They were working on a movie that they planned to submit to the local education station, and they had also put together a design for a book fair. At a local drama theater the previous week, students took all of the photographs and created a marquee board, scanning in the artwork, added borders and coloring it in Claris. In short, students were increasing their skills as they gained experience with the school's new equipment and technology. As mentioned earlier, the school feels that they have the responsibility to do something positive with the additional technology, and the students' contributions to the school's artwork and media displays indicate that this is taking place.

Impact of clusters

At MSAP middle school No. 1, in the sixth-grade, there are two "traditional" groups with five teachers (social studies, mathematics, reading, language arts, and science) and groups of about 120 students with the same schedules. The Montessori classes have three-member teacher teams with about 50-60 students in each group. The three-member teams consist of one teacher who teaches mathematics and science, one teacher who teaches English and language arts, and another teacher who teaches social studies and character education (the Respect and Protect program also used in the elementary schools). The curriculum coordinator believes that these smaller student groups and smaller teams of teachers enhance the rapport between the students in the groups and allow the teachers to get to know the students and their parents better. One of the teachers stated that this arrangement has helped her three-member team to come up with common goals for the students.

The comparison middle school is organized into clusters, with 100 students in each cluster and five teachers for about every 100 students. The English, reading, mathematics, and social studies teachers talk about the needs and progress of the students in their clusters. The teachers use different strategies to deal with the students, based on whether the students' difficulties are due to personal problems or learning problems.

When the magnet project was being implemented at middle school No. 1, it was decided to shift teachers around within the school, rather than hire new teachers, and block scheduling was initiated. Students have extended class periods and take their eight classes over a two-day period. The staff at

the comparison middle school discussed the idea of switching to block scheduling, which the MSAP middle school already had implemented, and by the time of the second site visit, the comparison middle school was using it for eighth-grade language arts.

Summary

MSAP-funded magnet schools were first established in District B as part of the desegregation agreement in 1993, and many of the same magnet schools were carried over to subsequent MSAP grants. In the 1998-2001 MSAP grant the district had six MSAP-supported magnet schools: five elementary and one middle school. Outlined below are some of the benefits and challenges that District B and the magnet schools have experienced in the 1998-2001 grant cycle, as well as some lessons they have learned along the way, and the MSAP Project's plans for the future.

Benefits

One of the main ways MSAP has benefited District B is in providing resources to pilot test ideas before adopting programs districtwide. The MSAP Project has served as an informal research and development department for the district. For example, the standards initiative, environmental centers, generational poverty training, school Web sites, family nights, and infomercials all started with the MSAP-supported schools and have been implemented districtwide. Teachers at MSAP-supported schools have had the opportunity to access cutting edge professional development, and teachers in non-MSAP schools in the district have been invited as space permits. The MSAP grant has enabled all of the MSAP schools in this district to improve their technology in areas such as the aerospace and broadcasting themes, computer labs, and a digital photography lab.

Challenges

The greatest reported challenge in District B is the pressure on the schools to improve reading and mathematics scores on the state assessment. This pressure limits the magnet school teachers' ability to be innovative in their classroom instruction and activities because the state test's emphasis on reading and mathematics drives what the teachers do in their curriculum and instruction. Yet, teachers and administrators have been successful in integrating the magnet themes into the MSAP-supported schools' curriculum, such as the aerospace theme that is apparent in the classrooms in elementary school No. 2, and the broadcasting and publishing theme that is integral to elementary school No. 1's curriculum. The state is adding science and social studies to the assessment, which will likely affect instruction in the future, because it will become easier to broaden the focus beyond reading and math.

Lessons Learned

School administrators in District B have learned that changes or additions of magnet themes keep their schools viable. Elementary school No. 1 was initially a fine arts magnet, but the school was not attracting the students it had hoped for, and test scores remained low. The staff's interest in

Changing themes. School administrators in District B have learned that changes or additions of magnet themes keep their schools viable. A fine arts magnet was not attracting the students it had hoped for, and test scores remained low. The staff's interest in technology evolved into a broadcasting theme and subsequently a publishing theme was added.

technology evolved into a broadcasting theme and subsequently a publishing theme was added. Elementary school No. 2 originally was a science and mathematics magnet, and aerospace seemed a natural addition. In the past, elementary school No. 3 had a gifted and talented program, and then added global technology. This program was changed to academic excellence when they were not drawing enough students. According to

the school administrator, the theme changes initially led the community to believe the school was unstable, but they eventually realized that the current program is just an enhancement of the previous themes. Middle school No. 1's theme is a combination of mathematics, science, creative communication, and Montessori, and in 2001 the new principal added a career exploration program. His intention is not to change the themes that had been in place previously, but to enhance the existing programs and prepare students for high school and college. Future plans below also indicate the need for multiple themes in the MSAP-funded schools.

Plans for the Future

District staff expect to continue to emphasize magnet schools as an approach to school improvement in District B. In 2002, all of the magnet schools that were supported under 1998-2001 MSAP funds are still operating, as well as the one that is not MSAP-funded. A new MSAP grant is expected to provide support for many of the same schools, only with revised themes. According to the project director, the project plans to keep what is "good, viable," but go to the next step. For example, elementary school No. 1, the school with a broadcasting theme, will add a global, international component, with ties to local businesses and an emphasis on life skills. Elementary school No. 2, the math, science, and aerospace school, will expand to include engineering. The project will shift resources from technology specialists at the school level to a technology consultant at the district level that can serve multiple schools.

Case Study, District C

District Context

Location and Size

District C is located in a large county of over 800 square miles with more than 550,000 inhabitants. The county, located in the Southeast region of the country, contains a mid-size city, suburbs, smaller municipalities and some rural areas. The population has been rising steadily every year for the past 20 years; the number of inhabitants increased by more than one-third during the 1990s alone as a result of high migration into the county and an increasing number of births. District officials estimate 4,500 new students are being added to the district annually. The growth required construction of 23 new schools in the last seven years. There are more than 115 schools in the district and 13 new schools are projected for construction by 2003.

Student Composition

District C serves more than 90,000 public school students, including nearly 75,000 in the elementary and middle schools. The student population in grades K-8 is 39 percent minority and 61 percent nonminority. As the predominant minority group, blacks constitute 30 percent of the students in grades K-8. Approximately one-quarter of the students in K-8 are eligible for free or reduced-price lunches. Schools differ widely with respect to race-ethnic and socioeconomic composition. The proportion of minority students varies from 12 to more than 70 percent in elementary schools and from 14 to about 60 percent in middle schools. The proportion of students eligible for free or reduced-price lunches varies from less than 3 percent to more than 60 percent in both elementary and middle schools.

The main types of schools for students in District C include traditional schools, charter schools, MSAP and non-MSAP magnets, and private nonsectarian schools. District C MSAP project staff claim that private schools mainly pull students from wealthy families.

Magnet School History

In the 1970s, a single school district was created through the merger of the administration of city schools with schools elsewhere in the county. Faced with the need to desegregate schools within the newly formed district, officials began redrawing school boundaries and seeking ways to encourage nonminority to minority school transfers. Staff members at all schools were actively encouraged to implement new instructional programs, some of which were the original magnet programs in the district. A gifted and talented program introduced at an elementary school was the first magnet in the district, and was quickly followed by similar or extended-day programs at five other schools. In the early 1980s magnet schools were formally introduced into the district's plans as a voluntary method for desegregating schools by providing parents with a wider choice of educational programs that would encourage nonminority to minority school transfers. The plan catapulted the magnet program forward with magnet programs at 28 schools. Magnet programs in the district have been developed and maintained with a combination of federal and district funds.

District C was first awarded a grant from the Magnet Schools Assistance Program (MSAP) in 1985-86 to revitalize magnet programs with additional resources, new or revised curricula, staff development, and evaluation. Since then, the district has received several MSAP grants and has

worked to strengthen the magnet program by increasing the involvement of community members, commissioning an external review related to change and expansion of the magnet network, and developing a resource center that houses magnet curricula, magnet grant information, and specific program descriptions and displays.

State Systemic Reform and District Reform Initiatives

District C's state was one of the pioneers in the development and implementation of state academic standards and assessments, and both have been in place since the early 1990s. For elementary and middle school, the reading and mathematics tests are administered to students in grades 3 through 8. The state also tests writing skills for grades 4 and 7 and computer skills for grade 8.

All students are expected to achieve minimum competency requirements on the annually administered assessments, as determined by the state. The state enforces the achievement of minimum requirements by grading schools on the basis of the overall achievement scores of their students. Failure to meet minimum requirements for three consecutive years can result in the state department of education assigning a state assistance team to a school, with autonomy to replace administrative personnel (e.g. principals, assistant principals) and change curricula.

All schools are expected to teach the state content standards. Department of Public Instruction (DPI) curriculum and assessment staff members work together to ensure that all state tests reflect the goals and objectives of the state standards. Some teachers serve as liaisons and work with DPI curriculum and assessment experts to identify ways to assess students' knowledge of the curriculum through both open-ended and multiple-choice formats.

According to the project director, "Everything that the district does is working toward the board of education's goal," which is alignment with state standards and having 95 percent of all students be at or above grade level in all content standards by 2003. Staff at every school visited during both years' site visits noted that the state standards and assessments were tantamount in guiding the development and teaching of curricula.

Project Characteristics

Overview

The 1998 MSAP grant in District C supports four whole-school programs and an experimental accelerated learning centers program. The whole school programs, which are available to all magnet students, serve students in two elementary and two middle schools. Similar to programs-within-a-school (PWSs), the accelerated learning centers program provides a select number of elementary school children with more individualized educational programs. Unlike traditional PWSs, the centers program serves students from three year-round elementary schools during scheduled inter-sessions in the students' school year.

The MSAP whole school programs in this district operate with revised gifted and talented themes at one of the elementary schools and one of the middle schools, a new global communications theme at another elementary school, and a combination of a new Pre-International

Baccalaureate and integrated arts theme at the other middle school. At an instructional level, project-based learning and everyday use of technology are embedded into the themes of each program. At an assessment level, the MSAP schools rely on the state's standards-based tests.

Approximately 14 months of planning by the steering committee, which involved the district's central administration, principals, parents, community members, and the project director went into the development of these magnet programs. From the district's central administration, the steering committee consisted of the assistant superintendent for curriculum, representatives from the district's department of evaluation and research, the director of student assignment and school board members.

The steering committee wrote the grant and worked jointly with individual school committees to determine the best themes for each school, although the steering committee maintained final approval of the themes. Decisions were based on individual school needs, program resource requirements, and theme preferences among parents as determined by surveys. The Pre-International Baccalaureate program required the hiring of several foreign language teachers. Both the school and the steering committee decided that those hires would be a valuable asset to the school and community. On the other hand, the steering committee and a school committee jointly decided that a micro-society theme for one of the elementary schools was not the best choice. Given available resources, the committees decided that a global communications theme would be easier to integrate across the curriculum as compared to the micro-society theme.

District-Level Staffing

District C employs a senior director who operates out of the superintendent's office and maintains full responsibility over all magnet programs operating in the district, including those supported by MSAP. The senior director places responsibility and authority for the MSAP program in the hands of the project director.

The project director oversees all of the operations of the MSAP-funded schools and supervises all of the staff in the magnet resource center. The center serves all magnet programs in the district, provides resources for program planning and development of curriculum, and is the information distribution and recruitment center for the district's school choice options. Staff include a recruitment specialist, a curriculum specialist, a director of the accelerated learning centers program, and an accountant. The project director spearheaded the development of the various themes and the implementation of the magnet programs at each of the MSAP schools, so she is well versed on the intricacies of all the programs. She works directly with MSAP-funded staff members at individual school sites, providing guidance and leadership, in addition to ongoing professional development. Sessions focusing on brain research and multiple intelligences are two examples of the varied professional development activities organized by the project director. She also talks with new families who come into the center, providing them with specific information about, and experiences with, programs to help them make informed decisions for placing their child.

The recruitment specialist maintains responsibility for the operation of the choice plan in the district, coordinates magnet fairs and heads evening information sessions. She is in charge of maintaining and updating the MSAP Web site for the district and for developing and distributing material such as brochures, videos, and newsletters.

The curriculum specialist is hired with local school funds rather than MSAP funds as she is responsible for curriculum in all district magnet schools. She takes charge of developing the school-specific electives and the curricula for those electives. During the MSAP planning phase, she worked with liaison teachers to develop course descriptions and yearly plans for the electives to include in the MSAP proposal. In the implementation phase, the curriculum specialist assists all teachers and school administrative staff in all schools with application of the various curricula. The curriculum specialist is responsible for making certain that all magnet teachers in the district review and understand all the curriculum objectives for grades K-8.

The director of the newly developed accelerated learning centers program works with the MSAP project director on program costs, teacher and student recruitment and retention, transportation, food, and curriculum. Finally, an accountant keeps records of all expenses related to the MSAP program.

Recruitment Issues and Strategies

Applicants for the MSAP programs are recruited broadly from other schools within the district. Nearly 40 elementary schools are identified as feeder schools from which students are recruited to attend the two MSAP elementary schools. A total of 17 different middle schools serve as feeders for the two middle school magnet programs. This practice is consistent with the district's emphasis on providing all parents with a choice of the educational plan that is most appropriate for their child.

The recruitment efforts for the district's two elementary and two middle school MSAP programs resulted in applications from nearly 400 students in the first year of the project, and over 650 applicants in each of the subsequent years. According to the recruitment specialist, the most successful recruitment activities used by District C included:

- Magnet Fair—one stop shopping display of all magnet schools.
- Evening information sessions—hosted at non-magnet schools.
- Web site—contains brochures, magnet videos, magnet school descriptions, links to individual schools' web pages, schedule of events, on-line applications, and responses to questions.
- The Magnet Resource Center—contains information and knowledgeable staff about all magnet schools in the district.
- MSAP-school open house sessions—on-site visits for parents and students.
- Conversations with realtors—they can get the word out to parents and families who are new to the area.
- Parent Volunteer Committee—provides assistance with recruitment ideas.

Two strategies that the district found to be least successful included:

- Newspaper ads—Ads are not cost effective because they do not reach a majority of subscribers unless one can afford to pay for the best spots in the newspaper.

- Public Service Announcement—The district found these to be “really hit or miss on both television and radio programs.”

Desegregation Plan and Objectives

District C’s voluntary plan for desegregating its schools began in 1982. That plan commits the school district to parental choice of the appropriate educational program for their child, to development of each student’s gifts and talents, and to desegregated schools. District officials view magnet schools as an essential component of that plan and has expanded the number of magnet schools operating in the district since it first implemented this plan.

The district’s 1998 MSAP project was an instrument for carrying out its voluntary desegregation plan. The project aimed to eliminate minority isolation (i.e., lower minority enrollment to 50 percent or less) at four MSAP-funded schools, including two elementary and two middle schools, by recruiting nonminority students to the magnet programs at those schools. In addition, the project sought to prevent minority isolation (i.e., maintain minority enrollment at 50 or less for schools that did not exceed 50 percent minority enrollment in 1997-1998) or eliminate minority isolation at seven elementary schools by attracting minority students from those schools to three year-round elementary schools where the percentage of minority students is much lower.

Minority students generally represented between 51 and 60 percent of the 1997-1998 enrollment in the schools that the project had targeted for desegregation. By comparison, minority students represented about one-third of the 1997-1998 enrollment in the district’s elementary and middle schools. Between 1997-1998 and 2000-2001 the percent minority enrollment in the district increased by several percentage points, largely as a result of the growing number of minority students in the district.

Despite the large number of applications generated by the district’s recruitment efforts, District C was not able to eliminate or prevent minority group isolation in the schools targeted for

Minority group isolation. District C was not able to eliminate or prevent minority group isolation in the schools targeted for desegregation.

desegregation. Growth in the number of minority students in the district, particularly in the desegregation-targeted schools, constrained the ability of the project to prevent or eliminate MGI. The increase in percent minority enrollment was less than the

districtwide increase in 4 of the 11 desegregation-targeted schools. While not eliminating MGI, the Department of Education would consider these four schools to have made progress in reducing minority isolation. However, the increase in percent minority enrollment in 7 out of the 11 desegregation-targeted schools exceeded the districtwide increase. These schools did not make progress in reducing MGI.¹⁸

A number of factors may have limited the district’s ability to reduce MGI. From the district’s perspective, constraints on the selection process were important to the outcomes. The district, in

¹⁸ Another means of demonstrating a program’s effectiveness if MGI in a targeted school increases above the districtwide increase is to show through methods such as transfer data that MGI would have increased even further had it not been for students enrolling in a magnet program from outside the school’s attendance area. Such data were not generally included in the annual reports available for this study.

light of recent legal trends regarding the use of race in student assignment, considered eligibility for free or reduced-price lunch and reading scores when making assignments. The project director reported that the constraints of a race-neutral selection practice make it very difficult to reduce minority group isolation.

Second, project officials report that less than half of their outreach focuses on a targeted group of students, which appears to be consistent with the types of outreach activities that project officials have described. In order to increase the proportion of nonminority students selected to magnet programs in minority isolated schools, the project may need to consider devoting more resources to promoting those schools in areas with higher proportions of nonminority students.

Third, project officials maintain that despite the large number of applicants, competition from new elementary schools in the district has a negative impact on actual enrollments as families typically see new schools as highly desirable.

Fourth, the year-round elementary schools are popular and have more applicants than they can accept. Thus, space restrictions limit the number of applicants from high minority elementary schools that can be accepted into year-round programs where the percent minority enrollment is lower.

Fifth, the project director pointed to renovation of one of the MSAP middle schools as a limiting factor in recruiting new students because of its impact on the visual appearance and functioning of the school.

Finally, each of the four MSAP-funded schools in the project recognizes an attendance zone, with students living in the zone being given priority for enrollment. The principals for these schools report that over 50 percent of the students in their school reside in the neighborhood attendance area. This practice may limit the openings for nonminority students from outside the neighborhood to be accepted to the program even if they apply.

The Role of the MSAP Project in Supporting State Systemic Reform and Other District Initiatives

While magnet schools teach vastly differing curricula based on their schools' themes, every school in the district, including magnet schools, adheres to the same state content standards and is

Anxiety over state assessments. *The site visit team observed a great deal of concern and anxiety over the state assessments throughout all of the schools visited. Faculty expressed concern about being assigned a state assistance team if the school did not meet student minimum competency requirements.*

expected to prepare students adequately for state assessments. The project director states that the MSAP schools in District C, in collaboration with the magnet resource center, invested time and energy developing practical, teachable applications of the state

content standards to fit their schools' themes. Each school maps the state content standards against the goals associated with them to develop a scope and sequence for every grade level that meets the intentions of the curricula.

The AIR site-visit team found a great deal of concern and anxiety among faculty over the state assessments throughout all of the schools the team visited. The faculty in every school expressed concern about being assigned a state assistance team if the school did not meet student minimum competency requirements. The assignment of such a team is seen as signifying a failure on the part of the teaching and administrative staff. The consequences can be loss of jobs for administrative personnel and forced change to curricula and pedagogy in order to meet state requirements. The latter was of concern to most of the teachers with whom the AIR team spoke. In addition, the administrative personnel and faculty in MSAP schools noted repeatedly that district officials and the general public assume that additional funding automatically translates into improved performance on state assessments. However, no extra time is allotted for the magnet themes to take hold in the schools, leaving teachers to learn a new theme or curriculum, learn how to teach it, and be mindful of the state content standards and assessments simultaneously.

Student Achievement

District C defined its objectives in relation to student proficiency on the state's annual assessments for mathematics, reading, and writing at various grade levels and for computer skills at the end of middle school (grade 8). The primary MSAP objectives called for minority and nonminority students in MSAP-funded schools to show greater gains in the percentage of students testing proficient compared with districtwide gains for those groups.

Although the MSAP project did not fully meet its student achievement objectives, the MSAP schools did experience greater improvement in proficiency for their minority students in some

Testing gains. *Increases in the percentage of minority students testing proficient in MSAP-supported schools surpassed districtwide gains in proficiency for minorities in mathematics and reading at the elementary level and in writing and computer skills at the middle school level. Among nonminority students, the only area in which the gains for MSAP students surpassed districtwide gains was in the writing proficiency of middle school students.*

subject areas compared with other minority students in the district. Increases in the percentage of minority students testing proficient in MSAP-supported schools surpassed districtwide gains in proficiency for minorities in mathematics and reading at the elementary level and in writing and computer skills at the middle school level. Among nonminority students, the only area in which the gains for MSAP students surpassed districtwide gains was in the writing proficiency of middle school

students. However, nonminority students in the MSAP schools and districtwide generally had proficiency levels of 90 percent or higher in many assessment areas at the start of the project.

The project maintained an alternate objective in which each of the four MSAP schools would meet the minimum performance levels and growth targets set by the state. This objective was less complex and ambitious than the primary set of objectives. The state goals called for annual improvements in the state's performance index score in mathematics, reading, writing, and, for the middle schools, algebra. All four of the schools met these state-imposed targets. Meanwhile, one of the comparison schools that the AIR team visited received a failing grade for two consecutive years, thereby placing it in great jeopardy of receiving a state assistance team.

District C also set goals in mathematics and reading for students in the accelerated learning centers program with the expectation that the performance of students who are at risk of performing below grade level could be accelerated by extending the amount of individualized learning time over the course of each year. To date, relatively few children appear to have been enrolled in this program and the centers have yet to meet their goals.

Professional Development

District C uses MSAP funds for professional development, both at the individual school level and at the project level. At the project level, professional development activities are held at the magnet resource center at least twice a month to update staff on the status of the MSAP grant and attainment of objectives, to train district and school staff on new curriculum or newly acquired technology, and to plan for the schools' futures. The project director believes that maintaining a "home" dedicated to ensuring the success of the MSAP programs helps give individual MSAP school staff the support and encouragement they need to implement the programs properly.

Theme-related development. *At the individual school level, staff acquire ongoing professional development related to their schools' specific themes. For instance, the middle school implementing the Pre-International Baccalaureate program required that all teachers receive 100 hours of professional development every year of the grant.*

At the individual school level, staff acquire ongoing professional development related to their schools' specific themes. For instance, the middle school implementing the Pre-International Baccalaureate program required that all teachers receive 100 hours of professional development every year of the grant. While other schools did not require as much professional

development as this middle school, MSAP-funded staff worked closely with the administrative personnel to ensure that the themes were functioning as planned within the schools.

Innovative Practices

Although innovative practices can be understood more thoroughly by reading the individual school descriptions, District C did have some project-wide innovative practices:

- Incorporation of technology into daily instruction.
- Magnet resource center.
- Accelerated learning centers program.
- Mentoring program.

Accelerated learning centers. *The MSAP-funded accelerated learning centers program model has been adopted by other year-round schools in the district. This program provides accelerated learning opportunities for year-round elementary school students during school intersessions and an increase in parental and community involvement in educational programs.*

Although still in its formative stages even for the MSAP project, the MSAP-funded accelerated learning centers program model has been adopted by other year-round schools in the district. This program provides accelerated

learning opportunities for year-round elementary school students during school intersessions and an increase in parental and community involvement in educational programs.

MSAP-funded schools receive numerous visitors requesting information on the functioning of their programs (e.g., information on how to infuse themes across the curricula, incorporate technology into their curricula rather than treating it as a stand-alone activity, and develop and maintain successful mentoring programs with members from the community).

School Level Programs and Activities

This case study describes findings from site visits to District C in spring 2000 and spring 2001. These visits focused on two MSAP elementary schools, two MSAP middle schools, the accelerated learning centers program, and two non-magnet comparison schools (one elementary and one middle school). AIR selected comparison schools that had demographic compositions similar to the MSAP-supported magnet schools, but which did not operate magnet programs. One student focus group, with six to eight students, was conducted in each of the MSAP schools.

Overview of Elementary Schools

At the elementary level, AIR focused on two MSAP-supported schools and one comparison school in District C.

Both of the MSAP elementary schools and the comparison school are located in the district's urban center, which is a mid-size city of less than 250,000 inhabitants where the school buildings tend to be older compared with schools outside of the city. Each of the schools serve around 450 to 550 students in grades K-5, which is smaller than the district average for elementary schools but comparable to other elementary schools in the district's urban center. The MSAP and comparison elementary schools have more than 50 percent minority students, with blacks being the largest single minority in each. By comparison, minority students in the district as a whole, as well as in the city, represent less than 45 percent of the elementary school students.

Although well-maintained, **MSAP elementary school No. 1** has been the target of occasional vandalism (e.g. painted graffiti and destroyed student-made gardens) for the past few years. According to the principal and several teachers, efforts to make students feel secure and positive about the school translate into administrators, staff, and parents working quickly to repair any damage done. The school staff indicated that one of their goals is for students to learn not to be hindered by such outside, uncontrollable problems and see that adults can work together effectively to fix a problem that affects their environment.

Located in a predominately minority neighborhood, **MSAP elementary school No. 2** is in excellent physical condition. Despite the school being over 40 years old, the grounds, building hallways and classrooms are clean and orderly, resembling the physical atmosphere of a new school. The main office of the school is equipped with television monitors that display video images from inside and outside of the school to help maintain a safe and secure environment.

The **comparison elementary school** has been the recipient of a national Blue Ribbon School award and was visited by representatives from the U.S. Department of Education. The atmosphere of the school is warm and comforting, exemplified in the care with which student work is displayed throughout hallways in the school. This student population of 536 is the largest of the three elementary schools that AIR visited, and classrooms appeared to be at full capacity or overcrowded. Nevertheless, students in the school seem well behaved.

MSAP Elementary School No. 1	MSAP Elementary School No. 2
<p><i>MSAP School Theme:</i> Global Communications</p> <p>Grade Levels: K–5</p> <p>Student Characteristics Number of Students: 494** Race-Ethnic Breakdown of Students:</p> <ul style="list-style-type: none"> • Hispanic: 2% • White: 46% • Black: 52% • Asian/Pacific Islander: <1% • Am. Indian/Alaska Native: 0% <p>Percent Free/Reduced-Price Lunches: 37%</p> <p>Teacher Characteristics Number of FTE Teachers: 36 Race-Ethnic Breakdown of Teachers: * Predominantly White 5+ Years of Teaching: NA Newly Hired: NA</p> <p>School and Neighborhood Characteristics</p> <ul style="list-style-type: none"> • Older building, built in 1950s • Well maintained, renovated in 1997 	<p><i>MSAP School Theme:</i> Gifted and Talented Mathematics, Science and Technology</p> <p>Grade Levels: K–5</p> <p>Student Characteristics Number of Students: 430 Race-Ethnic Breakdown of Students:</p> <ul style="list-style-type: none"> • Hispanic: 1% • White: 45% • Black: 40% • Asian/Pacific Islander: 13% • Am. Indian/Alaska Native: <1% <p>Percent Free/Reduced-Price Lunches: 29%</p> <p>Teacher Characteristics Number of FTE Teachers: 33 Race-Ethnic Breakdown of Teachers: * Predominantly White 5+ Years of Teaching: NA Newly Hired: NA</p> <p>School and Neighborhood Characteristics</p> <ul style="list-style-type: none"> • Excellent condition, built in 1961 • Traditionally minority neighborhood
Comparison Elementary School	
<p><i>School Theme:</i> Quality School Model</p> <p>Grade Levels: K–5</p> <p>Student Characteristics Number of Students: 536 Race-Ethnic Breakdown of Students:</p> <ul style="list-style-type: none"> • Hispanic: 5% • White: 29% • Black: 59% • Asian/Pacific Islander: 7% • Am. Indian/Alaska Native: 0% <p>Percent Free/Reduced-Price Lunches: 41%</p> <p>Teacher Characteristics Number of FTE Teachers: 32 Race-Ethnic Breakdown of Teachers: * Predominantly White 5+ Years of Teaching: NA Newly Hired: NA</p> <p><i>School and Neighborhood Characteristics</i></p> <ul style="list-style-type: none"> • Well-maintained • Quiet neighborhood 	

* Staffing data not available from state. Racial-ethnic characterization of teachers in tables based on observation and nonrandom survey of teachers.

** Data are from 1999-2000 school year

Program, Themes, Goals

School themes

MSAP elementary school No. 1 serves K-5 students under a new theme of global communications. The theme focuses on two broad categories of communication: 1) learning

Global communications theme. MSAP elementary school No. 1 has a new theme of global communications, which focuses on two broad categories: 1) learning different languages and about different cultures, and becoming globally aware of the world we live in, and 2) nurturing students to communicate effectively with one another and with adults. Both tenets of the theme are stressed in daily classroom activities and throughout the school culture.

different languages and about different cultures, and becoming globally aware of the world we live in, and 2) nurturing students to communicate effectively with one another and with adults. Both tenets of the theme are stressed in daily classroom activities and throughout the school culture. According to the

principal, the broadly encompassing nature of the theme works to the benefit of the school because nearly any topic is applicable.

MSAP elementary school No. 2 operates under a revised theme of Mathematics, Science, and Technology Gifted and Talented, and works toward the school goal of effectively challenging every student by offering an array of electives and core classes that take individual students' needs and talents into account. The school lists as many (75) Academically Gifted (AG) students as it does students with either learning disabilities or other disabilities. No other reform efforts are taking place in the school intentionally so that all staff can direct attention similarly.

The comparison elementary school follows a "Quality School" model. This school resembles the two MSAP-supported elementary schools in a few respects, including attention to state content standards and assessments and professional development.

The MSAP and comparison schools pay close, detailed attention to state academic content standards and assessments. Regardless of themes or models present in school curricula or culture, there is an awareness of and appreciation for the importance of attending to the state content standards, in preparation for the state assessments. Administrative personnel and faculty proudly display the various methods used to incorporate standards into academic lessons, which include mapping out lesson plans with individual standards. Faculty in all three schools also explain that while the standards and assessments assert an aura of pressure on schools, faculty, and students to perform, they also provide a means to gauge progress and a common goal to work toward that affects everyone equally.

Professional development

Professional development is another area in which the comparison elementary school mirrors the MSAP-supported elementary schools more than might be expected. Principals in each of the elementary schools voice their strong beliefs in the need for ongoing professional development for teachers, leading to their efforts to provide the means for teachers to acquire the professional development needed. However, differences exist in the MSAP-supported schools and the

comparison school because the MSAP grant provides both of the MSAP-supported schools the resources to support these various opportunities. The comparison school principal is forced to invest time and energy searching for other grants or reallocating funds in order to provide teachers in his school the necessary opportunities.

Technology

One distinguishing feature of the MSAP schools is the attention to professional development on technology. Both MSAP-supported elementary schools average six computers per classroom. Both

Technology-focused professional development.
Both MSAP-supported elementary schools promote professional development activities that allow teachers to learn how to incorporate computer usage into daily lessons, and to realize the full potential of having equipment such as laser-disc players and digital cameras at their disposal.

schools promote professional development activities that allow teachers to learn how to incorporate computer usage into daily lessons, and to realize the full potential of having equipment such as laser-disc players and digital cameras at their disposal. MSAP funds also pay for technology specialists to assist with this endeavor,

which the comparison school lacks. The introduction of technology into daily lessons through a variety of means positively affects student engagement in classroom activities. Evidence of students using technology for instruction-related activities is readily apparent in every MSAP-supported classroom.

The prevalence of technological tools heightens students' abilities to quickly access information on a variety of topics and to use the information in classroom exercises. Every classroom maintains computers, and the goal for the MSAP-supported schools is to have students working on them in some capacity at least once a day. In lower grades, students become acclimated to computer use by typing short stories or playing mathematical software games. In upper grades, students search for material on the Internet as well as write, edit, and revise work on the computer. According to one of the students, "We're on the computers every day, doing something." According to the mission statement of MSAP school No. 2, it is the goal of the school staff "to use up-to-date technology in all aspects of learning so that each child has common opportunities and each child's needs are met through differentiated instruction."

Activities outside the classroom

Beyond the technological differences, both MSAP-supported schools afford a great amount of attention to students outside of individual classrooms. MSAP theme implementation surfaces through project-based learning, cultural fairs, and student service groups, to name a few. For example, MSAP elementary school No. 1 attends to the theme of global communications by incorporating world topics such as global warming, destruction of the rain forest, and international cultural events into every subject, and by asking students to intellectualize how any given action has benefits and consequences for other people, animals, and the land, sea, and air. Further realizations of the world's many different regions exist in the hallways of the school, which are filled with colorful professional and student-made maps, student art work of materials used in other countries for different purposes, and slogans reminding students that they are a piece of a larger puzzle that connects everyone and everything together. MSAP elementary school No. 2, likewise, provides

avenues to build strong camaraderie between students and staff, through exhibiting large amounts of student project work displayed throughout the hallways. Students in focus groups from both MSAP-supported elementary schools said, “Teachers help us be creative and make learning fun.” “They [teachers] show you tricks to help you remember.” and “The teachers are into what we are doing; they take the time to get to know you.”

Another way MSAP elementary school No. 1 staff foster communications is by inviting parents regularly to the school to observe student work and performance. One example is an after-school student presentation, attended by the AIR site visitor, during which parents were treated to a meal and able to watch their children exhibit material they had learned. Through the cooperation of several teachers in the school, students studied a French-speaking African country’s cultural rituals and eating habits. The French teacher taught students French words and phrases used in popular songs in the African country, while the music teacher taught students how to put the words and phrases to music. Mathematics teachers taught fractions by having students use ingredient measurements in preparing food for the after-school event, while language arts teachers focused on teaching reading and writing skills by having students learn more about the African country. Culminating in the after-school event, students, parents, and teachers ate the food indigenous to the country studied, listened to the students sing songs in French, and watched the students display their various art work resembling art from the African country. According to students and faculty, presentations and events such as this one are plentiful throughout the year.

In addition, the two MSAP-supported schools offer some of the following extracurricular activities that set them apart from the comparison elementary school:

- Family Read Program—Serving LEP families, administrative and teaching staff members, as well as community partners, volunteer to travel to family homes and assist parents’ efforts to become proficient in English. The intent of the program is to increase parents’ abilities to communicate in English with teaching staff and work on school-related materials with students.
- Accelerated Learning Program (ALP)—Under-achieving students receive extra teaching and tutoring. Approximately 20 extra days of teaching per year are provided to each of these students.
- Service Groups—One staff member, one parent volunteer, one community partner, and approximately 10 students work together to provide community services, such as book drives for other schools, interacting with the elderly in convalescent homes, and helping to clean-up property.
- Mentoring—Minority business and government professionals work with minority students on self-esteem building and academics. Volunteers visit the school once a week and serve as role models and mentors for minority students.

While students in the focus groups complain about the cafeteria food and lack of organized, after-school team sports, they all admit that these MSAP schools offer them a lot of opportunities (e.g., “more technology to spend time on the Internet,” “famous people visiting our school to do presentations,” “peer mediation student counselors that help students get along better”) that are not available at other schools. Every student also comments that they would not choose to attend any

other school. Teachers generally note that they enjoy working at the school and appreciate the creativity involved in teaching at magnet schools.

School Instruction and Activities

Observing school instruction and activities in both of the MSAP schools and the comparison school yields more similarities than differences. Student engagement and innovative teaching practices are present in all three schools. However, a few noticeable differences exist between the three schools. Most importantly, these differences center around MSAP elementary school No. 1 utilizing a “centers” approach to classroom instruction, MSAP elementary school No. 2 providing academically gifted (AG) students with AG-certified instructors, and MSAP-supported schools having more technology in their classrooms.

Centers

In MSAP elementary school No. 1, teachers utilize a “centers” approach during instruction, which allows them to reduce the class size into three or four groups of students working on separate tasks at one time. The “centers” rotate every 10-15 minutes so that all students engage in each of the “center” activities. This enables teachers to increase their attention to a small group of students at one time, while keeping the rest of the students busy on different tasks. These “centers” attend to the global communications theme directly by, for example, encouraging students to communicate with one another about “center” work, and to communicate with the teacher.

The “centers” serve the communication agenda well through a variety of other means as well. For example, in language arts classes “center” activities include: students reading material silently in one group and aloud in another group, writing material, editing one another’s material, searching the Internet for information, explaining recently read stories to one another, presenting completed short stories and taking tests. Mathematics “centers” focus on students completing textbook problems, explaining solutions and strategies to one another, using mathematical software programs on computers, and working through mathematics problems devised by the teacher. Centers allow students to utilize varying methods of interaction with academic material, one another, and the teacher.

Classroom instruction

In an effort to meet the needs of all students equally, MSAP elementary school No. 2 offers academically gifted (AG) certified instructors for the AG students. All third through fifth-grade teachers are either AG-certified or in the process of becoming certified. Beginning with the third-grade, students performing exceptionally well (two to three years ahead of grade level) on state assessments are given AG status and grouped together for instruction in mathematics and language arts for the following academic years. According to the principal, “It’s harder to meet the needs of the high achievers than it is to meet the needs of the low achievers.” Students identified as having moderate needs are grouped together in the other mathematics and language arts block. Low achievers are provided tutoring for their specific needs. According to the principal, the students’ writing scores on the state assessment recently improved, in part, as a result of having all faculty, including the principal and assistant principal, tutor the low-achieving students. The principal says the scores “shot up” that year.

An example of the way teachers attend to high- and low-achieving students simultaneously is a third-grade non-AG mathematics class AIR observed. The class focuses on measurement. The teacher initially stresses to students that they should try to understand the relationships between objects as a way of learning how to obtain measurements. After explaining the goal of the lesson, the teacher allows students to break into smaller groups and work on the assignment through several different means. One group of students works in the hallway, using strips of paper to wrap around their body in an attempt to decide what unit of measure would be best to use to measure someone's body. A third group of students works on computers in the class, focusing on calculating measurements. The teacher acknowledges that she attempts to address differing learning styles in the classroom by allowing students to choose the type of work that they feel is most comfortable to them, and then speaking to each student or group individually to ensure understanding.

A fifth-grade AG language arts class also provides a good example of innovative teaching and attention to individual student ability. During the lesson, the teacher reads a book that she has been reading recently to the students. She begins the lesson by asking students to recount the important points of the book. Intermittently during her reading, the teacher asks the students if they can define the phase of the story (e.g. climax) she is reading and asks them to explain their answers. She also encourages student imagination by allowing students to predict the ending of the story. She accepts answers as long as students are able to justify their predictions with events in the story up until this point. Students seem engaged in the lesson during the reading of the book and while providing answers or predictions.

Instruction at the comparison school is also engaging. The AIR team observed a first-grade reading class focused on developing reading skills and reading comprehension skills through reading a story about a moose. The teacher reads aloud from the book, asking students questions such as, "What do you think the moose will eat?" and "What do you think the moose is like?" The teacher then asks several students to continue reading aloud to the class, as she silently evaluates individual student reading abilities. Following this read aloud, the teacher instructs students to read silently with their neighbors, as she walks around the room evaluating their progress silently (confirmed during an after-class meeting with the teacher). Once every student in the class finishes reading the story, the teacher uses a "Reading Rainbow" video about the moose to demonstrate the topic further. The teacher clearly makes use of varied approaches for keeping students engaged in the lesson, while evaluating their progress. In addition, the teacher's skilled disciplining of students keeps the class orderly and on-task.

Overview of Middle Schools

At the middle school level, AIR focused on two MSAP-supported schools and one comparison school in District C.

MSAP Middle School No. 1	MSAP Middle School No. 2
<p><i>MSAP School Theme:</i> International Baccalaureate Middle Year Program (IBMYP) and Integrated Arts</p> <p>Grade Levels: 6–8</p> <p>Student Characteristics Number of Students: 1,055** Race-Ethnic Breakdown of Students:</p> <ul style="list-style-type: none"> • Hispanic: 4% • White: 48% • Black: 43% • Asian/Pacific Islander: 5% • Am. Indian/Alaska Native: 0% <p>Percent Free/Reduced-Price Lunches: 26%</p> <p>Teacher Characteristics Number of FTE Teachers: 60 Race-Ethnic Breakdown of Teachers: * Predominantly White 5+ Years of Teaching: NA Newly Hired: NA</p> <p>School and Neighborhood Characteristics</p> <ul style="list-style-type: none"> • Built in mid-1970s • Clean, but not inviting • In low-income housing neighborhood 	<p><i>MSAP School Theme:</i> Gifted and Talented for Accelerated Studies in Science, Mathematics, and Technology</p> <p>Grade Levels: 6–8</p> <p>Student Characteristics Number of Students: 1,106 Race-Ethnic Breakdown of Students:</p> <ul style="list-style-type: none"> • Hispanic: 3% • White: 42% • Black: 52% • Asian/Pacific Islander: 3% • Am. Indian/Alaska Native: 0% <p>Percent Free/Reduced-Price Lunches: 27%</p> <p>Teacher Characteristics Number of FTE Teachers: 81 Race-Ethnic Breakdown of Teachers: * Predominantly White 5+ Years of Teaching: NA Newly Hired: NA</p> <p>School and Neighborhood Characteristics</p> <ul style="list-style-type: none"> • Built in mid-1960s, recently renovated • Clean and modern atmosphere • Safety concerns, 16 video surveillance screens used
Comparison Middle School	
<p><i>MSAP School Theme:</i> No theme present</p> <p>Grade Levels: 6–8</p> <p>Student Characteristics Number of Students: 926 Race-Ethnic Breakdown of Students:</p> <ul style="list-style-type: none"> • Hispanic: 6% • White: 47% • Black: 45% • Asian/Pacific Islander: 1% • Am. Indian/Alaska Native: <1% <p>Percent Free/Reduced-Price Lunches: 52%</p> <p>Teacher Characteristics Number of FTE Teachers: 66 Race-Ethnic Breakdown of Teachers: * Predominantly White 5+ Years of Teaching: NA Newly Hired: NA</p> <p>School and Neighborhood Characteristics</p> <ul style="list-style-type: none"> • Only school in study outside of city limits • Rural setting • Safety concerns with student outbreaks. Security on campus full-time. 	

* Staffing data from state not available. Racial breakdown report in tables based on observation and nonrandom survey of teachers. “5+ years of teaching” and “Newly hired” based on nonrandom survey of teachers.

** Data are from 1999-2000 school year

MSAP middle school No. 1 is the first middle school in the district to offer the International Baccalaureate Middle Year Program (IBMYP). This sixth-through-eighth-grade school also offers an Integrated Arts theme; the administrative staff of the school feel that the two themes are useful and necessary because different aspects of each can benefit different students. Administrative staff explain that internal struggles with teachers over the curriculum, high numbers of “at-risk” students, and a high mobility rate (18 percent, higher than any other MSAP-supported school in the district) due to the low-income housing in the neighborhood combine to make the goal of desegregation seem less important than producing a positive, well-functioning school that is implementing the magnet theme.

MSAP middle school No. 2, serving sixth-through-eighth-grade students, operates under a revised theme of Gifted and Talented for Accelerated Studies in Science, Mathematics, and Technology. There is a distinction between Academically Gifted (AG) students, who receive accelerated course work, and non-AG students who receive more traditional schooling. The AG students are state-identified as students who excel on annually administered state assessments.

The school uses a video surveillance system with 16 screens in the main office. A large renovation project was completed between the first and second year’s site visits, which added a new auditorium, a wing of classrooms and offices to the school, and an Ecosystem Learning Center (a 1,700 square foot greenhouse).

The **comparison middle school**, serving sixth-through-eighth-grade students, is the only school observed in District C that serves students outside of the city limits. While the comparison school is similar to the MSAP schools in the district along racial-ethnic demographic breakdowns, it is noticeably different in respect to its placement outside of the city limits and in terms of innovative activities affecting the school. There are no special themes or programs existing in this school.

Program, Themes, Goals

The two MSAP-supported middle schools have these characteristics in common: multiple themes or instructional foci, specialized faculty, and a focus on state standards and assessments.

School themes

The instructional programs in MSAP middle schools No. 1 and No. 2 are based on the assumption that different students learn differently and instructional practices must attend to the various needs of students. MSAP school No. 1 has two distinct themes, the International Baccalaureate Middle Year Program (IBMYP) and Integrated Arts. Both themes serve the whole school population but to varying degrees. Conversely, MSAP middle school No. 2 maintains only one theme, Gifted and Talented for Accelerated Studies in Science, Mathematics, and Technology, but realizes that not all students benefit from it equally. The school ensures that every student receives a magnet school education through other means, such as the development of the Ecosystem Learning Center.

Administrative staff and faculty at MSAP middle school No. 1 are proud to be one of the leaders of the middle school IBMYP adoption, but admit that the adoption has come with some serious growing pains. According to the program description of the school,

“The IBMYP provides a comprehensive education for young adolescents based on the overarching concepts of global education, communication, and intercultural awareness. Emphasis is placed on the study of eight subjects (Language Arts, Foreign Language, Humanities, Sciences, Mathematics, Arts, Physical Education and Technology) thematically linked and five Areas of Interaction—Approaches to Learning, Community Service, Health and Social Education, Environment, and Homo Faber (the creative genius of people).”

IBMYP connects traditional school subjects (listed above) through the five areas of interaction, thereby integrating curricula. Faculty work together to develop projects incorporating facets of each of the subjects. In addition, students are challenged to think beyond their lives and locale by learning community service or health and social education (two of the five areas of interaction) as they relate to their local, national, international, and global environments. Students consistently are asked to relate academic, social, and environmental matters in their physical control to those beyond their personal lives.

The IBMYP is a rigorous program of study initially intended for high school students. This middle school is paving the road for other middle schools to adopt the program, and enlisting the

International Baccalaureate in middle schools. *The IBMYP is a rigorous program of study initially intended for high school students. This middle school is paving the road for other middle schools to adopt the program, and enlisting the help of IB programs in high schools to assist with that endeavor.*

help of IB programs in high schools to assist with that endeavor. MSAP middle school No. 1 maintains strong ties to two IB high schools in the district, with the intent to funnel students from this middle school to one of these high schools so that the students can acquire an IB degree, which can only be attained at the high school level. The two IB high schools have been assisting

this middle school in aligning its curriculum with their own so that the flow between middle and high school will be seamless for students.

This curriculum alignment, coupled with a new implementation of portfolio assessments, requires a significant amount of time and work for the faculty and administrative personnel. Faculty resistance to program implementation arose as an unforeseen reaction to the time and energy required of school personnel. As a result, middle school No. 1 relies heavily on the Integrated Arts theme, which operates under the assumption that every student excels in at least one area of learning, and for many students that area can be art.

Students use a variety of means to express educational attainment and growth through art, including traditional painting and drawing classes as well as modern multimedia presentations. A new hall of classrooms including a painting studio was constructed during the MSAP grant. The Integrated Arts theme also incorporates community involvement and interest through student presentations. For example, one photography class assignment showcases 130 student photographs

in the library for the rest of the school to observe. Community members and artists visit the school to review the student work, and a few select photos are chosen to be on display at the state museum of art.

One issue that middle school No. 1 is confronting is that the IBMYP program tends to focus on students who are high achievers. The Integrated Arts theme was implemented in part to attract

Accelerated courses. MSAP funds are used for Mathematics, Science, and Technology coordinators in the school, who assist teachers in developing and refining challenging and stimulating curriculum for high achieving students in these areas.

students who are not able or willing to perform at the level required of IBMYP. Likewise, MSAP middle school No. 2 operates with a demanding theme, one that requires specialized faculty and high-achieving students. The theme Gifted and Talented for Accelerated Studies in Science, Mathematics, and

Technology positively affects students who can achieve in accelerated mathematics, science, and technology courses. MSAP funds are used for mathematics, science, and technology coordinators in the school, who assist teachers in developing and refining challenging and stimulating curriculum for high achieving students in these areas. AG students receive instruction from AG-certified instructors. However, not all students are classified as academically gifted, which means they do not receive instruction in the AG courses.

The school offers some elective courses for the general student body that closely resemble AG classes, as they require students to have a teacher's signature and good grades to enroll. However, it appears that the AG courses involve innovative teaching strategies and challenging course work, while the majority of non-AG classes, including the elective classes, seem to be the same as in traditional school classrooms. To offset the discrepancy between AG and non-AG classes in the school, an Ecosystem Learning Center has been constructed. Administrators, teachers, and students all comment on the marked improvement in the appearance of the school due to the construction. The Ecosystem Learning Center provides, according to school staff, "students and teachers with opportunities to research and experiment with natural environments, as well as an in-house facility that can aid in drawing, painting, and writing assignments." Esthetically, the Ecosystem Learning Center also further beautifies the school.

Comments from a focus group of eight students at MSAP middle school No. 2 revealed that the distinctiveness of the magnet emphasis may not be reaching all of the students as intended. Students admit to not being aware of the school magnet theme. When asked why they attend the school, most students lack a response. "Friends" are what a few students note as what they like about the school, and the "strict rules" are what they would like to change. Students comment that the school is stricter than other schools in the district, in terms of requiring students to take more classes, but AG classes, innovative learning, and technology are not topics they discuss. This could be a product of these particular students in this focus group or an indication that the school's magnet status is not affecting all students.

Attending to high-achieving students as a priority seems evident in both MSAP middle schools No. 1 and No. 2, and yet themes or special foci exist to accommodate the entire student body. In stark contrast, unruly student behavior at the comparison school in the recent past caused the

administrative staff and faculty to have serious concerns about the health and well-being of students in the school. Police officers are now regular visitors to the comparison school, and procedures are in place to monitor students consistently while in between classes, before and after school, and during lunch. Teachers and administrators line the hallways during these times and patrol all parts of the school in an effort to deter students from causing problems with one another. Energy and emphasis is placed on having students respect one another and not engage in any physical retaliation. This is one of the most important distinctions between these MSAP-supported schools and the comparison school: the comparison school lacks the ability to teach different students through varied academic approaches. Innovative education takes a distant back seat to maintaining safety.

Professional development

MSAP middle school No. 1, and to a lesser extent middle school No. 2, have arrived at this point in implementing innovative education through intensive professional development for faculty. While the professional growth allows the schools to implement the themes, it comes at the expense of professional stability for middle school No. 1. Both middle schools No. 1 and No. 2 increased the level and type of professional development provided to teachers by sending them to activities, utilizing summer institutes that bring in outside trainers on topics as needed, and having the MSAP-funded coordinators provide in-house services in their areas of expertise. According to the principal at middle school No. 1, professional development was offered at the magnet resource center twice a month on topics such as technology, brain research, differentiation and portfolios. However, the amount of professional development activities in middle school No. 1 caused problems for the staff.

Even with the assistance in International Baccalaureate curriculum from the high schools, an increase in the number of professional development hours required by all middle school No. 1 teachers to learn the philosophy, understand how to assess students through portfolios, and connect all subject work through thematic links has caused resistance to program implementation on the part of some of the teaching staff, which delayed the implementation of the program. The IB program requires that all staff invest 100 hours per year in professional development. Resistant teachers refused to attend professional development activities and did not implement the IBMYP themes in their classrooms. The administrative staff at the school received assistance from staff at the magnet resource center and the district office in their efforts to have all teachers adopt the program. A number of teachers left the school, either voluntarily or involuntarily. After about one year of the IBMYP implementation, only 15 of the original 90 teachers remained at the school. By the time of the second AIR site visit, the morale of the school had lifted and the International Baccalaureate program was being implemented as intended.

Salience of the state assessment in instruction

As is true for the entire district, one overarching goal of both MSAP middle schools No. 1 and No. 2 is to increase the percentage of students passing the state assessment. Means to accomplishing this include using test banks and mathematics software packages tied to the state

Importance of state standards. *Building awareness of the importance of state tests and strategies for scoring highly is common in classroom instruction. In addition to the general flow of instruction in middle school No. 2, teachers continually reaffirm the importance of standards and assessments to students by incorporating mini-lessons about*

standards, providing individual tutoring programs and writing specialists to each seventh-grade team of teachers, offering targeted electives for remediation in reading and mathematics, and

training staff in the theory of multiple intelligences. Teachers in middle school No. 2 also use observation checklists, designed by staff, to monitor students' progress. Some class time instruction in both schools is devoted solely to test preparation. Building awareness of the importance of state tests and strategies for scoring highly is common in classroom instruction. In addition to the general flow of instruction in middle school No. 2, teachers continually reaffirm the importance of standards and assessments to students by incorporating mini-lessons about them.

MSAP middle school No. 1 is also attempting to raise the percentage of students passing the state assessment by using portfolios as assessments. These portfolios consist of one-inch notebooks for every student to compile examples of interdisciplinary work in academic subjects and the arts. The notebooks begin when students enter the school in the sixth-grade and are completed, with several examples of work in each area, by the end of the eighth-grade. These portfolios will remain with the students if they choose to attend a high school with an International Baccalaureate program, which they must do in order to attain an IB diploma.

However, nowhere is the importance of state tests more readily apparent than at the comparison school. After receiving failing grades from the state for the past two years, the administrative staff and faculty feel intense pressure to achieve minimum requirements on the state assessment in order to avoid the assignment of a state assistance team. Students are constantly reminded of the importance of achieving minimum requirements during all class periods. Many of the teachers choose to teach lessons designed specifically to assist students in feeling comfortable with the state assessment. In mathematics classes, for example, many teachers give assignments in the format of the state assessment, asking students to solve a problem and choose the right answer from the four available choices. As a class, the students and the teacher explain how to decide which of the four choices is indeed the correct one. The same instructional strategy exists in other subjects as well. Many of the language arts courses focus class discussion on how students should interpret questions on the state assessment and interpret the meaning of questions. Some classes use practice state exams as daily lessons. Rote memorization of formulas and methods seem tantamount to survival.

Technology

One area in which MSAP middle schools No. 1 and No. 2 are very similar is with their attainment and use of technological equipment and resources. Both schools now own a lot of new technology and are attempting to refine their use of it to be included in daily academic lessons in every subject. They also both now have several computers in most classrooms as well as maintain

computer labs. In addition, middle school No. 1 lists laser disc players, scanners, multimedia carts, tape recorders, videocassette recorders, digital cameras, printers, and software programs as part of their academic resources. During the AIR site visits, students were observed using computers to write reports and searching the Internet for documents and materials that assist them with writing reports. Use of mathematical software programs is also a noticeable benefit of the technology.

MSAP-supported technology staff are some of the newest members of both schools' faculty, working to support the implementation and use of the technology. These specialized staff provide regular, ongoing professional development activities on technology to school staff as a means of increasing staff knowledge of technology use. The school staff believe that knowledgeable teachers will lead to better teacher-student interaction. One teacher at middle school No. 1 notes that the teachers are slowly becoming aware of how to use the technology resources in their lessons and feels that continued professional development will help infuse technology into daily lessons.

Technology resources are much less available in the comparison school than in the two MSAP middle schools. Very few classes in the comparison school operate with more than one computer, and those few were generally not used during the lessons we observed. Beyond the technology, however, the comparison school lacks several other basic academic resources. For instance, books seem weathered and outdated, with some students needing to share books during class because replacements are not available. Most classrooms have no televisions or videocassette recorders or any equipment beyond chalkboards and overhead projectors, so there are no opportunities for multimedia lessons.

School Instruction and Activities

Impact of block scheduling

To provide teachers the adequate time to teach the IBMYP program, MSAP middle school No. 1 operates on block scheduling. Each academic day consists of four periods, each lasting 90 minutes with classes meeting every other day rather than daily. Students appreciate these longer periods, according to those in the focus group. One student commented, "You have time to learn whatever the teacher is teaching and then time to practice it with the teacher there, in case you have any questions."

Teachers and students seem to benefit from the block scheduling change, in terms of both the IBMYP theme and the Integrated Arts theme. Lessons relating to IBMYP offer teachers time to introduce lessons, generate discussions between students, enable students to complete in-class assignments, and have students work toward completing portfolio assignments. Lessons relating to Integrated Arts allow a significant amount of time for teachers to discuss the theory behind artistic styles and give examples of them, and for students to develop their own art pieces. Whether taking photographs, painting pictures, or developing mixed-media presentations, students are able to focus attention, for over an hour per class, on creating their art. As expected, students often feel a need to alter original plans for art pieces and the block scheduling allows that to happen.

Student populations

Although the comparison middle school focuses on maintaining school safety because of student behavior problems, the MSAP middle schools do not have ideal student populations. MSAP middle school No. 1 encountered a troublesome problem during instructional days, which continually plagues the school. Not only does the district rate this middle school as having the second highest turbulence rate of all middle schools, but the school administrative staff also state that half of the students in the school are labeled “at risk” and require special assistance beyond the classroom. School counselors and teachers admit to spending great amounts of time quelling student disagreements rather than teaching lessons. School faculty and staff feel that, for some “at-risk” students, too much time can be taken away from educational classroom activities in order to attend to the students’ social and psychological needs. In the focus group, students confirm “at-risk” behavior to be a problem, noting that “student arguments lead to student fights all the time.” Students state that cultural and religious differences are often at the heart of these student outbursts, but rarely are racial differences the problem. Student disagreements or fights are not an everyday occurrence, evidenced by the lack of them during site visit observations, but it is clear that these issues are of concern.

MSAP middle school No. 2 makes no mention about its “at-risk” student population or student outbreaks. Rather, the school acknowledges the differences in the student population and feels fortunate to not have as much of a problem with student fights as some of the other schools in the district. That allows for more direct attention to be paid toward academics. The theme of the school, Gifted and Talented for Accelerated Studies in Science, Mathematics, and Technology, focuses full attention on students acquiring a quality education for their academic levels. However, middle school No. 2 makes a clear distinction between Academically Gifted (AG) and non-AG students, with the AG students receiving the more innovative and challenging curriculum while the non-AG students receive a more traditional education. The following two examples of one sixth-grade AG science class and one seventh-grade non-AG language arts class illustrate this point.

Classroom activities

The sixth-grade AG science class in middle school No. 2 seems to capture and maintain the interest of students throughout the period. While the teacher lectures about biology topics, she periodically uses a laser disc player to demonstrate certain descriptions, directs student attention to poster diagrams on the walls that illustrate topics more clearly than the laser-disc player, and asks students to respond to questions from each other and from her. This method of instruction might not seem innovative, but the teacher moves through the lecture at a quick pace that the students can maintain. The teacher also continually recaptures student attention by directing them to different types of instructional-based media. With very few nonacademic concerns disrupting the courses, students seem interested in the topic and engage in academic conversations with the teacher and other students.

By contrast, the seventh-grade non-AG language arts class resembles a traditional school classroom. Rows of desks facing the front of the room line the class, and few visual aids are present on the walls. Academic instruction consists of the teacher asking students to break into smaller groups to read a story that they would later answer reading comprehension questions about, and to be mindful of how this work can be useful for the state assessment. During the course, the

teacher speaks individually with students about past-due assignments. While this class period focuses on reading comprehension, it lacks direct instruction by, and interaction with, the teacher.

These examples are representative of the differences observed in the majority of AG vs. non-AG courses. The Ecosystem Learning Center, however, maintains the potential to invigorate non-AG and AG courses alike by using it as a tool to instruct students. It is the administrative staff's intention for the Ecosystem Learning Center to provide a means to studying life and growth that is applicable to several subjects, such as understanding systems of organisms or plant life in science, charting and predicting insect populations rates of growth over time in mathematics, and writing literature about the environment in language arts. Since the Ecosystem Learning Center development required considerable more time than expected by school and district personnel, because of unforeseen construction delays, the use of the Center had not achieved its full potential during site visit observations. However, several teachers noted their enthusiasm about their ability to use it in classroom work in the near future.

Summary

District C has more than 20 years' experience with magnet schools. The first MSAP award came in 1985-86 and was followed by several others aimed at revitalizing existing programs, implementing new curricula, providing professional development, and expanding materials and resources. The 1998-2001 MSAP grant award supported four magnet schools: two elementary and two middle schools. In addition, it supported the implementation of a new accelerated learning centers program. Outlined below are some of the benefits and challenges that District C and the magnet schools have experienced in the 1998-2001 grant cycle, as well as some lessons they have learned along the way, and the MSAP Project's plans for the future.

Benefits

District C benefited from the 1998 MSAP grant in a variety of ways, including increasing the amount of state-of-the-art equipment at MSAP schools, strengthening the usefulness of the magnet resource center, fostering the implementation of the accelerated learning centers program, constructing the Ecosystem Learning Center, and refurbishing one middle school. The MSAP grant helped schools materialize the technological and curricular materials needed to implement innovative teaching practices, and ensured the implementation of those practices through ongoing professional development at the district level (magnet resource center) and school level. Lastly, this grant enabled the district to pioneer the accelerated learning centers program during three year-round schools' inter-sessions, which the board of education adopted as a model for all year-round schools in the district.

Challenges

The inability to meet its desegregation objectives is an important challenge for this district's programs. The project director attributes this difficulty to not being able to rely on race in assigning students. Other factors that may play a role include the continuing increase in the proportion of minority students in the district, the use of zone schools that limit openings for nonresident students, and competition from new schools or other schools that develop magnet programs.

Lessons Learned

As is evidenced by the delayed construction of middle school No. 2's Ecosystem Learning Center, the proper implementation of a theme requiring a large amount of construction might not occur smoothly. Knowing and understanding city and district ordinances and regulations can only work toward the betterment of theme implementation that involves construction. The inability to receive a city permit to begin construction at one of the MSAP schools directly delayed implementation of the theme. The valuable lesson of not being able to assume that all faculty will implement new curricula surfaced at one middle school as the majority of teachers refused to participate in professional development activities needed to implement the theme. As a result, implementation of the theme was delayed for a year.

Plans for the Future

At the time of application the school board had decided that it would continue to support the MSAP schools once the 1998 grant funding cycle ended. The programs are continuing to operate as magnet schools under the same themes. Meanwhile, the district has received a new MSAP grant, which may help to offset some of the cost to the district of maintaining past programs.

Case Study, District D

District Context

Location and Size

District D is a large urban school district encompassing more than 270 square miles in the West. It is located in a metropolitan area with a population of more than 1 million inhabitants. The district is cut in sections by several major freeways that separate communities into ethnic, economic, and social regions. The majority of the district's minority and poor population lives in the southern sections of the city, while nonminority communities are located in the northern part of the district.

More than 140,000 students were enrolled in the district's schools in 1999-2000. The district's student enrollment increased by more than 10 percent between the 1993-94 and 1999-2000 school years, an increase of more than 13,000 students. The number of public schools also increased by more than 10 percent during this period. The district operated more than 170 elementary and secondary schools in 1999-2000, including 123 elementary schools, 25 middle schools, 16 senior high schools, and a number of alternative schools.

Student Composition

Since the mid-1970s, the enrollment of minority students more than doubled from about 40,000 to more than 100,000 at the end of the 1990s, while the number of white students experienced a reverse trend from more than 80,000 students to less than 40,000. Over the course of the current MSAP grant, minority enrollment in the district's public schools increased by more than 6,000 students, while the white enrollment decreased by more than 500 students.

The district's student population is racially and ethnically diverse, no single group representing a majority of the students. In 1999-2000, Hispanics represented the largest race-ethnic group, at 37 percent of the student population, followed by whites at 28 percent, Asian Americans at 18 percent, blacks at 17 percent, and American Indians at less than 1 percent. Thus, ethnic minorities represent almost three quarters (73 percent) of all students in the district. The proportion of minority students is higher at the elementary and middle school levels (75 percent and 72 percent, respectively) than at the high school level (67 percent).

Challenges facing the district are reflected by other diverse student characteristics. There are more than 52 native languages spoken by students in the district. More than a quarter of the students are classified as being limited in English proficiency (i.e., LEP). The district includes students from extremely poor as well as extremely affluent neighborhoods. More than 50 percent of the students are eligible for free or reduced-price lunches, compared with a national average of about one-third.

Magnet School History

The school district initiated magnet programs in the mid-1960s to attract students from outside a school's neighborhood area with the intention of improving the racial and ethnic balance at both the receiving and sending schools. The use of magnet programs expanded in the mid-1970s when a district court ordered the school district to take steps to alleviate the harmful effects of school segregation at racially isolated schools and to prevent racial isolation at other schools in the district.

Since the introduction of the magnet programs, the district has operated such programs in more than one-quarter of its schools.

In the 1990s the district adopted a policy of reducing and eliminating programs-within-schools (PWSs) that are available to only some of the students in a school, in favor of whole school programs that offer a magnet curriculum to all students in the school. The district also initiated magnets in several predominantly white attendance areas to complement magnet programs in predominantly minority schools. These “mirror magnets” offered increased school choices for minority students living outside the school’s attendance area and all students living within the magnet school boundaries. Most of the magnet programs, however, have operated in predominantly minority schools.

The school district has participated in several cycles of MSAP funds, beginning with the first MSAP award in 1985. The school district currently operates magnet programs in 45 schools, including 31 elementary and 14 secondary schools. Eight of those schools, including three elementary, and five secondary schools, receive MSAP funds for their magnet programs. The remaining magnet programs are funded from state and local sources. Seven of the eight MSAP funded magnets are whole school programs; only one is a PWS.

State Systemic Reform

During the late 1990s, the state initiated a wave of systemic reforms that revised and rejuvenated an earlier series of reforms from the 1980s. Between December 1997 and October 1998, the state board adopted substantially revised content area standards in English language arts, mathematics, history and social science, and science. Additional content standards and detailed curriculum frameworks followed in 1999 and later years. School districts were required to adopt local content standards equivalent to or more demanding than the state standards. In 1998, the state initiated an annual statewide assessment of students in grades 2 through 11¹⁹ and established a new policy designed to prevent “social promotion,” which requires districts to establish standards-based promotion criteria for each grade and to provide intensive instructional support for students who have been retained in grade or are at risk of being retained. In 1999, state legislation established a school accountability system based on test scores that included provisions both for rewarding high performing schools and remediating low performing schools. Additional reforms initiated in 1999 included the creation of a high school exit examination that students would be required to pass in order to receive a high school diploma (in 2004 and later years); enhanced, standards-based professional development programs in English language arts, mathematics, and English as a second language; and a peer mentoring program for teachers.

District Reform Initiatives

In its response to state mandates, the district school board is implementing a systemic reform program that represents a major reorganization of educational curriculum across all grades. The reform program is intended to enable all students—particularly low-achieving students—to meet challenging standards. The belief underlying this program is that as the base of instruction across the

¹⁹ All students were assessed in English language arts or reading and mathematics. Selected grades were also assessed in science and history or social science.

whole system rises, so will the academic performance of all students. The reform program aims to replace “social promotion” with high standards for student performance, using reliable measures of student and school performance, and making schools accountable for performance outcomes.

Literacy and mathematics are seen as the gatekeeper skills that are critical to the success of students as they move through their educational careers. The fundamental components of the reforms at every grade level are comprehensive literacy and mathematics frameworks. The literacy framework complements state standards for literacy used by the district. It contains instructional approaches such as shared and guided reading that are intended to help students develop the literacy skills expressed in the state standards. Professional development designed to help teachers and principals put the literacy framework into operation began in 1998. Instructional activity based on the literacy framework was introduced into the classroom during the 1999-2000 school year.

The mathematics framework intended to be consistent with state standards in mathematics focuses teachers’ attention on mathematics concepts (e.g., number sense and operations, functions and algebra, and measurement and geometry) and math processes (e.g., quantitative literacy, computational fluency, problem solving, using representations, and using reason and proofs). The framework was presented to the school board in June 2000, and was followed by intensive teacher training across grade levels. Instructional activity based on the mathematics framework began to be introduced into the classroom during the 2000-2001 school year.

The guiding principles behind the reforms include:

- System-wide focus of district work and resources on instruction.
- Early and continuing support and intervention to enable students to meet standards.
- Student promotion based on objective criteria and professional judgment.
- Student retention carried out at entry rather than exit grades.
- Massive investment in professional development focused on reading and mathematics.
- Enhanced parent education and involvement, particularly for parents of at-risk students.

These principles are reflected in a series of strategies for grades K-12 designed to prevent student failure, to intervene when students fall behind, and to accelerate learning of students who are retained.

Strategies for *prevention* of failure include: adhering to the literacy and mathematics *frameworks*; identifying *peer coaches* in literacy; providing *enhanced* learning of elementary school students from kindergarten and first-grade through added funding to ensure abundance of printed materials, examples of writing, use of mathematical symbols, and professional development of teachers; *mathematics specialists* at lowest ranking elementary schools; assigning incoming middle school students who are at or above grade level to a two-period *genre studies* course to develop their ability to read and understand a variety of texts.

Intervention strategies for students who are performing below grade level include: providing *extended day programs* with low student-teacher ratios; assigning students to enroll in *summer*

programs and *intersession classes* in literacy and mathematics; assigning incoming middle school students to a two-period *literacy and mathematics core program* with reduced class sizes; extending the two-period genre studies leveling grades 7 and 8, and in grades 10 through 12 for students who continue to perform below grade level; assigning ninth-grade students to *literacy and mathematic block courses*.

Strategies for *retention* of students who continue to perform below grade level include: retaining students at *entry* grades (e.g., grades 1, 6, and 9) rather than waiting until they reach the exit grades; and offering students who are retained at a grade level with *accelerated classes* or accelerated summer or intersession programs.

The district's literacy assessment, the Developmental Reading Assessment (DRA), is conducted in one-on-one reading conferences, and is given three to four times a year to all students in grades K to 4 to assess their reading level and document their progress over time. Those reading below grade level are referred to intervention programs. The Stanford Diagnostic Reading Test (SDRT) is administered in a group setting to fluent English speaking students in Grades 5 to 12 to assess their vocabulary, comprehension, and scanning skills. For students reading significantly below grade level on the SDRT, the Analytical Reading Inventory (ARI) by Woods and Moe is administered individually to confirm reading levels and identify appropriate interventions.

Literacy course placement of English language learners (ELLs) is assessed using the Language Assessment Scales (LAS). Less fluent students are placed in an English as a Second Language (ESL) literacy course sequence, while the more fluent ELLs are assigned to an English Language Development (ELD) literacy course sequence. All courses incorporate instruction in listening, speaking, reading, and writing, and focus on achieving grade level standards in English.

In assessing students for placement in the mathematics curriculum, the district currently relies on mathematics totals from the Stanford Achievement Test (SAT-9) for students who are entering the middle or junior high school level. The mathematics performance of students entering high school (Grade 9) is based on results from the Mathematics Diagnostic Testing Project (MDTP) Geometry Readiness Test.

Project Characteristics

Overview

The district's 1998 MSAP project began with programs in 10 schools, including five elementary, one middle school, and four high schools. During the course of the grant, the district discontinued a marine science magnet program at an elementary school with low academic performance. District officials decided the school would be better off concentrating on improving students' reading ability. Two other elementary schools with a common mathematics and science theme merged into a single school.

Of the eight remaining MSAP schools, seven operate whole school programs and one of the high schools maintains a program-within-a-school. All of these schools participated in an earlier MSAP program and have revised or expanded their programs. The themes of the programs are

varied (e.g., Montessori, Language Immersion, Math-Science, Medical Science, Global Technology, International Baccalaureate, Writing Academy), with several schools having multiple theme programs. Two threads are common to the programs in these schools:

The first thread is a shared philosophy of learning in which:

- Students are actively engaged in challenging tasks to which they can relate.
- Students can apply their knowledge to new situations.
- Learning is an enriching part of students' daily lives.
- Teachers are largely facilitators—sometimes listening and sometimes redirecting thoughts, coaching, or explaining.

This philosophy stresses the importance of a learning environment in which students are encouraged through dialogue to formulate questions and hypotheses, make choices and judgments, negotiate settlements, and resolve disputes. This orientation toward learning is seen as particularly appropriate given the district's diverse population and increasing expectations for high levels of performance.

The second thread is coordination of the MSAP programs with the district's initiative to integrate technology into the curriculum. The MSAP contribution to this effort is reflected in the project's budget:

- *Equipment expenditures* that account for more than 40 percent of the total MSAP budget tend to focus on upgrading computers, introducing or upgrading Internet and networking connections, or developing and improving media and science labs.
- *Personnel expenditures* that account for approximately 30 percent of the MSAP budget include technology resource personnel, technology training for teachers, and development of the curriculum that makes use of the additional technology.
- *Supplies* that account for almost 20 percent of the MSAP budget include purchases of software, instructional materials, or other products needed to maintain and utilize the technological equipment in the classroom.

All of the magnet schools in District D are attendance zone schools. Students residing in the attendance zone have priority for enrollment over nonresidents unless the nonresident student is continuing in a magnet program to which he or she has previously been accepted.

District-Level Staffing

The key personnel in the project office include the project director, who is responsible for planning and implementing the project, and three resource teachers. The project director, herself a former teacher, assumed the position in 1995 during an earlier funding cycle and was extensively involved in the planning of the current project. Two of the resource teachers are specialists in content and performance standards and one is a specialist in technology. They help with staff development, magnet curriculum development, and magnet program implementation. MSAP-funds

also provide secretarial support for the project director and resource teachers and clerical support for monitoring the budget.

Recruitment Issues and Strategies

The MSAP project, in collaboration with district officials, seeks to provide students with choices of study by advertising magnet programs that are available within the district. The project

Marketing magnet schools. Using its initial assessments, a marketing firm worked with each school's magnet resource teacher to develop a focused marketing strategy. Each school was assisted in developing its own magnet brochures and flyers, mailing and distributing materials at local businesses, day care centers, and churches, issuing press releases, scheduling and making presentations at community meetings, promoting its program on the school's Web site, and telemarketing its program to parents who requested information.

spends about 4 percent of its annual budget on outreach and recruitment efforts and receives support from other district funds in producing and distributing

materials for MSAP programs. Two features of the project's overall recruitment strategy include employing an independent marketing firm to help develop annual marketing plans for each of the MSAP schools, and targeting the advertising of its magnet programs.

The marketing firm developed an initial assessment of each of the magnet schools. A marketer visited each school unannounced, pretending to be a parent of a prospective student to see how the school employees respond to inquiries and assess how well they promote their school and its program. Based on these visits and the gathering of other information, the marketing firm developed an initial assessment of each school and its program (i.e., identifying the school's strengths and weaknesses, opportunities for successful recruitment, and threats to recruitment). The firm's representative indicated that one of the biggest challenges was to change a negative public perception of a number of the MSAP schools that the local media had helped to perpetuate.

Using its initial assessments, the marketing firm worked with each school's magnet resource teacher to develop a focused marketing strategy. Each school was assisted in:

- Developing its own magnet brochures and flyers.
- Mailing and dissemination of materials at local businesses, day care centers, churches, etc.
- Issuing press releases.
- Scheduling and making presentations at community meetings.
- Promoting its program on the school's Web site.
- Telemarketing its program to parents who requested information.

The marketing firm developed brochures describing all elementary and secondary magnet schools in the district (i.e., MSAP and non-MSAP funded schools) that allowed parents to compare magnet alternatives and distributed a newsletter districtwide twice a year. The newsletter featured

the accomplishments of the magnet schools in an effort to make non-magnet staff, parents, businesses, and the community in general more aware of magnet schools. A corporate business partner of the school district trained MSAP volunteers in telemarketing strategies and allowed those volunteers to use their facilities to respond to inquiries about magnet schools made by parents.

One of the lessons that the MSAP project director and MSAP school officials learned from this experience was that marketing is not a one-time event. The project director noted that it is important to keep the name of the school out in the public using multiple announcements. One month a school may run a public service announcement, another month they use bulk mailing, and another month they would be featured in a local newspaper. The reasoning behind the strategy of keeping magnet schools in public view all year long, even when the school is not recruiting, is that these marketing activities create a store of information for parents that will lead them to take action on registering their child for enrollment in one of the magnet schools.

The project's recruitment efforts focus on nonminority students through geographically targeted advertising. Each magnet school in District D has an attendance zone from which it enrolls a majority of its students.²⁰ Since the MSAP schools are located in high minority areas of the district, project officials have sought to target recruitment efforts to areas of the district with high nonminority populations. A few non-MSAP magnets located in nonminority neighborhoods target areas of the district with high minority populations. For recruiting purposes, the district is divided into four geographic clusters with differing racial-ethnic and socioeconomic characteristics. Bulk mailings of brochures, presentations, and invitations to parents to attend open houses targeted geographic areas of the district with the opposite demographic characteristics of the magnet schools.

The project officials were pleased with the results of the marketing of the MSAP programs and reported that the recruitment effort had generated interest in the magnet schools. The development

Response to marketing of magnet schools. MSAP project officials were pleased with the results of the marketing of the MSAP programs and reported that the recruitment effort had generated interest in the magnet schools. The recruitment effort was not in place the first year of the program. As development of a successful marketing effort takes time and resources, results were more noticeable at the end of the grant period.

of a successful marketing effort takes time and resources. Because funds were not available until after the end of the 1997-1998 school year, the recruitment effort was not in place for the first year of the program. In

reporting that there were few if any students on waiting lists at the start of the second year of the program, the project director observed that many of the MSAP schools are located in undesirable areas that make recruiting a challenge. In the third year of funding, the project director reported that there were 50 to 400 nonresident students on waiting lists for each of the schools. This suggests that the marketing efforts had become more effective over the course of the project.²¹

²⁰ Students residing in the attendance zone have priority for enrollment over nonresidents, unless the nonresident student is continuing a magnet program to which he or she has previously been accepted.

²¹ Other factors may also have contributed to the increases in the size of waiting lists. Increases in the number of resident students attending these schools would limit space for nonresident students, and class size reduction at the lower grades could also enlarge the waiting list as some elementary schools may not have the facilities for additional nonresident students.

Desegregation Plan and Objectives

The district had been ordered in the mid-1970s by a state court to take steps to reduce isolation of minorities in district schools. Although released from direct court supervision, the district had been ordered to continue to recruit students to participate in magnet programs where they were underrepresented. The percent minority enrollment in 1997-1998 for each of the MSAP-supported schools in District D ranged from 78 to 98 percent. The desegregation objective for each of these schools was to reduce MGI, by decreasing the percentage minority student enrollment.

Although the increased waiting lists indicate that applicants to the MSAP schools have increased over the course of the grant, few of the desegregation targeted schools made progress on reducing minority group isolation. Three schools, one elementary and two high schools, are considered by the Department of Education criteria to have met their objective because the increase in minority enrollment in their school was less than the districtwide increase in percent minority enrollment. In the elementary school, the increase in minority enrollment was a percentage point lower than the districtwide increase in proportion of minority students in elementary schools. In the two high schools, the increases in percentage minority students were fractionally smaller than the increase for the district at that grade level. In all the other MSAP-supported schools, the increases in percentage of minority enrollment from 1997-1998 to 2000-2001 exceeded districtwide increases. In three of the MSAP schools, the number of nonminority students decreased while the school's total enrollment was increasing.²²

MSAP schools face a number of challenges in efforts to reduce minority group isolation. The first involves the interplay of the enrollment priorities of the attendance zone magnet schools, the

Difficulties faced in reducing minority group isolation. *The growth in enrollment at MSAP schools has generally outpaced changes in the rest of the district. Growth in the number of resident minority students attending MSAP schools creates a dual problem for desegregation efforts by increasing the number of nonresident white students needed to reduce isolation, while at the same time limiting the number of spaces the school can make available to nonresident students because facilities have become crowded.*

capacity of school facilities, and demographic changes in District D. The growth in enrollment at MSAP schools has generally outpaced

changes in the rest of the district, much of which the project director attributed to growth in the minority areas served by MSAP schools. Growth in the number of resident minority students attending MSAP schools creates a dual problem for desegregation efforts: It increases the number of nonresident white students needed to reduce isolation, while at the same time limiting the number of spaces the school can make available to nonresident students because facilities have become crowded.

²² Whether or not a district with a required desegregation plan met the requirements set out in a court or agency order is not being assessed in this study. Compliance with a court order is determined by a court, not the Department of Education (likewise an agency determines compliance with an agency order). Therefore, if a court or agency deems a magnet school operation and enrollment to be in compliance with an order, the Department of Education will defer to that interpretation. See 1998 Magnet School Application Notice. (See also 34 CFR 280.2(a)(1)).

Second, even if schools continue to market to nonresident students, overcrowding is a hurdle to attracting those students. While some schools have expanded their capacity by bringing in temporary or modular classrooms, there is a limit to such expansion.

Third, class size reduction implemented at the lower grades may further impair efforts to reduce minority group isolation. As the number of resident students increases, schools may not have the facilities to reduce class sizes and make space available for nonresident students.

Fourth, the potential pool of nonminority applicants continues to decline. In particular, the number of white elementary school students in the district's public schools decreased between 1997-1998 and 2000-2001.

Finally, the designation of several of the MSAP schools as low performing represents an impediment to recruiting students to those schools. The marketing representatives noted that such a designation creates low morale at the school and presents an image of the school that threatens effective recruitment of students.

The Role of the MSAP in Supporting State Systemic Reform and Other District Initiatives

The project's efforts to further standards-based reform took place during a period in which both the state and district reform context were in flux. Most of the state reforms (for example, the

Tension between MSAP activities and district initiatives. District D's literacy initiative began in 1998, but continued to expand and evolve throughout the grant period. Thus, although the MSAP project was intended to further state and district systemic reforms, its design was shaped by assumptions that changed during the ensuing three years, leading to some tension between MSAP planning activities and the district's evolving priorities.

accountability system) began after the district had submitted its MSAP application, but had been widely discussed during the preceding several months. District

D's literacy initiative began in 1998, but continued to expand and evolve throughout the grant period. Thus, although the MSAP project was intended to further state and district systemic reforms, its design was shaped by assumptions that changed during the ensuing three years, leading to some tension between MSAP planning activities and the district's evolving priorities.

Resource teachers from the project office who were specialists in content and performance standards worked with MSAP teachers to develop standards-based curriculum. In a process called *curriculum mapping* the project's resource teachers helped MSAP teachers to

- Understand the performance standards.
- Identify overlaps and gaps between performance standards and what is currently taught.
- Develop teaching activities that fill in gaps and integrate themes from the magnet program.

Throughout this process there was an emphasis on integrating literacy skills and embedding technology into all curricular areas. In each school, district staff helped the faculty to compile binders that outlined the standards-based curriculum and provided a pacing guide. The binder was intended to be used by all of the teachers in a school or department to build standards-based lesson plans and coordinate instruction across classes.

Despite the MSAP project's intention to support systemic reforms, the implementation of the new districtwide reforms in literacy and mathematics has complicated the project's effort to fully carry out its curriculum mapping plan in the magnet schools. For example, the intensive literacy and mathematics classes that the district has instituted for students performing below grade level apply to students in MSAP-funded and non-MSAP funded schools alike. These courses do not reflect the magnet themes at MSAP-funded schools, yet they represent a significant proportion of the required course work for a large segment of the students, thus limiting students' ability to participate in the "elective" activities that embody the magnet theme.

Student Achievement

District D's MSAP project tracked student achievement on the state's nationally normed assessments in reading and mathematics and locally developed assessments of computer and applied learning skills. The project also planned to track magnet students' progress using the district's locally developed performance assessments in reading and mathematics. However, as the district strove to implement its comprehensive instructional reforms, it suspended use of these assessments indefinitely, and the project abandoned the objectives it had based on them.

The academic achievement objectives related to changes in the performance of students in selected grades (3, 5, 7, and 10) between spring 1998 (the base year) and 2001 (the last year of the grant). The goal for each school was for the average percentile scores in reading and mathematics of students in each tested grade to increase by at least two percentile points each year, or, by extension, to increase by at least six percentile points by spring 2001. Results were tracked separately by grade for minority and nonminority students. Thus, MSAP elementary schools had four goals in each subject area (goals for minority students in grades 3 and 5 and for nonminority students in grades 3 and 5), and MSAP middle and high schools had two goals in each subject area.

Overall, elementary schools were most successful in meeting their goals. All three of the schools that operated magnet programs throughout the grant period met at least half of their goals for six percentile point gains (overall, these schools met two-thirds of their reading goals and three-quarters of their mathematics goals). The single middle school met only one of its four goals (increased reading scores for minority students). Among the four high school programs, two met half of their goals and two met none.²³ A year-by-year examination of the results showed that most of the schools made average gains of two or more percentile points in some years (particularly between 1998 and 1999), but lost ground in later years.

Reasons for these results are not clear. It is likely that elementary schools showed more consistent gains because their organization lends itself to a more coherent, integrated approach to

²³Groups that did not make six-point gains in three years were evenly divided between minority and nonminority students, and between reading and mathematics.

language arts and mathematics instruction than the departmentalized organization of secondary schools, where the impact of reforms tends to be diffuse. The project's evaluator speculated that declines in goal attainment in the second year of the grant were the result of partially implemented and widely contested revisions to the district's reading curriculum. However, patterns of goal attainment for mathematics and reading were very similar; and while the district's reforms reorganized language arts instruction early in the grant period, mathematics instruction was not scheduled to change until 2001 or 2002. In the absence of an analysis of trends for all schools in the district, it is impossible to disentangle the effects of districtwide and magnet program factors in these outcomes.

Finally, the project tracked the percentage of students in selected grades (5, 8, and 11) who met district-developed standards for technology and applied learning skills.²⁴ The MSAP project did not provide data in a form that allowed detailed evaluation of how students in particular grades and schools met their benchmarks. However, the percentage of students scoring satisfactorily on each of the standards increased substantially and steadily over the three years. By 2001, the percentage of students scoring satisfactorily on individual elements ranged from about 65 percent to 98 percent.

Professional Development

The training of teachers in creating standards-based curriculum is one example of staff development supported by the MSAP project. The project office's Technology Resource Teacher provides training to MSAP teachers on using the Internet for creating and conducting inquiry-based lessons in their classrooms. Inquiry-based learning allows teachers to shift the classroom focus of students from simply learning skills to developing and carrying out projects, which stimulates a higher level of thinking. The Technology Resource Teacher has developed a Web-based application that MSAP teachers use to focus the classroom lessons and provide linkages to resource materials for their students. This application appears to be particularly useful for elementary school students. Comments from teachers in the high schools confirmed that such applications are less useful for older students who function more independently on the Internet.

Innovative Practices

The preceding description of the MSAP project in this district highlights a number of innovative practices. These include:

- Conducting curriculum mapping to align teaching with performance standards.
- Promoting inquiry-based learning as a method of teaching for all programs.
- Embedding the use of emerging technology into curriculum.
- Involving partnerships with the business community in student recruitment efforts.

²⁴ Standards covered areas such as use of technology for communication and research and applied learning skills such as working with others and managing one's own learning. Students were rated by their teachers using district-developed scoring rubrics.

School-level Programs and Activities

Overview of High Schools

AIR visited four high schools serving grades 9 through 12 in this district, including three MSAP funded high schools and one non-magnet comparison high school. All of these schools, including the comparison school, share a number of characteristics. All have more than 75 percent minority student (nonwhite) enrollments, although they vary with respect to the specific race-ethnic composition of the student population. In addition, they serve students who are predominantly from low socioeconomic backgrounds. The proportion of students eligible for free or reduced-price lunches exceeds 50 percent in each school, and the proportion of students who perform below grade level on literacy and mathematics skills is much higher than the district average. These characteristics are associated with other characteristics that the schools have in common: all operate schoolwide Title I programs and are particularly affected by the dictates of the district’s literacy initiative. Finally, during the period of the MSAP grants, all of the schools have received three-year state grants to upgrade and expand their technology and provide professional development in technology use for their staffs.

MSAP High School No. 1	MSAP High School No. 2
<p><i>MSAP School Theme:</i> Career Exploration and Technology</p> <p>Student Characteristics Number of Students: 2,969 Racial Breakdown of Students:</p> <ul style="list-style-type: none"> • Hispanic: 19% • White: 8% • Black: 22% • Asian: 51% • Am Indian/Alaska Native <1% <p>Percent Free/Reduced-Price Lunches: 56%</p> <p>Teacher Characteristics Number of FTE Teachers: 123 Racial Breakdown of Teachers:</p> <ul style="list-style-type: none"> • Hispanic: 8% • White: 74% • Black: 10% • Asian: 2% • Am Indian/Alaska Native 0% <p>5+ Years of Teaching: 68% Newly Hired: 17%</p> <p>School and Neighborhood Characteristics</p> <ul style="list-style-type: none"> • Well maintained, but crowded campus • One-third of classrooms are portable 	<p><i>MSAP School Theme:</i> Medical Sciences</p> <p>Student Characteristics Number of Students: 849 Racial Breakdown of Students:</p> <ul style="list-style-type: none"> • Hispanic: 21% • White: 2% • Black: 69% • Asian: 8% • Am Indian/Alaska Native 0% <p>Percent Free/Reduced-Price Lunches: 78%</p> <p>Teacher Characteristics Number of FTE Teachers: 48 Racial Breakdown of Teachers:</p> <ul style="list-style-type: none"> • Hispanic: 10% • White: 52% • Black: 35% • Asian: 0% • Am Indian/Alaska Native 2% <p>5+ Years of Teaching: 56% Newly Hired: 21%</p> <p>School and Neighborhood Characteristics</p> <ul style="list-style-type: none"> • Black neighborhood • Facilities maintained, but outdated

*Data are from 1999-2000 school year

MSAP High School No. 3	Comparison High School
<p><i>MSAP School Theme:</i> Writing Academy, International Baccalaureate, & Language Immersion</p> <p>Student Characteristics Number of Students: 1,893 Racial Breakdown of Students:</p> <ul style="list-style-type: none"> • Hispanic: 62% • White: 21% • Black: 13% • Asian: 4% • Am Indian/Alaska Native <1% <p>Percent Free/Reduced-Price Lunches: 72%</p> <p>Teacher Characteristics Number of FTE Teachers: 88 Racial Breakdown of Teachers:</p> <ul style="list-style-type: none"> • Hispanic: 21% • White: 71% • Black: 7% • Asian: 0% • Am Indian/Alaska Native 0% <p>5+ Years of Teaching: 65% Newly Hired: 21%</p> <p>School and Neighborhood Characteristics</p> <ul style="list-style-type: none"> • Downtown location • College campus atmosphere 	<p><i>School Theme:</i> None</p> <p>Student Characteristics Number of Students: 1,523 Racial Breakdown of Students:</p> <ul style="list-style-type: none"> • Hispanic: 33% • White: 9% • Black: 23% • Asian: 35% • Am Indian/Alaska Native <1% <p>Percent Free/Reduced-Price Lunches: 87%</p> <p>Teacher Characteristics Number of FTE Teachers: 70 Racial Breakdown of Teachers:</p> <ul style="list-style-type: none"> • Hispanic: 10% • White: 83% • Black: 1% • Asian: 4% • Am Indian/Alaska Native 0% <p>5+ Years of Teaching: 60% Newly Hired: 17%</p> <p>School and Neighborhood Characteristics</p> <ul style="list-style-type: none"> • 1950s facility—well maintained • Neighborhood of recent immigrants

*Data are from 1999-2000 school year

MSAP high school No. 1 is a large and growing high school located in a neighborhood composed mainly of single-family dwellings whose residents are predominantly Asian American. The school’s 1999-2000 enrollment of nearly 3,000 students is 8 percent (200 students) higher than it had been two years earlier. More than 90 percent of the students live in the school attendance area. The campus is a well-maintained property of more than 50 acres. Its buildings, which date from the early 1960s, contain 127 classrooms. Nevertheless, continued growth in student enrollment has led to overcrowding, as reflected in the school’s reliance on portables as opposed to permanent classroom facilities. Fully one-third of the classrooms (43 out of 127) are in portable buildings.

In 1999-2000, Asians (predominantly Filipino) represented a majority of the students (51 percent) attending MSAP high school No. 1. Blacks represented 22 percent; Hispanics, 19 percent; whites, 8 percent; and American Indians less than 1 percent of enrolled students. A total of 56 percent of students were eligible for free or reduced-price lunches. English language learners, or those with limited English proficiency, represented 14 percent of the student population. Spanish speaking students represented a majority (56 percent) of English language learners, followed by one-quarter (29 percent) who spoke Pilipino or Tagalog.

MSAP high school No. 2 is located in a predominantly black residential area. The school enrollment of about 850 students is small by district standards. Although the buildings and grounds are reasonably well maintained, the approximately 50 year-old school facilities are outdated. An annex building where some of the classrooms are located faces a busy street from which it is

separated by a high fence. The traffic noise necessitates keeping windows and doors closed during class.

While the school presents a safe learning environment for students, the area suffers from a negative stigma that lingers from racial riots that occurred in the late 1960s and early 1970s. The marketing firm that assisted with recruiting students reported that despite decreases in crime over the past few years, the general public perceives the area as having dangerously high levels of crime and gang activity.

Unlike other high schools in the district, this school does not have a set of designated middle schools from which it draws its freshman class. More than half of the students living in the school's residential area choose to be bused to other schools in the district. Consequently, nearly 30 percent of the students attending the school are transfers from other high schools and alternative schools located within and outside the district. Most of the transfers into the school are minority students.

Student transience is a major issue for this school. In 1999-2000 one-third of students (35 per 100) either entered or left after the start of the year. The larger problem seems to be with students leaving. One in five (20 percent) of the students enrolled at the beginning of the year were not attending the school by the end of the year. The number of students finishing all four years at the school is reported to be small. Officials reported that turnover is not a matter of students dropping out, but rather opting to attend other schools for a time and then returning to this school when their needs are not met.

In 1999-2000, blacks constituted nearly 70 percent of student enrollment, followed by Hispanics at 21 percent, and Asians at 8 percent. Only fourteen students, less than 2 percent of the school's enrollment, were white. Almost 80 percent of the enrolled students were eligible for free or reduced-price lunches. Among the 15 percent of the enrollment that were ELLs, 76 percent spoke Spanish as their first language.

Reflecting its relatively small enrollment, MSAP high school No. 1 employs fewer than 50 teachers. While a core group has worked in the school for a number of years, a large proportion of the faculty has been at the school for 2 years or less.

MSAP high school No. 3 is located in a downtown area, close to the city's business, cultural, and other academic institutions. In 1999-2000, it served approximately 1,900 students, slightly more than one-quarter of whom resided outside its neighborhood attendance zone. The school has the feel of a college campus. The facilities, which include both new and old buildings, are reasonably well maintained.

As at MSAP high school No. 2, a large segment of students are transient, and the school's mobility rate is high. In 1999-2000 more than 10 percent of the students enrolled at the beginning of the year had left by the end; one-third of students (33 per 100) either entered or left after the start of the year. In contrast to MSAP school No. 2, transience here is more evenly divided between students who leave and new students who enter after the start of the year.

In 1999-2000, a majority of MSAP high school No. 3's students (62 percent) were Hispanics. Whites (21 percent) and blacks (13 percent) accounted for most of the rest. More than one-third of the students (38 percent) were ELLs, among whom most (90 percent) were native Spanish speakers.

The comparison high school is located in a racially and ethnically diverse area where the competition between new immigrants and more established residents for housing and jobs is reported to be more apparent than in other areas of the city. The school served approximately 1,500 students in 1999-2000, of whom almost 90 percent lived within the neighborhood attendance zone. The facilities include a number of largely single-story buildings that date from the late 1950s. While the facilities are generally older than those found at two of the MSAP schools, the comparison high school does not rely extensively on portable units.

Student transience is just as big an issue in this school as it is in some of the MSAP schools: more than two-fifths of students (43 per 100) either entered or left after the start of the year. Close to one in five (17 percent) of the students enrolled at the beginning of the year were not attending the school by the end of the year. A large number of students entered the school during the year, reflective of the large immigrant population served by this school.

Ten years ago, the enrollment was comprised entirely of white students. The arrival of a large refugee and immigrant population in the relatively low-rent neighborhoods nearby has changed the composition of the enrollment radically since then. In 1999-2000, no single group constituted a majority of the students. Asians and Hispanics each represented about one-third of the students (35 percent and 33 percent, respectively). Blacks represented almost one-quarter (23 percent) of the students, and fewer than one in ten (9 percent) were white. Moreover, almost half of the students (46 percent) were ELLs, and about 30 different languages are spoken. While Spanish-speakers constituted the largest group of ELLs (40 percent), one third (35 percent) spoke a variety of Asian languages (e.g. Vietnamese, Khmer, Lao, Cantonese), and about one-quarter (24 percent) spoke a variety of other languages such as Somali and Serbo-Croatian.

Program, Themes, Goals

This section describes the programs implemented at the three MSAP-supported high schools. The first part discusses the magnet themes and the second discusses the acquisition and deployment of technology by the three schools.

The magnet themes

Career path magnet school. *One schoolwide magnet is organized into five unique career paths that combine academic with applied learning. At the end of the ninth-grade, students are to select one of the career paths, which include transportation; engineering; hospitality, tourism, and recreation; science; and world languages and communication. Work needed to construct coherent four-year programs of study within each career path was in its early stages..*

MSAP high school No. 1 has adopted a theme of career exploration with an emphasis on technology. As described in the MSAP application, the schoolwide magnet program is organized into five unique career paths that combine academic with applied learning. At the end

of the ninth-grade, students are to select one of the following career paths:

- Transportation.
- Engineering.
- Hospitality, Tourism and Recreation.
- Science.
- World Languages and Communication.

The purpose of these five paths is to help students understand the relationship between academic skills and career skills. Each career path consists of a sequence of academic and vocational courses that are outlined in the school's course catalog. Specialized courses are offered in each career path such as airplane pilot courses, aircraft design and construction, automotive mechanics, computer repair, graphic communications, drafting, economics, marketing, and Japanese. Each career path includes all of the academic courses required for graduation and college entrance as well as for the attainment of technical workplace skills for careers. Students who successfully complete the requirements of a career path are issued a certificate indicating their mastery of the skills in that field.

While many of the specialized courses were in place when we visited the school, work needed to construct coherent four-year programs of study within each career path was in its early stages. The general plan called not only for specialized course offerings, but also for an analysis of career-related requirements and topics that could be addressed by academic courses, and the design of academic courses tailored to each career path. This required the school's faculty to form multi-disciplinary committees dedicated to the exploration and design of each career path. During our visits to the school, teachers told us that some committees had been more active than others in this endeavor.

MSAP high school No. 1 used its MSAP funds (in combination with state funds) to upgrade school technology with new classroom computers and access to the Internet. The school averages one computer for every 3.4 students, and the Internet is accessible in nearly every classroom.

Televisions, VCRs and video cameras were also acquired to support production of classroom demonstrations. Class sets of inexpensive, portable word processors were purchased for student projects and electronic note taking.

While a small number of teachers indicated that they were involved in applying for or developing the MSAP-funded program, most teachers considered themselves to be familiar or very familiar with the school's magnet program. Teachers generally reported that they agree with the curriculum, methods, and activities of the program. Faculty who had been teaching a particular class prior to the start of the MSAP grant typically reported that MSAP encouraged or facilitated changes in their instruction practices. For example, teachers reported altering teaching methods to include long-term or group projects and increased use of technology.

The magnet program at **MSAP high school No. 2** features technical and preprofessional curriculum tracks in medical and health sciences and business technology. The technical tracks are intended to provide vocational training for health-related careers such as certified nursing assistant, medical technician, surgical assistant, and paramedic, and careers in business technology including salesperson, records technician, and accounts clerk. The preprofessional tracks are designed to prepare students for college programs leading to professional careers in medicine such as physician, registered nurse, veterinarian, physical therapist, or medical researcher; or business careers such as accountant, financial analyst, broker, etc.

The program is designed to provide the student with academic and real world experience. It maintains partnerships with numerous hospitals, universities, research institutes, businesses, and other organizations that provide paid and voluntary internship opportunities to students in all grades. Students can receive certification for entry into the healthcare workplace as a nursing assistant, home health aide, phlebotomist, or medical lab assistant. Qualified students can enroll in a partnering university and obtain college credit for successfully completing its biochemistry course.

The school has coordinated its funds from the MSAP grant and other sources to increase students' exposure to new technologies, with an emphasis on those used in medical science and research. Some of the equipment for medical science classes purchased with the MSAP funds includes dissecting microscopes, incubators, spectrophotometers, a clinical chemistry analyzer, and lab stations. The school also purchased equipment usable in a wider range of course work including additional computers and portable word processors. The school's MSAP coordinator stressed that the school had made its equipment purchases carefully, only selecting new technology that was tied to the curriculum.

According to an AIR teacher survey administered in 2001, the faculty is broadly supportive of the school's magnet program. Those who have taught longer in the school (more than two years) are quite familiar with the magnet program and agreed or strongly agreed with the program's curriculum, teaching methods, and special activities. The more recently hired faculty also tended to agree with the program, although they were understandably less familiar with it than the long-term faculty. Individually, faculty members seem to be particularly dedicated to working with students who have been disadvantaged, and providing those students with opportunities they might not otherwise experience.

MSAP high school No. 3 features three magnet programs, one that includes all students at the school and two in which only some students participate. The whole-school program is the Writing Academy, which has operated and continued to evolve in the school for about ten years. The Academy's rationale is that the ability to write enhances communication and encourages critical thinking skills across the curriculum. The goal of the program is to promote overall student performance through improved writing ability. The program is directed by the school's writer-in-residence, and is coordinated through a computerized writing center staffed by trained writing assistants. In addition to organizing activities and providing services to students, the Writing Academy also works with teachers to strengthen their abilities as writers, writing instructors, and computer users, and to help them generate the writing assignments that are part of the school's writing-across-the-curriculum focus. At MSAP High School No. 3, all students are expected to have at least one writing assignment per week in every subject. (Even sports teams may be asked to write reflections on their performance in recent competitions and strategies for preparing for the next game.) In addition, each year all students participate in a multi-week writing workshop that addresses grade specific topics (for instance, sophomores focus on the five-paragraph essay, juniors on a research paper, and seniors on college essays). The academy offers other short courses as well, such as poetry and work on the extended essay required as part of the International Baccalaureate (IB) program, and sponsors several student publications as well. Finally, the Writing Center is open all day long and after school to accommodate teacher-led groups and individuals who want to use the center's technology or receive additional help with their writing.

The IB is a comprehensive and rigorous two-year curriculum that adheres to international standards issued from the program's headquarters in Geneva, Switzerland. The program is broadly intended to provide students a balanced education with an international perspective and to promote international understanding through a shared academic experience. More narrowly, the program authorizes the school to issue IB diplomas that are recognized for advanced standing in colleges and universities, and IB certifications that provide students an opportunity to earn college or university credits. In most schools, IB classes are taken by students who intend to earn these certifications by sitting for (and passing) end-of-course examinations in six subject areas covered by the IB curriculum. This well-known, "elite" program is intended to draw nonminority students into the school from throughout District D. The school also strives to identify and recruit resident students who are already enrolled at the school into the program as well. In order to give a broader population in the school access to the courses, students are encouraged to enroll in any IB class that interests them, regardless of their aspirations for the diploma, and has also subsidized the cost of taking the examinations for some students. The school has also established pre-IB courses to help freshmen and sophomores to prepare to participate in the IB program as juniors and seniors. Overall, about 600 of the school's 1,800 students participate in some of the pre-IB and IB classes.

The second magnet program within the school is a language immersion program, which was initiated in 1998 with its first entering class of freshmen. At the time of our visits to the school in 2000 and 2001, about 100 students participated. Students in the program receive one-third of their academic instruction in the target language (Spanish or French) so that they can experience the language in the context of a broad range of topics. The goal is for students to function equally well in the target language as they do in English or their first language. The language immersion program provides graduates from several District D middle school immersion programs with an opportunity to continue with advanced language studies in high school. The courses also provide

opportunities for immersion students and advanced native speakers of the languages to take courses together in preparation for Advanced Placement examinations.

The school employs about 80 classroom teachers. While a majority of those who responded to an AIR survey reported having five or more years of teaching experience, a majority also indicated that they had been at this school for two years or less. In addition to classroom teachers, the faculty includes two MSAP-supported resource teachers, one for the Writing Academy who operates a computerized Writing Center, and the other who coordinates the IB and language immersion programs.

Although none of the classroom teachers surveyed were involved in planning the program, some did report that the magnet program played a strong role in their decision to teach in the school. Almost all the teachers agreed with the program's curriculum, teaching methods, and activities, and a majority of those expressed strong agreement with the magnet program. The only teachers who did not report agreeing with the program were a few of the more recently hired teachers who indicated that they were not sufficiently familiar with the program.

A major focus of MSAP-funded professional development was writing instruction, in particular, writing across the curriculum. The training presented different techniques for teaching the stages of the writing process and for treating writing as a learning strategy or activity. In the first year of the grant, about a third of the teachers participated.

Magnet programs can lose their distinctiveness. As computer technology and business application software became commonplace throughout the district, the comparison school's business administration and technology magnet program no longer distinguished it from other schools, and the magnet was discontinued about seven years ago.

Several years ago, the comparison high school had a within-school magnet program focused on business administration and technology. As computer technology and business application software became commonplace throughout the district, the comparison school's

program no longer distinguished it from other schools, and the magnet was discontinued about seven years ago.

The infusion of technology

Acquiring, installing, and promoting the effective use of instructional technology is a state and a district priority as well as a major focus of District G's MSAP project. The district has developed technology standards for students, and requires that high school seniors demonstrate their computer

Impact of technology emphasis on budget. The magnet high schools devoted half or more of their MSAP budgets to the purchase of a variety of technologies.

skills by producing electronic portfolios. An MSAP project's district staff included resource teachers and a technology specialist to design an Internet-

based research curriculum and train the magnet school teachers in its use. All of the magnet high schools as well as the comparison school applied for and received state grants to upgrade their

technology and teachers' technology skills. In addition, the magnet high schools devoted half or more of their MSAP budgets to the purchase of a variety of technologies.

Each of the schools assessed its own needs and made its own choices about what technology to purchase. The Careers high school chose to install a schoolwide network that linked most classrooms to the Internet, as well as a plethora of Dream-Writers—inexpensive, portable word processing devices whose contents could be transferred to the computer network for printing and storage. The Writing Academy high school opted not to install a schoolwide network, but to supplement the Writing Center's collection of heavy desktop computers with a few sets of iBooks—small laptop computers linked to a common printer by a wireless connection and transported on carts that also functioned as recharging stations. This strategy fit well with the school's emphasis on writing across the curriculum: the carts of computers were moved from classroom to classroom depending on which teachers needed them for writing assignments or Internet research. As teachers became more comfortable with the new technology, schoolwide demand for the iBooks increased, prompting the purchase of additional carts in the final year of the grant. At the medical science and business magnet, technology purchases included lab equipment and instructional devices such as the Smart Board. The comparison school used its state grant to purchase additional computers for the school's computer labs.

In addition, professional development in basic computer skills, as well as the integration of technology into instruction, was provided to teachers at all the schools. Each year, the MSAP

Trend in development of faculty computer skills.

Professional development in basic computer skills as well as the integration of technology into instruction was provided to teachers at all the schools. Between 1998 and 2000, faculties at all the schools showed increases in the percentage of teachers who rated their computer skills at "instructional proficiency," which meant that they not only were able to use the computer for personal purposes (such as word processing or record-keeping), but also used them to enrich their classroom instruction.

project evaluator surveyed the magnet school teachers to obtain their self-assessments of the level of their computer skills. Between 1998 and 2000, faculties at all the schools showed increases in the percentage of teachers who rated their computer skills at "instructional proficiency," which meant that they not only were able to use the

computer for personal purposes (such as word processing or record-keeping), but also used them to enrich their classroom instruction.

School Instruction and Activities

The **Career Exploration High School** infuses a technological emphasis into its magnet program through a two-year "technology core" course requirement for ninth and tenth-graders. In this class the students are introduced to new and emerging technologies and are assisted in choosing a career path. The course is a practical, laboratory-based program designed to prepare students to function in a highly technological society. A few examples of the variety of projects include laboratory exercises that focus on robotics, applied physics, and electronic publishing.

In one class of about 30 students, two groups were assigned the task of developing an advertising campaign to sell a product. Each group had to organize its campaign from start to finish, including designing and pricing of advertisements for a product of their choosing. The group-based nature of the project required students to negotiate the design of the campaign within their group, as might be done at an advertisement agency. This type of assignment was not only consistent with the magnet program's emphasis on technology, but also provided an opportunity to apply knowledge and skills being learned in high school to a real world application. One limitation seemed to be that the large size of each group resulted in some students being less involved in the project than they might have been in smaller groups.

Technology is also a focus within some career paths. For example, students in the transportation career path may choose to study aviation. The series of courses in this path prepare the student for the FAA Private Pilot Written Exam and offer the successful students flight training and the possibility of obtaining a private pilot license. This career path has a broad educational impact on students in that it requires them to learn and apply an interdisciplinary set of skills. For example, students study aerodynamic and other principles of physics, meteorology, the impact of flight on human physiology, the history of aviation, and safety, among other topics. They learn to read and interpret data and acquire a better appreciation for the role of planning in a real world activity.

We observed one of the more advanced aviation classes in which approximately 12 students were receiving flight training on two simulators. They had to map out an approach for a landing and then execute the landing based on data they received on wind and weather conditions. The instructor had the students play chess while waiting their turn at the flight simulators because chess, like flying, requires strategy and planning. The instructor noted that the total number of students in the aviation courses is smaller than in other career paths because the minimum standards are more difficult. Students must have basic reading, writing and mathematics skills and retain a 2.5 grade point average in aeronautics and received at least a 2.0 in each of their other classes. Nonminority students represented 16 percent of students in the aeronautics program, approximately twice their representation in the school overall.

At the **Medical Sciences Magnet** the magnet program includes "medical lab assistant" classes for juniors and seniors. The students are introduced to the field of microbiology and taught modern medical laboratory techniques, such as blood and urine analysis. One class enrolled about ten students, each of whom was working on a project to analyze chemical contents of urine. The laboratory room was small, but appeared to be well equipped. The instructor, an experienced microbiology researcher, provided individualized attention to students. In keeping with the career preparation focus of the program, she encouraged the students to consider internship programs provided by the schools partnership programs. Following the class, the instructor explained that the magnet program provides practical training in the health field at various skill levels. She noted that without this program her students probably couldn't afford the high cost of vocational training for a skilled technical position, such as a medical lab assistant.

Even where the medical theme is not emphasized, some instructors introduce new technology and project-based learning approaches into their classrooms. One mathematics teacher, for example, conducted classes using a "Smart Board," which displays computer applications on a plasma panel of a large interactive whiteboard. The applications are activated by contact with the

board. The instructor was able to save her notes for the students and to recall sets of problems when reviewing previous material. Several of the male students were eager to demonstrate their work from an earlier project in which they had to rely on algebra and a bit of geometry to design the sturdiest possible

***New technologies related to teaching practices.** One mathematics teacher conducted classes using a “Smart Board,” which displays computer applications on a plasma panel of a large interactive whiteboard. The instructor was able to save her notes for the students and to recall sets of problems when reviewing previous material. Several students were eager to display their work from an earlier project in which they had to rely on algebra and a bit of geometry to design the sturdiest possible bridge for the least cost.*

bridge for the least cost. As each student called up his program, the board displayed the structure and cost of the bridge the student had designed, graphically simulated vehicles of selected weights moving across the bridge, and registered the stress levels on the bridge’s joints.

Computer-based programs do not guarantee that students will be engaged in an activity. The medical sciences magnet school maintains a computer-based learning center that is overseen by a computer lab specialist. The computers have software for reading, mathematics, chemistry, language arts, biology and life sciences. Most teachers use the lab as a tool for students to work on developing reading and mathematics skills. The self-paced programs print out an assessment sheet that illustrates student progress and areas of need. The instructional modules range in level from second-grade to post-college studies. In one mathematics class we observed, some students were breezing through problems at a rate that suggested the material did not challenge them, while others struggled and seemed to guess their way through the problems.

In **MSAP high school No. 3**, the International Baccalaureate and language immersion programs are evident in the specialized courses in which about 40 percent of the students enrolled. The academic accomplishments of the IB students (they had the highest rate of passing the demanding IB examinations in the area) are a point of pride for the school. The IB coordinator indicated that about 600 of the school’s 1,800 students participated in IB or pre-IB classes. IB classes and examinations are taken only by juniors and seniors. Of 120 students who sat for IB examinations in 2001, 19 were candidates for IB diplomas. The relatively small proportion of diploma candidates reflects the school’s decision to make the program available to a broader spectrum of students than typically participate.

The school’s use of technology and emphasis on developing students’ writing abilities was evident in several classes we visited. For instance, in an IB biology class, students conducted Internet searches to collect information for their research projects. The biology teacher reported that she sends students their homework assignments and answers their questions via e-mail. In an IB Spanish class, students recited poems by Spanish authors and gave short reports on the poets’ lives. One of the requirements of their poetry project was that they conduct part of their research on the Internet. In a literacy class for English learners, students were using the iBooks to search the Internet for information related to a Steinbeck novel they were reading. Their assignment was to use the information to write a paragraph for a newspaper article on their chosen topic. Finally, in an IB physics class, the teacher conducted a lesson on the properties of light using both an overhead

projector and a large video screen that displayed images that he had accessed on an Internet science site.

The comparison high school has limited funds for innovative curriculum and specialized equipment such as those observed in the magnet schools. Nonetheless, the school seemed to have a pleasant atmosphere and a willingness to address the challenges it faced. Administrators expressed pride in the positive multicultural community that existed among faculty and students at the school. The English department chair reported that the English faculty was working with mentor teachers from a professional development organization focused on writing to revamp its language arts curriculum and instructional practices, and in 2001 we were told about plans to convert the school to a block schedule the next year in hopes of promoting instructional innovations that would help to improve student achievement. The school had used its state technology grant to equip its computer lab with new computers, which appeared to be in regular use during our visits to the school. In one lab, for instance, we observed a group of high school seniors creating electronic portfolios to meet one of the district's technology mastery requirements for graduation.

Summary

District G used its MSAP grant to build distinctive curricular offerings and foster the use of educational technology in its magnet schools. It employed a marketing firm to help the schools frame positive identities within the district and to attract students from throughout the district to attend them. Only a few of the schools made progress toward meeting their desegregation objectives. Several factors probably contributed to this result, including the continuing increase in the minority population of the district, overcrowding in the schools that limited the number of openings for nonresident students, and the state accountability system's labeling of schools as "low performing" based on the results of standardized test scores. The schools had mixed success in meeting the student achievement objectives that the MSAP project set for them; elementary schools met most of these objectives, while secondary schools met half or none of them.

The implementation of the programs originally envisioned in the magnet grant was complicated by events that occurred in the district between 1998 and 2001. In particular, the district's evolving curriculum reforms limited the amount of time that many students could spend in activities related to the schools' magnet themes. This led to the withdrawal of magnet status from one of the MSAP elementary schools during the grant and was a factor in the withdrawal of magnet status from one of the high schools at the conclusion of the grant. Nonetheless, in the schools we visited, all were able to at least partially implement their themes and had made good use of the technology they acquired through the grant.

Benefits

At all three of the magnet high schools we visited, we observed evidence of the new technology that had been acquired and deployed, and that an increasing number of teachers were learning how to use technology in their classes. In addition, specialized course offerings made possible by the MSAP grant helped the schools to shape distinctive identities among the district's high schools, and at least in the case of the Writing Academy, a magnet theme diffused widely through the school's curriculum offerings. In addition, MSAP funds had enabled magnet schools to engage (with

varying degrees of energy) in aligning their curricula with state content standards and exploring innovative instructional strategies (e.g., writing) across the curriculum and problem-based learning.

Challenges

The generally low achievement level in the entering student populations of the magnet schools presented a challenge for the MSAP project for two reasons. First, some magnet classes required academic skills that many students in the school lacked, and thus limited the number of students with access to the magnet curriculum. In particular, many students in the medical magnet lacked skills needed to take laboratory science courses and qualify for internships. More importantly, students with low skill levels (scores below the 50th percentile on the state achievement test) in reading and mathematics were required to enroll in additional hours of intensive classes in these subjects that used a prescribed curriculum. For students performing below grade level in literacy and mathematics, these intensive courses occupied half or more of the students' course work, leaving them little time for meeting other requirements, let alone taking special courses associated with the magnet program. This was a special challenge at the career high school, where elective courses comprised a substantial fraction of the courses required to complete the career paths.²⁵ Even at MSAP high school No. 3, where the Writing Academy was a magnet strand that addressed the needs of both high- and low-performing students, the low skill level of the majority of students was a challenge. The IB coordinator commented that the school would have liked to include at least half of the students in the IB and language immersion programs, but were unable to do so because so many students still had low literacy skills. The magnitude of this problem is suggested by the fact that in spring 2000, the percentage of freshmen and sophomores in the magnet high schools with low scores in reading ranged from 54 percent to 85 percent, and the percentages scoring low in mathematics ranged from 48 to 70 percent.

Growth in the number of minority students residing in the attendance zones of MSAP schools creates a dual problem for efforts to reduce minority group isolation. As the number of resident minority students increases, so does the number of nonresident white students needed to reduce isolation, while at the same time the number of spaces available to nonresident students may diminish because facilities have become too crowded.

The survival of the medical sciences magnet was also challenged by the small size of the school, and the high per pupil cost of keeping it open. Although there was strong neighborhood sentiment for keeping it open, the school's inability to fill its classrooms made it a prime candidate for consolidation with another school in the area. The likelihood that the school would be closed limited investments in its upkeep, which may have further discouraged students to enroll there. During the grant period, the size of the faculty was cut by more than 10 percent. In addition, by the last year of the grant a number of support positions had also been cut, including that of a magnet coordinator and magnet specialist. The specialist was a medical research doctor who aided in curriculum, internship, and partnership development.

The Career Exploration magnet did not fully implement the career paths envisioned in the grant application. Delays in implementation seemed to stem from multiple sources. First, it appeared that most of the faculty in this large school (123 teachers) had not been involved in planning the magnet

²⁵ Inability to complete a career path did not prevent students from earning a regular high school diploma.

program as the application was being written; thus, there was little if any “buy-in” to the program before it was adopted. Second, the plan called for teachers to reflect on and revise their ideas about the relationship between their content area instruction and vocational preparation. This would have represented a challenge under any circumstance, but was a special challenge in District D during the period in question. The district’s reforms had created a good deal of dissatisfaction among district teachers that led to limited enthusiasm for taking on assignments beyond those required by labor contracts. Finally, as suggested above, the requirement that low-scoring students take extra hours of instruction in reading and mathematics limited the number of students who would have time to pursue specialized course work. By the end of the grant, it appeared likely that the career path concept would be abandoned.

Lessons Learned

A lesson that the MSAP project director and MSAP school officials learned from their recruiting experience was that marketing is not a one-time event. It is important to keep the name of the school out in the public throughout the year. One month a school may run a public service announcement, another month they use bulk mailing, and another month they would be featured in a local newspaper. Even when the school is not actively recruiting, marketing activities create a store of information for parents that will lead them to take action on registering their child for enrollment in one of the magnet schools when applications are being accepted.

Plans for the Future

District D applied for and was awarded a new MSAP grant in the 2001-2004 funding cycle. The new grant supported the establishment of a new set of magnet schools and the continuation of the district staff’s Internet-based lesson development. At the end of the MSAP grant, the district went forward with its plan to “demagnetize” MSAP high school No. 2. Although the school continued to operate a medical sciences academy for resident students, it no longer attempted to attract nonresident students into the school, and reduced funding led to the departure of key magnet faculty such as the biology lab teacher. District D continues to support the magnet programs in the other seven magnet schools.

Case Study, District E

District Context

Location and Size

District E is located in a Western city that has a population of approximately a half million persons. The local economy is based on manufacturing, extractive industries, and several large service industries. Government and education are major employers. The city is home to the state's major university and several smaller colleges.

The district serves three noncontiguous areas of the city and covers almost 200 square miles. Students are enrolled in 65 elementary schools (PK-5), 9 middle schools (6-8), 8 high schools (9-12), 1 middle and high magnet school (6-12), and 4 special centers. Community support for schools has been problematic: bond issues require 60 percent approval, and at the time of the 1998 MSAP grant award, city voters had failed to approve bonds to support schools for several years. Consequently, most of the district's school buildings were outdated and in need of repair; resources (e.g., for computers and special programs) were limited; and teacher salaries were lower than in nearby areas.

Student Composition

The district's enrollment of approximately 40,000 is 65 percent minority. About 40 percent of the students are black; 35 percent white, 18 percent Hispanic, and the remainder Native American and Asian. About 78 percent of the students are eligible for free or reduced-price meals.

Magnet School History

District E has a history of racial segregation in its neighborhoods and consequently in its public schools. In 1972, the district's enrollment was just under 30 percent minority. In that year, the district implemented a court-ordered desegregation plan by restructuring attendance zones to create racial balance. Under the plan, some students at all grade levels were bused to schools outside their neighborhoods to create a more balanced racial configuration. During the following decade, the

Student composition. *When District E shifted from a cross-town busing plan to neighborhood schools, the student composition of several schools in one area of the city became almost exclusively black. The district is using MSAP funds to create magnet programs in seven of these minority group isolated schools.*

district lost more than 40 percent of its enrollment as thousands of white families moved to suburban districts or enrolled their children in private schools.²⁶ The court's control of the district ended in 1977, but District E continued to operate in accordance with the court's desegregation plan

until the late 1980s, when it began to shift back to a system of neighborhood schools and a voluntary majority-to-minority transfer program. As a consequence of the shift, the enrollment of about a dozen schools in one high-minority residential area within the district became almost entirely black. A court challenge to the district's return to neighborhood schools eventually resulted in a decision in the district's favor. In 1993, the board of education revised its desegregation plan to

²⁶ The MSAP project director reports that ten elementary and six secondary private schools serving a predominantly white clientele have opened in the area over the past 20 years.

introduce magnet schools as a voluntary approach to reducing racial isolation throughout the school district, and four locally funded magnet schools opened during the 1993-94 school year. In 1997, responding to the continued pattern of isolation in several schools, the board of education modified the plan again to convert seven of the district's most racially isolated schools into magnet schools.

Schools of choice are an important and growing element in the district's desegregation efforts because, according to the project director, forced busing "was not working." In addition to magnet schools, the district's schools of choice include ten specialty schools and four enterprise schools. Specialty schools are similar to magnets, in that students must apply for admission, but criteria for acceptance to these schools include auditions or portfolios, test scores, and interviews. Enterprise schools are governed by local advisory boards. During the MSAP grant period, the state government passed legislation enabling the creation of charter schools, and four opened in fall 2000.

The MSAP application was developed by a group that included the associate superintendent, director of grants management, an outside consultant, and the principals of the seven schools proposed as magnets. Themes were agreed upon with each school principal and staff so that initial support was ensured. The teachers' union was also involved. Parents were involved through Parent-Teacher Association meetings; however, attendance at those meetings varied considerably from one school to another. After the grant award was made, staff in the seven magnet schools were given the option of staying in the school or being transferred to another school in the district. The project director reports that "most stayed."

State Systemic Reform

State E's educational system is comprised of a large number of small rural and suburban school districts and a few large urban districts. The state has a long tradition of local autonomy and limited funding for education. In combination, these factors have led to a system in which the implementation of legislated reforms are sometimes delayed pending appropriations to finance them.

The state has had content and performance standards in several school subjects (including English language arts, mathematics, history, and science) for many years, and reviews them triennially. Local districts are expected to design their own assessments to determine whether students are meeting the standards. Each district is also required to develop a professional development program for its teachers, and the state provides support through several regional centers that include videoconferencing facilities.

The development of a coherent system of achievement tests across the elementary grades was not initiated until required by NCLB (after the grant period). During the grant period, the state administered criterion-referenced tests tied to the state's content standards at grades 5 and 8, and criterion-referenced end-of-course tests for high school English. Since the mid-1990s, it has administered nationally normed standardized achievement test at three grades 3, 7 and one high school grade (the grade changed from 10 to 11 in 1999). District E uses the same norm-referenced test to assess other grades each fall and spring so that each grade is assessed either with the norm-referenced test or the state's criterion-referenced test (CRT).

Based on the pattern of fifth- and eighth-grade CRT scores, the state defines schools in need of improvement as those in which more than 30 percent of students tested fall below “satisfactory” in both reading and mathematics, and “challenged” schools as those that fall below this criterion level for three successive years. During the grant period, no sanctions or state support was attached to this low-performing status, although many of the identified schools used federal funds (e.g., Comprehensive School Reform Demonstration (CSRD) grants) to support school improvement efforts.

District Reform Initiatives

The district has adopted the *Baldrige Education Criteria for Performance Excellence Framework*, a business planning and management model that has been adapted to educational settings. The model informs planning at both the district level and in individual schools. The core elements of this framework focus on leadership, strategic planning and goal-setting, management support for change, and the collection and analysis of data to inform planning and monitor results. A key concept underlying the framework is the distinction between the “what” and “how” of reform. The idea is that *what* will be taught is determined at the district level, which provides the resources to ensure that it can be done. The *how*—the strategies and practices to implement the *what*—is determined at the school level. In the schools we visited, principals and teachers referred to the what-versus-how distinction numerous times. District E teachers have received training in how to develop thematic curricula that are linked to research-based methods and in strategies of the Baldrige framework. Such strategies include learning to collect, analyze, and use student data to adjust curriculum and instruction.

The district also encourages schools to adopt “research-based” practices and programs that are believed to be effective in promoting student achievement, discipline, and self-esteem. The district’s list of approved interventions includes several that have been adopted by one or more of the MSAP-supported magnet schools: Core Knowledge, Great Expectations, Arts Integration, Effective Schools (CSRD), and school uniforms.

Project Characteristics

Overview

Starting from scratch. The 1998 grant initiated District E’s first MSAP project, and none of the MSAP-supported schools had operated magnet schools before. In addition, the district was not informed that it had received a grant until late September 1998, and the district did not hire an MSAP project director until January 1999. Consequently, 1998-1999 served as a planning year; and recruitment efforts began in spring 1999 to attract students for the 1999-2000 school year.

The MSAP project in District E supports five elementary schools, a middle school, and a high school. The elementary schools include a mathematics and science magnet, a Montessori school, a visual and

performing arts magnet, and two schools that focus on mass media—one emphasizing written communication and the other oral communication. The middle and high schools also have mass

media themes, to make it possible for interested students to continue with the same theme from kindergarten through grade 12.

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District E used about 50 percent of its MSAP funds to buy supplies and equipment for its seven new magnet schools, and about 40 percent for added staff, including from one to four resource teachers per school. These resource teachers, whose roles vary by school, help the school implement the theme. Each of the five elementary schools has also added an MSAP-supported parent liaison to support families who are sending their children across town to attend the magnet schools. Their role will be discussed further in a later section of this report.

District-Level Staffing

At the district level, the MSAP project involves the assistant superintendent for education services, who spends an estimated 15 percent of his time overseeing the magnet school program; a project director, who reports directly to the assistant superintendent and works with the principals of MSAP schools, who report to him and are responsible for the operation of the magnet program. The project retains an oversight team, consisting of the superintendent, assistant superintendent for educational services, project director, director of curriculum, directors of elementary and secondary education, executive director of management operations, director of information and technology, and a project evaluator. The team's responsibilities include disseminating information to building administrators; providing input into the planning process; reviewing and coordinating the business and financial aspects of each magnet school; providing leadership to enhance planning for the educational needs of each school; providing support to the magnet sites with recruitment and public relations; maintaining coordination between the schools, other desegregation efforts, and individuals and agencies that will help attain the program's objectives; designing and implementing a system to evaluate program effectiveness; and communicating, coordinating, and disseminating the "magnet school concept" to the public and partnering organizations within the metropolitan area, and throughout the nation.

The project also has a promotion specialist, who assists with student recruitment, parent networking, student and parent orientations, and student selection; and a combined secretary and data clerk. An MSAP-funded assistant to the project director helps coordinate and facilitate the project, particularly through meetings with the resource teachers and parent liaisons in the MSAP-supported schools.

Recruitment Issues and Strategies

This district's MSAP project hired a promotion specialist to manage student recruitment efforts. The specialist worked with the staff at each of the seven magnet schools to plan student recruitment, refine the application process, and develop brochures and promotional materials. He coordinated a variety of outreach activities to canvass the district with publicity and application forms. Some of

these activities included mailing application forms to every student and parent in the district, hosting tours and open houses at magnet schools, developing and disseminating media releases and videos, and telephoning parents. A magnet fair was held that attracted students and parents from throughout the district. Students from the magnet schools developed displays to promote their school's theme. Visitors were given brochures and encouraged to talk with the students and their parents and ask questions.

The implementation of magnet programs and recruitment to those programs was delayed due to the late notification of funding in September 1998. The recruitment effort, which first got underway in January 1999, was to fill openings in the magnet schools beginning in fall 1999, the second year of the project. Recruiting during that year was a "hard sell" according to the project director because students were being recruited when there was nothing yet to show. Visitors had to be told to use their imagination. There were no waiting lists in the second year of the project, as all students who applied were admitted.

The programs were only in place for the third and final year of recruitment. In that year the elementary schools reported short waiting lists. This represented quite a shift according to the project director: Just two years earlier in one of the schools, parents had made up addresses to avoid having their children attend the school and now they were making up addresses so their children would be able to attend. Thus, there is some evidence that the MSAP magnets are convincing parents to send their children to schools that they previously avoided.

Nevertheless, implementation of the MSAP program in District E has had to contend with a serious problem related to busing. The school district covers 184 square miles, encompassing three noncontiguous areas, which means that most non-neighborhood students *must* take school buses to school. The city has had a tradition of bus service from door to door (i.e., from home to school) for students, and if a student misses the bus, the bus continues its run and then goes back for the missing student. The bus fleet is aging (with more than 60 percent of the buses more than 10 years old), and the bond issues that would have provided replacements have failed to pass. Bus drivers have reportedly been difficult to hire, and the district cannot employ enough drivers to maintain a regular and consistent bus schedule. During the first years of the MSAP project, the project director and MSAP principals said, some of the parents who chose to send their children across town to the magnet schools were happy with the schools, but became frustrated with the transportation situation, withdrew their children, and reenrolled them in their neighborhood schools. By the time of the second site visit (near the end of the three-year grant period), this situation had improved somewhat with the hiring of more bus drivers and an increase in bus drivers' salaries.

Desegregation Plan and Objectives

Minority isolation. *The MSAP-supported schools are the most racially isolated schools in the district. Each had a minority enrollment of 94 percent or higher in 1997-1998. All seven of the magnet schools experienced some reduction in minority isolation.*

residential areas. The MSAP-supported schools are located in the poorest sections of the city and

District E is voluntarily implementing a desegregation plan to reduce minority group isolation in five elementary schools, one middle school, and one high school. The project's ability to attract students to its MSAP-supported schools is affected by the historic *de facto* segregation in the city's

are the most racially segregated in the city. Thus nonminority parents must be convinced that the magnet schools offer special programs that warrant sending their children on long bus rides across the city, into neighborhoods that they rarely enter.

The MSAP-supported schools are the most racially isolated schools in the district, each having a minority enrollment of 94 percent or higher in 1997-1998 compared with about 68 percent for the district overall. All seven schools experienced some reduction in minority isolation.

In three of the elementary schools, the proportion of minority students decreased by between one and nine percentage points. These programs tend to attract an increasing number of both nonminority and minority transfer students. These schools include a performing arts program, which garnered the largest increase in nonminority students, followed by a mathematics-science magnet, and a Montessori school. In the other two elementary school programs, both with a mass media theme, the decrease in minority enrollment was fractional. The number of nonminority students remained constant at only one to three students. The reduced percentage of minority students resulted instead from a decrease in the number of minority students, indicating that these programs had not yet started to attract students.

In the MSAP-supported secondary schools, MGI decreased by two percentage points at the high school. At the middle school the percent minority enrollment increased slightly, but as this increase is less than the change in the proportion minority students in the district, the MSAP middle school is also considered to have reduced MGI. The programs at both of these schools focus on mass media and communications technology. The high school program experienced an increase in the number of both nonminority and minority students, indicating that this program is attracting students, whereas the number of both nonminority and minority students decreased in the middle school program.

For progress to be sustained, it is important that magnet schools be able to retain students who have chosen to attend. The progress of the schools in reducing MGI may have been greater had the district not encountered problems with the bus system that caused nonminority parents to withdraw their children from some of the magnet schools. During the second visit of the site team, it appeared that this may represent only a temporary setback as more drivers had been hired and salary disputes were being resolved.

The Role of the MSAP Project in Supporting State Systemic Reform and Other District Initiatives

In its application for an MSAP grant, District E proposed the development of thematic units, based on the district curriculum, as innovative practices for each school. The thematic units were to be based on a minimum of 10 specific innovative, documented, research-based methods of instruction proven to reduce the achievement gap of lower-income minority students. The district also proposed that teachers would receive training on these identified research-based innovative programs. Additional professional development and staff planning time were allocated for aligning the magnet school curricula with the state content standards.

Student Achievement

District E set three achievement objectives for all seven of its schools. The first objective called for at least 70 percent of the magnet students in each magnet school to gain at least two percentile points between fall and spring administrations of a nationally-normed test.²⁷ None of the schools

Achievement goals. *The district set three achievement objectives for its MSAP-supported schools. One school met two of the objectives. Other schools made some progress toward meeting one or two of the objectives. The relatively short time that the schools had to show improvement may have been a factor in this result.*

met this objective, and patterns of performance were inconsistent over time (performance levels increased in some schools but decreased in others). The second objective was that at least 80 percent of magnet students would score at grade-level proficiency on the state's criterion-referenced tests (administered at grades 5 and 8). The third objective was that at least 80 percent of magnet students would show

six to seven weeks of growth at the end of each nine-week grading period, based on locally determined performance measures (e.g., teacher-prepared tests and portfolios of student work). Both of these objectives were met by the district's Montessori magnet (whose fifth-grade students were the district's top performers on the criterion-referenced test). None of the other schools met either objective, although two other elementary magnets showed substantial improvement on the second objective and all schools made some progress toward meeting the third.

A number of factors may account for schools' limited success in meeting the project's performance targets. First, the first objective called for improvement across a range of subjects not all of which were the focus of the individual magnet schools programs. Second, the state's criterion-referenced tests had only recently been established. The project's evaluator commented that because the tests were new, significant improvement in test scores was not expected to occur for at least three years. Third, given that the magnets were established in schools with a history of low academic achievement, the magnitude and speed of improvement required by the objectives may have been unrealistic. District E's magnet programs did not exist prior to 1998. They were phased in over the course of the grant period, and implementation was delayed by late notification of the grant award. Thus, the first year's assessments were made at the end of a year that had been devoted primarily to planning, and, as discussed in the final report, two to three years may be too short a timeframe for innovations in instruction to be reflected in substantial improvements in students' test scores.

Finally, it should be noted that the ambitious achievement objectives set for the MSAP schools were different from those by which the schools were judged within the district. For instance, although one school did not meet the MSAP goals, the principal cited gradual increases in the proportion of students each spring year who scored above the 50th percentile on the norm-referenced tests as a sign of progress; and two schools cited for poor performance on the state's criterion-referenced test in 2000 scored well enough to be off the list in 2001.

²⁷The assessment covered reading, mathematics, science, and social studies. The project's results were not disaggregated by students' minority status or grade. Because the student population in most of the schools was almost entirely of one ethnicity, disaggregation by minority status was not crucial.

Professional Development

In accordance with the district's site-based management philosophy, each school identified its own areas of need for professional development. The MSAP application called for faculty in each school to be involved in 120 hours of professional development each year devoted to preparation in theme-related instruction as well as standards.

Innovative Practices

The application called for schools to adopt at least 10 research-based instructional innovations each year. District E had a list of such interventions that it encouraged all of its schools to consider, including programs such as Great Expectations (focused on orderly, respectful behavior) and Core Knowledge (a curriculum program that requires coverage of specific content in each of the grades K through 8), as well as practices such as school uniforms, and integration of arts into academic instruction. Each of the case schools as well as the comparison schools had adopted a number of these interventions among others.

School-level Programs and Activities

Overview

In 1998, with its first grant from the Magnet Schools Assistance Program (MSAP), District E undertook an ambitious magnet school programs for seven of its poorest and most racially isolated schools. Not only did the district plan to develop unique programs in three elementary schools, but simultaneously to implement programs in two other elementary schools that would be linked thematically to new magnet programs in a middle school and a high school. However, a change in superintendents occurred near the beginning of the grant period; the grant technicalities were not worked until later September 1998; and the magnet project director did not begin his job until early 1999. Consequently, the 1998-1999 school year served as a planning year that culminated in an announcement in spring 1999 that the magnet schools would open for the 1999-2000 school year. Thus, the project was characterized by ambitious goals and big challenges.

This report focuses on four of the elementary schools and two comparison elementary schools that AIR visited in spring 2000 and 2001. All of these schools are located in a HUD enterprise zone, an inner city area targeted for renovation and new business ventures. The residents are almost all black. The area includes residential neighborhoods of small brick homes, apartment complexes, and commercial areas with many buildings boarded up or in poor repair. Parts of the area are numbered among the city's highest crime neighborhoods.

All of these magnet and comparison schools have Title I programs; three of the four magnets have Title I schoolwide programs. Students in all six schools are required to wear uniforms, and all six schools have adopted Marva Collins's Great Expectations program, which focuses on student comportment and respect. Administrators and staff at several of the schools commented on the serious problems their students face. Many live in single-parent households or with extended family members because their parents are in prison or contending with drug problems. Most of the children are eligible for free or reduced-price meals. In order to help students comply with school

dress codes, faculty in some of the schools launder students' clothes and maintain a wardrobe of extra clothes for students to borrow.

MSAP Elementary School No. 1	MSAP Elementary School No. 2
<p><i>MSAP School Theme:</i> Visual and Performing Arts</p> <p>Grade Levels: PK-5</p> <p>Student Characteristics Number of Students: 363 Race-Ethnic Breakdown of Students:</p> <ul style="list-style-type: none"> • Black: 86% • White: 12% • Hispanic: 1% • Am. Indian/Alaska Native: 1% • Asian/Pacific Islander: <1% <p>Percent Free/Reduced-Price Lunches: 89%</p> <p>Teacher Characteristics Number of FTE Teachers: 33 Race-Ethnic Breakdown of Teachers:</p> <ul style="list-style-type: none"> • Hispanic: 0% • White: 89% • Black: 11% • Asian/Pacific Islander: 0% • Am. Indian/Alaska Native: 0% <p>5+ Years of Teaching: 57% Newly Hired: 23%</p> <p>School and Neighborhood Characteristics</p> <ul style="list-style-type: none"> • Building over 70 years old, well-maintained • Inner city residential neighborhood predominately black, with many elderly residents; few businesses (some boarded up), night crime area 	<p><i>MSAP School Theme:</i> Mass Media and Written Communications Technology</p> <p>Grade Levels: PK-5</p> <p>Student Characteristics Number of Students: 232 Race-Ethnic Breakdown of Students:</p> <ul style="list-style-type: none"> • Black: 97% • White: 2% • Hispanic: 1% • Am. Indian/Alaska Native: <1% • Asian/Pacific Islander: 0% <p>Percent Free/Reduced-Price Lunches: 99%</p> <p>Teacher Characteristics Number of FTE Teachers: 17 Race-Ethnic Breakdown of Teachers:</p> <ul style="list-style-type: none"> • Hispanic: 0% • White: 50% • Black: 45% • Asian/Pacific Islander: 0% • Am. Indian/Alaska Native: 5% <p>5+ Years of Teaching: 50% Newly Hired: 20%</p> <p>School and Neighborhood Characteristics</p> <ul style="list-style-type: none"> • Building over 70 years old, well maintained since magnet funding • Inner city residential neighborhood

MSAP Elementary School No. 3	MSAP Elementary School No. 4
<p><i>MSAP School Theme:</i> Montessori</p> <p>Grade Levels: PK-5</p> <p>Student Characteristics Number of Students: 354 Race-Ethnic Breakdown of Students:</p> <ul style="list-style-type: none"> • Black: 95% • White: 4% • Hispanic: 1% • Asian/Pacific Islander: 0% • Am. Indian/Alaska Native: 0% <p>Percent Free/Reduced-Price Lunches: 81%</p> <p>Teacher Characteristics Number of FTE Teachers: 24</p> <ul style="list-style-type: none"> • Black: 36% • White: 64% • Hispanic: 0% • Asian/Pacific Islander: 0% • Am. Indian/Alaska Native: 0% <p>5+ Years of Teaching: 72% Newly Hired: 16%</p> <p>School and Neighborhood Characteristics</p> <ul style="list-style-type: none"> • Building over 60 years old, well maintained • Quiet, low income neighborhood of small brick houses, not a high crime area; many single parents and elderly people raising children; nearby main street has boarded up and run down commercial buildings 	<p><i>MSAP School Theme:</i> Mass Media and Broadcast Communications Technology</p> <p>Grade Levels: K-5</p> <p>Student Characteristics Number of Students: 230 Race-Ethnic Breakdown of Students:</p> <ul style="list-style-type: none"> • Black: 96% • White: 4% • Am. Indian/Alaska Native: <1% • Hispanic: 0% • Asian/Pacific Islander: 0% <p>Percent Free/Reduced-Price Lunches: 99%</p> <p>Teacher Characteristics Number of FTE Teachers: 19%</p> <ul style="list-style-type: none"> • Black: 38% • White: 62% • Hispanic: 0% • Asian/Pacific Islander: 0% • Am. Indian/Alaska Native: 0% <p>5+ Years of Teaching: 43% Newly Hired: 24%</p> <p>School and Neighborhood Characteristics</p> <ul style="list-style-type: none"> • Building almost 50 years old • Quiet, low- income residential neighborhood; some students being raised by grandparents while parents are in prison or contending with drug problems

MSAP Comparison School No. 1	MSAP Comparison School No. 2
<p><i>School Theme:</i> None Grade Levels: PK-5 Student Characteristics Number of Students: 254 Race-Ethnic Breakdown of Students:</p> <ul style="list-style-type: none"> • Hispanic: 2% • White: 2% • Black: 94% • Asian/Pacific Islander: 0% • Am. Indian/Alaska Native: 2% <p>Percent Free/Reduced-Price Lunches: 90%</p> <p>Teacher Characteristics Number of FTE Teachers: 16 Race-Ethnic Breakdown of Teachers:</p> <ul style="list-style-type: none"> • Black: 50% • White: 44% • Hispanic: 0% • Asian/Pacific Islander: 0% <p>Am. Indian/Alaska Native: 6% 5+ Years of Teaching: 56% Newly Hired: 0%</p> <p>School and Neighborhood Characteristics</p> <ul style="list-style-type: none"> • Building about 50 years old • Neighborhood largely industrial buildings and apartments, which house many recovering alcoholics and drug users. Few houses. High student mobility 	<p><i>School Theme:</i> None Grade Levels: PK-5 Student Characteristics Number of Students: 244 Race-Ethnic Breakdown of Students:</p> <ul style="list-style-type: none"> • Hispanic: 1% • White: 2% • Black: 97% • Asian/Pacific Islander: 0% • Am. Indian/Alaska Native: <1% <p>Percent Free/Reduced-Price Lunches: 94%</p> <p>Teacher Characteristics Number of FTE Teachers: 17 Race-Ethnic Breakdown of Teachers:</p> <ul style="list-style-type: none"> • Black: 38% • White: 62% • Hispanic: 0% • Asian/Pacific Islander: 0% <p>Am. Indian/Alaska Native: 0% 5+ Years of Teaching: 38% Newly Hired: 14%</p> <p>School and Neighborhood Characteristics</p> <ul style="list-style-type: none"> • Building about 50 years old, poor condition in 2000, but refurbished by a volunteer project in 2001 • Low-income residential neighborhood including small houses and a large apartment complex; many children being raised by grandparents

MSAP school No. 1 is located in a low-income residential neighborhood of small brick houses. Most of the residents are black, and many are elderly. The principal reported that most of the students are the second or third generation in their family to attend the school, and that many of them live with extended relatives such as grandmothers and aunts. Although during the day the neighborhood appears quiet and safe for children, at night it is one of city’s highest crime areas; all the houses have bars on the windows, and front yards are littered with broken-down cars. There are few businesses in the area, and some of the buildings in the neighborhood are boarded up.

Although the school building is old (built in the late 1920s), the interior has been well maintained and for the most part, the classrooms are in good shape. In an effort to increase the capacity of the school, classes are unusually large, but the teacher-to-student ratio is decreased by staffing each room with two teachers and two aides. The principal and virtually all of the faculty worked in the school prior to the introduction of the magnet program. In 1999-2000, the school’s enrollment was just over 360, with 88 percent minority (86 percent of the students were black) and 89 percent eligible for free or reduced-price meals. (Prior to the grant, the total population was smaller and the percentage of minority students higher—in 1997-1998 the school had 304 students of whom 99 percent were black, 94 percent eligible for free lunches.)

MSAP school No. 2 is also located in a low-income residential neighborhood. The school consists of a main building, constructed during the 1920s, and some portable classrooms. Thanks to a recent renovation, the main building has new carpets and lighting fixtures, and the interior is newly painted. Teachers and administrators reported conditions at the school have improved markedly over what they were a few years ago. Prior to becoming a magnet, the school was known as the place where all the “bad kids” went, and its students were among the lowest achieving in the district. Teachers, parents, and students did not take pride in the school. One teacher recalled that a persistent stench in the school’s main building demonstrated how little concern there was for the conditions that children endured. The teacher recalled that many of her colleagues in the school district thought she was “insane” for taking a position at the school, but she believed that the new principal (who arrived at the school in 1998) and the planned magnet program would bring significant improvements. Her optimism was borne out. The school is now a happy place, she says, and it is common to see smiling faces in the hallways. Moreover, she is proud to work there. The principal commented that the magnet program’s effects extend the community as a whole. People in the community have more pride because the school has become so much better than it was in the past. The local university population has also taken an increased interest in what is going on at the school. In 1999-2000, the school enrolled about 300 students in grades K-5 of whom 98 percent were black, with the remaining 2 percent divided equally between white students and Native American students.

MSAP school No. 3 is located in a quiet residential street and has an adjoining park; however, the main street leading to the neighborhood includes boarded-up businesses and stores that are in poor repair. The school’s neighborhood consists of small brick houses that are reasonably well maintained and attractive. The principal says that the neighborhood is not a high crime area and includes many single parents, elderly people, and children who live with their grandparents. Although the school is far from new, it is well maintained and clean. The principal reports that parents are supportive and community involvement has been good: on a districtwide workday, the school received a \$500 prize for having the most volunteers in the district. The teachers and principal worked in the school before it became a magnet, and both the principal and the faculty participated in extensive training in order to prepare for the Montessori instruction that is the magnet’s primary feature. In 1999-2000, the school enrolled 354 children, of whom 95 percent were black and 81 percent were eligible for free or reduced-price meals.

MSAP school No. 4 is in a quiet neighborhood with attractive but unpretentious homes that belie the problems that many of their residents face. Many households are in “a survival mode,” according to the principal, who notes that a number of students live with their grandparents because their parents have drug problems or are in prison. She estimates that 25 percent of the school’s students know someone who is in prison; one teacher reported that 7 of her 20 students have a parent in prison. Students sometimes have problems focusing on school; a teacher estimated that one or two students in each class were drug babies. The school has about 300 students, more than 99 percent of whom are black. The principal says that she has ensured that teachers were involved in the magnet program from the pre-proposal stage, and they assisted in the writing of the proposal and developed thematic instructional units that built on existing units.

The area surrounding **Comparison school No. 1** differs from that of the four MSAP magnet schools in that it has many more industrial buildings and fewer houses. We were told that many of the students live in the nearby apartment buildings with high turnover in tenants, which leads to a high mobility rate in the school's enrollment. During our 2000 visit, the principal expressed the belief that as a consequence of the district's school choice program, Comparison school No. 1 receives the lowest of the low-performing students (while more able students have transferred to magnet or specialty schools). The school receives the majority of its neighborhood students (approximately 70 percent) from two major housing projects in the area, one of which is a government run transition facility where families or single parents live to help them make the transition back into the mainstream. Many of these students have severe emotional and psychological problems that impede their ability to sit in a classroom and learn. The difficulties that the students bring to school place a huge burden on teachers and the school as a whole. In 2001, we observed that the principal seemed to be dealing with this situation and trying to make changes to help teachers be most effective in the school. For instance, in response to difficulties that some teachers were having in their classrooms, she reassigned them to a different grade level better suited to their teaching styles.

The residential neighborhood around **Comparison school No. 2** is similar to those in which the four magnet schools are located. During our first visit, the school building seemed neglected, inside and out; resources and materials seemed scant; and the atmosphere was depressing. Staff complained about a lack of parent involvement. Over the ensuing year, however, the school benefited from a number of volunteer efforts. For instance, 60 members of a local organization spent one spring weekend repainting, planting flowers, replacing window blinds, repairing playground equipment and cleaning up the school and grounds. Corporations that adopted the school donated sizable quantities of paper and pencils to the school, provided every student with a backpack full of supplies and a Christmas present, and sponsored a talent show at the school that helped to finance a new marquee for the school. The school also has tutors from two nearby congregations. In 1999-2000, the school enrolled slightly fewer than 285 students, 95 percent of whom are black. As at MSAP school No. 4, the students bring serious problems to school. A large apartment complex feeds in to the school, and most of its residents are on some type of welfare. Many children are being raised by grandparents or even great grandparents because their parents are in prison or are using drugs. Parents of other children often have jobs that pay only minimum wages; consequently some work two jobs so that they do not have much time to spend with their children. The principal stated that students with severe problems are becoming more and more numerous. "Children are very angry," due to their living conditions, she said, "even in kindergarten, and they fight back verbally and physically." Many of them are on medication. The last three or four years have been much worse, she went on; "We need a training program to deal with these students. Teachers who were trained 10 or 20 years ago do not know how to deal with these students."

Program, Themes, Goals

During our visits to District E in spring 2000 and spring 2001, we witnessed the four case study elementary schools using their MSAP funding to support the development and implementation new thematic curricula and other programmatic innovations. During this period, the two comparison schools implemented a few of the innovations that were on the district's list of recommended

research-based programs. In this section, we address the following aspects of the implementation of the magnet school programs:

- The magnet themes.
- Links to parents and the community.
- Professional development.
- Building the professional community.

The magnet themes

MSAP school No. 1 operates a visual and performing arts program. The school's theme is readily apparent to visitors to the school: the walls are covered with evidence of the students' accomplishments, including framed examples of students' artwork and photographs of student performances. Four classrooms near the main entrance to the school are dedicated to the visual and performing arts program. The music room is equipped with three pianos, a set of drums, sheet music podiums, and a closet full of other musical instruments. The walls of the fine arts room are adorned with student work and posters showing artworks by Picasso, Degas, Monet, and many other artists, and storage closets are filled with art materials. The drama room is actually the backstage of the auditorium, but it has been closed off with curtains and has a small bleacher for students to sit on. Around the room are theatre books for musicals such as *Annie*, *Heidi*, and many others, including one based on *The Wizard of Oz*. Finally, the dance room is equipped with a special dance floor, ballet bars, and mirrors, and decorated with images of a variety of dance genres including ballet, jazz, and contemporary.

The goals of the MSAP program include providing every child with an optimal learning environment and supplying the materials and resources necessary for all learning styles; engaging parents in active roles to support their children's educational experience; establishing partnerships with businesses, art organizations, institutions of higher education, and community groups; and achieving a unified, accountable program in which every child will experience success through arts integration with high academics.

In addition to the arts integration program, the school has adopted several other programs recognized by the district as research-based strategies for improving student achievement including a Core Knowledge curriculum, Great Expectations (which focuses on student comportment and respect), a CSRD Effective Schools program, and HOSTS (Help One Student to Succeed), which involves community members in mentoring and tutoring students during the school day. The school also engages in the Malcolm Baldrige data collection and planning processes and a Title I schoolwide program.

To help implement the magnet theme, the school added four resource teachers: one each for visual arts, music, drama, and dance. While most of the regular faculty were already working at the school before the magnet program was developed, all of the resource teachers are new to the school. Each is responsible for teaching classes in their specialty and working with teachers to develop thematic units that tie in aspects of visual and performing arts into core curriculum. Other responsibilities include developing partnerships with outside entities in the field of visual and performing arts in order to develop opportunities for children outside of school to experience the

arts (i.e., concerts, museums, theatre performance) and to bring in professionals in the field to help teachers develop ways of incorporating the arts into their classroom instruction.

The arts theme is carried out both through special classes and productions, as well through integration of arts into academic content instruction throughout the school day. Each week students attend a special class of at least 40 minutes in each of the four arts areas (a total of 160 minutes of instruction).

The school's arts integration curriculum guide stresses the importance of collaboration between art specialists and classroom teachers so that the strengths of both can contribute to maximum learning opportunities for students. For the most part, the resource teachers develop their own curriculum units, but they also ask classroom teachers to inform them about their lesson plans so that they can create supplemental lessons that integrate the academic curriculum with arts themes. The resource teachers report that some teachers are better about doing this than others, but they hope that as thematic units are developed, the arts will increasingly be integrated into classroom instruction rather than treated as a separate subject.

The goal of the magnet program at **MSAP school No. 2**, which focuses on mass media with an emphasis on writing, is not only to improve students' writing ability across all curriculum areas, but also their command of the English language (e.g., proper sentence construction, and use of

Baldrige educational quality framework. *The Mass Media and Writing magnet makes extensive use of the Baldrige educational quality framework and posts student performance data on the walls of a room set aside for parents.*

grammar). The mass-media theme continues through grades 6-12 at the MSAP-supported middle and high schools, and aims to have prepared students for careers in this field by the time they finish high school. Another goal is to encourage students to become more creative. Students' writing is assessed through portfolios and other performance measures, as well as

through district-mandated standardized testing. Other theme-related reforms or research-based programs adopted by MSAP school No. 2 include Write Track (a technology-based program that instructs students in the writing process and provides teachers with strategies to incorporate writing across the curriculum.), participation in the state university's Writing Project, and the Great Expectations program. The school operates a Title I schoolwide program and is implementing a CSRD Effective Schools model. This school has also used the Baldrige program extensively. One of its innovations is a Parent Room that features extensive displays of student data (minus names) showing how the school's students are performing academically in each subject.

At MSAP school No. 2, grant funds have been used to support professional development of the staff and to hire two resource teachers for writing and technology. MSAP funding has enabled the school to purchase and implement the use of a KID TRACK, a resource center where students use up-to-date technology including computers, printers, scanners, televisions, and VCRs. The KID TRACK is broken into four learning areas. In one, devoted to teacher-led instruction, students sit around an open area and the instructor uses a computer connected to a large screen to demonstrate lessons. Then students move to one of the other three areas to complete their writing assignments. In these centers, students work at individual computers and other equipment (such as printers and

scanners) connected to a local network. Working in these centers familiarizes students with applications like Microsoft Word and Internet search engines.

The changes brought by the MSAP grant were most evident in **MSAP school No. 3**, which has implemented a Montessori program in all grades. The school also operates a Title I schoolwide program, a HOSTS (community mentoring) program, and Great Expectations, whose focus on mutual respect is consonant with the Montessori emphasis on student responsibility. In addition to extensive training required to implement the model, the MSAP grant was used to purchase the plethora of materials needed for a Montessori program and to hire a parent liaison and an experienced Montessori resource teacher.

Montessori schools feature special materials that are designed for students to use individually or in small groups. The Montessori model has three key elements:²⁸

- Student activity—For three or four hours of the school day, students engage in individual or small group activities that they choose (with choices guided by the teacher). For the remainder of the school day, they receive instruction, primarily as individuals or in small groups. Whole group instruction may be given for no more than an hour a day.
- An attitude of cooperation rather than competition—Students can ask other students for help; students have access to answers to problems. (Nonetheless, the school complies with individual work requirements of mandated achievement tests).
- Individual responsibility—Students are responsible for maintaining materials in the classroom and help establish class rules.

Montessori training. Staff at the Montessori school participated in over 300 hours of training in order to implement their program according to Montessori specifications. They developed year-long curriculum plans for each grade level that are aligned with state content standards.

For MSAP school No. 3, the change from a traditionally organized elementary school (where all the desks were arranged in straight rows) to a Montessori school required a strong commitment from the staff. Before the program was implemented, the faculty were given the option of staying or going

elsewhere in the district; only three teachers left. Those who stayed, including the principal, attended 320 hours of Montessori during an eight-week summer course, as well as follow-up training during the ensuing months.

The Montessori resource teacher's responsibilities include ordering equipment, assisting trainers, and helping the other teachers, either by making or locating materials in her resource office or by assisting in the classroom, as requested. The Montessori resource teacher explained that faculty developed work plans for each grade. Every instructional activity has been linked to state objectives and state and district benchmarks. Each student has a weekly work plan, and there is an overall structure to the year. For example, the work plan for grade 5 requires the student to list the

²⁸ Chattin-McNichols, John. 1992. *Montessori Programs in Public Schools*. ERIC Digest, ED 348165. Available at: http://www.ed.gov/databases/ERIC_Digest/ed348165.html

activities he or she completes in language (phonics, reading, word study, grammar, writing, and class meeting); math (operations, facts, word problems, counting, fractions, geometry, flash cards, measurement), and cultural (history, zoology and botany, geography, music and art) each day. Individual records and portfolios are maintained for each child. The work plans are not specified by the Montessori program, but are a way of accommodating the program to district and school needs. The teacher also develops a lesson plan each week that includes the objectives of the activities, guided practice, independent practice, the relevant benchmark and skill, and the Montessori objective.

In accordance with its mass media and broadcasting theme, the magnet program at **MSAP school No. 4** emphasizes the writing and production of television and radio programs; training in public speaking; the operation and maintenance of communication equipment; and media literacy. The school's efforts are supported by an advisory committee comprised of representatives from local television and radio stations. The school also operates Great Expectations and HOSTS programs. It used its grant funds to provide professional development for its teachers, purchase broadcast equipment such as camcorders and other materials (boxed sets of a dictionary, thesaurus, and *Essential Writer's Companion* were ubiquitous); and to hire two resource teachers (one for speech and one for media). In addition, teachers used a media literacy curriculum from Babson College in Massachusetts as the basis for a series of grade-level-specific thematic units featuring television, radio, and speech activities.

The media resource teacher described her job as helping teachers locate materials (e.g., Web sites for units on rainforests), creating a Web page, and locating extra resources. She also works in the school's studio, helping students (and teachers) learn to use the media equipment that is part of the school's magnet program. Some of the media activities that had been carried out near the end of the program's second year included class trips (for every grade) to the nearby zoo to film various animals; a set of videotaped interviews at the school with two board of education members; and a set of interviews (by fourth-graders) at a state leadership conference that included district attorneys, a judge, and the governor's wife, with camera work and interviews by students. (AIR visitors saw these interviews. Both interviewer and interviewee took them seriously and carried them out with aplomb.) Fifth-graders have also visited a local television station, and staff from the station have become involved in the school. A video that the second-grade wrote and produced won a national prize.

Grade specific thematic assignments have been developed. First- and second-graders write a story with sound effects, third-graders conduct interviews, fourth-graders write 15-minute radio shows, and all fifth-graders write 20-minute radio shows. The radio shows, which are broadcast during lunchtime, include commercials with sound effects. (Students learned how difficult it was to have the program take exactly the right number of minutes. All students in grades 3-5 learn to use the broadcast equipment. Students also operate a mail system (Wee Deliver) and write letters to one another. The upper grade students sort, alphabetize, and deliver the letters each Friday.

Although they do not have the resources that the MSAP magnet schools do, the two comparison schools have also adopted some (though fewer) research-based improvements. Both schools use the Great Expectations program. **Comparison school No. 1** has a community tutoring program to

support its students, and **comparison school No. 2**, like the Visual and Performing Arts magnet, has adopted the Core Knowledge curriculum.

Links to parents and the community: parent liaison resource teacher

The magnet schools, like many other schools in District E, are involved in a number of efforts to build parent and community support for individual students and more generally for the schools. Three of the magnets operate HOSTS programs, and one of the comparison schools has a community tutoring program. One of the responsibilities of the publicity and marketing firm the district hired to promote the MSAP schools was to help them develop corporate partnerships.

Each of the magnet schools has hired a resource teacher to maintain communications between the school and parents. One of these teachers described herself as a “jack of all trades” whose tasks include taking care of disciplinary problems, developing and sending out fliers to parents about upcoming events, overseeing transportation, scheduling and conducting focus groups of community leaders, giving parent and community presentations and workshops, tutoring and monitoring the progress of nonresident students who were falling behind in math and reading, and serving as nurse liaison.

A particular challenge for the magnet schools is to assure parents of the nonresident students from across town that their children are safe. This is a special concern in view of the unreliability

***Parent liaison.** To increase the parents’ sense of security, one of the resource teacher’s primary responsibilities is to act as a parent liaison and “hand-holder” for nonresident students. The liaison has a cell phone to allow immediate access to and from parents. Dealing with transportation issues consumes a significant amount of the liaison’s time.*

of the district’s bus fleet. To increase the parents’ sense of security, one of the resource teacher’s primary responsibilities is to act as a parent liaison and “hand-holder” for nonresident students. The liaison has a cell phone to allow immediate access to and from parents. Dealing with

transportation issues consumes a significant amount of the liaisons’ time. They meet incoming buses, account for all the students who should be on them, contact parents about any problems that arise, and dismiss the filled buses at the end of the day.

Professional development

A major use of MSAP funds in each of the schools we visited was the funding of many hours of professional development for its teachers. Each school selected training related to its magnet theme, aligning curriculum with state standards, and implementing research-based interventions such as Core Knowledge and Great Expectations. Faculty in the comparison schools also participated in some staff development related to state standards and the interventions they were adopting (both of the schools operated schoolwide Title I programs and one had a CSRD grant), but on a more limited basis due to lack of funds.

The extensive training undertaken by the teaching staff and principal of the Montessori school has been described in a previous section. Teachers from the Visual and Performing Arts magnet received professional development in a number of areas related to this theme, including work with

an artist from the Kennedy Center, as well as intensive summer training focused on integrating arts and academics, vertical curriculum development, and developing hands-on activities and thematic units. Additional professional development, funded by MSAP and other sources, included training in the programs of Great Expectations, Core Knowledge, the Baldrige education quality framework, and a CSRD Effective Schools program model that had been adopted by the school.

To help them implement their mass media and writing program, all of the teachers in MSAP school No. 2 participated in the state university's Writing Project. Conducted during a week-long summer institute and additional follow-up sessions during the school year, the Writing Project concentrates on developing teachers' writing skills. Teachers also have received training on the development of thematic units, general computer literacy, and the incorporation of technology into the classroom. In particular, they learned about using the school's Write Track and Kid Track systems. Finally they are receiving training in the Effective Schools model from a coach who comes to the school once a month, and at a nearby University once a quarter. The Mass Media and Broadcasting school invested in training related to mass media communications, computer skills, and writing.

Building the professional community

In all of the schools we visited, implementation of the magnet programs has provided human and material resources that enabled teachers to work together to improve their schools' programs. For instance, a resource teacher at the Visual and Performing Arts magnet commented in 2001 that formal planning periods with classroom teachers and the four arts resource teachers had been a tremendous help in organizing lessons for students. When asked if the program has meant more work for the teachers, she said that it had, but that it had also improved their situation: "Teachers share a lot more now, which has taken away from the isolation of teaching. We implemented team-teaching in order to accept nonresident students but it has also benefited the regular teachers." A team teacher was asked if teaching at a magnet school meant more work for her. She responded that team-teaching, collaborative planning with the resource teachers, and use of the Core Knowledge curriculum actually diminished the demands on her in the long run.

Community-building has been particularly important for schools such as the Mass Media and Writing magnet, which suffered from low morale and disorganization before the advent of the MSAP grant and the arrival of a new principal. This school has made extensive use of the Baldrige framework in planning improvements and monitoring progress. The principal contends that collecting and analyzing data on a continual basis motivates teachers and students to strive to do better. The principal stresses that she expects all teachers (and particularly newly hired ones) to know exactly how their children are doing academically at all times. She has designated one room in the school as the "Baldrige Room" where graphs and charts display data on students' test performances by subject and grade-level, as well as other information such as the number of professional development hours in which teachers have participated and the results of parent and teacher surveys.

As at the Visual and Performing Arts magnet, teachers in the Mass Media and Writing magnet attend weekly grade-level planning sessions during which they try to align the curriculum to state objectives, design projects and lesson plans, and share effective strategies. This helps get them "on

the same page” and allows them to teach at different paces to accommodate student needs. As part of the Effective Schools model, some articulation sessions have also been held across grade levels. One of the school’s new teachers suggested that these efforts have been productive: she reported feeling more focused now because the entire school is on the same page regarding the magnet theme.

At the Mass Media and Broadcasting magnet at MSAP school No. 4, the principal also expressed her belief that the magnet grant has enabled the school to pull together its multiple programs (Core Knowledge, Great Expectations and the Mass Media theme), and has helped teachers work together, particularly in developing thematic units. “The climate has changed,” she said, and cited more motivation on the part of students and more interest on the part of parents.

School Instruction and Activities

Innovative Instruction

The Visual and Performing Arts program at **MSAP school No. 1** includes special arts instruction for all students during the school day, arts integrated into instruction in the academic content areas, and musical and dramatic productions that are presented to students during school hours as well as to a wider audience at night. The design and implementation of the program went on throughout the grant period. School staff felt that by the third year of the grant, the lessons learned and the relationships and routines established during the start-up period had resulted in a strong program. In particular, important lessons had been learned about building a schedule to accommodate all the special activities in the school and limiting the number of big productions that the resource teachers were asked to mount each year. In addition, a growing number of teachers who had initially been reluctant to bring arts into their instruction were collaborating with resource teachers and also trying out new activities on their own. The magnet theme was clearly evident to us during both of our visits to the school.

Special arts classes gave students access to experiences and materials that many lacked at home. As students worked at painting the sets for one of the school’s musical productions, the arts teacher discussed his view that arts should not be seen as an “extra,” but rather as a regular part of the curriculum. Arts should be introduced in the early grades so that children develop necessary skills and build confidence in their creative abilities. Such experiences are particularly important for students who have not been encouraged to draw at home because crayons and paper are not available. He added, “It’s sad to say that but that is the reality, these kids are a lot further behind than other kids that have more resources at home, which is why I am here. I believe this program helps even out the playing field for students.” In a music class, the district’s roving music teacher conducted a jazz band rehearsal. As students practiced four-quarter notes (while following the teacher’s instructions to keep their feet on the floor and hold their instruments properly), the teacher moved around the room to provide individual guidance. Students impressed us with their facility in reading sheet music; students’ musical proficiency varied, but overall the class did well. For homework, the music teacher asked students to practice two pieces at home as much as possible before the following week’s rehearsal. When one student said that he was not allowed to practice at home, the classroom teacher told him he could practice in her classroom after school or during lunch.

The school's productions gave many students a chance to perform and built the community's pride in its students and the school. For instance, during our first visit, we attended the school's production of a musical based on *The Wizard of Oz*. The cast, which consisted of 60 students in grades pre-kindergarten through grade 5, was engaging and well-prepared, singing and acting with confidence. Costumes, lights, and props were handled capably, with adult help. The near-capacity crowds of parents, friends, and students greeted the performance with great applause, and several parents were seen exchanging looks of proud astonishment at what their children were doing on stage. The performance was clearly a great success.

Although many of the regular classrooms we observed were engaged in conventional instructional activities, we saw several examples of arts being incorporated into instruction. For example, in a kindergarten class, the teacher used songs to help students learn the alphabet as they worked with sets of plastic letters on tables. They also sang songs to practice their numbers, days of the week, and months of the year. The teacher then transitioned to a language arts lesson, asking the students to name their letter of the week and tell what sound it made. A second-grade teacher showed us an art project that she had developed in collaboration with the art resource teacher for a social studies unit on China: a three-dimensional dragon designed by her students lined the hallway outside the classroom door. In another second-grade class, ballet was used to enrich a science lesson on the water cycle. In preparation for the activity, the school's dance teacher engaged the students in a discussion of the concepts and vocabulary of the water cycle (condensation, precipitation, evaporation). Then she asked them develop ballet steps to act out the water cycle. Students selected scarves from the teacher's collection of props and began by lying on the floor, pretending to be raindrops stuck to the floor. Then, to recorded music, they moved through the water cycle, dancing around in a circle and then dropping down to the floor again. In another class, the resource and classroom teachers had developed a history unit based on the development of cubism.

The art resource teacher commented in spring 2001 that the arts program had "come together a lot" over the previous year. With an added year of experience, grade-level planning meetings between the classroom teachers and arts resource teachers had become efficient and useful. In addition, the installation of Internet access has been a tremendous help to the arts program because resources on the Web can now be accessed to assist in planning lessons and to help teach students to use the Internet for research projects.

In MSAP school No. 3, Montessori program was abundantly evident. Montessori classrooms differ from those in traditional schools in that mats define work areas, and centers include carefully organized materials on shelves, and in sealed plastic bags and trays. Most rooms have at least two computers, a TV, and VCR. Visual stimuli, such as charts, laminated posters, pictures, student work, number charts, colors and shapes, are abundant. The central instructional principles of student activity, cooperation, and responsibility are pervasive in most classrooms. Students seem to be everywhere: at tables, computers, and on the floor; some working alone, others working together in pairs or small groups; moving independently between tasks as they complete one and choose another. The teacher and an aide are in the midst of the activity, assisting students in an atmosphere that is obviously student-centered rather than teacher-centered.

In a lower grade classroom we visited (although grade references are not used in the school) students were busily working with a variety of Montessori materials that were attractive, colorful, and durable. While some students sorted small objects and picture cards, others worked with a set of colored letters (blue vowels and red consonants) as they learned to build words with short vowels. Another child worked on a strip of words and placing a triangle over the nouns while two others played the "Oral Grammar Game" nearby. At the time of the site visits (near the end of the school year), students knew the routines and were careful about returning materials to their proper place when finished, so that others could use them.

In a joint second and third grade class of 16 students, we found several activities simultaneously underway: one student was putting together a United States map puzzle; two were learning a mathematics lesson using manipulatives; two were reading with an instructional aide; two were working independently on reading lessons from an SRA kit; four were practicing handwriting with the teacher; two were matching descriptions of flower parts to pictures; and two were completing a geography lesson. The scene changed constantly as students finished one activity and began another. During this time the teacher and aide acted as facilitators, supervisors, assistants, and resources; both had an easy manner with the students. Students worked together well and were respectful and organized. Later the teacher assembled the students on a rug ("Sit on your back pockets," she says) and asked them to "tell me something you learned this morning. What was something real (or make believe) that happened?" Students contributed enthusiastically to the discussion.

In an upper grade classroom, an equally wide range of activities was underway. The topics to be covered during the day were written on the board to guide students activities: SRA (individualized reading activities), animal research, state research, current event, three-part cards, division boards, computers, and science experiment. Simultaneously, one to three students were engaged in each of the following: using classroom computers to complete mathematics drills or a lesson on homonyms, making measurements using string and a balloon, completing a geography lesson, demonstrating division to a classroom aide using small candies; reading independently, conducting research on fish, and searching sections of a newspaper to find current events articles on various topics. The teacher circulated around the room, assisting as needed; however, most students worked without assistance.

Magnet School No. 4's emphasis on public speaking was quite evident when AIR visited in spring 2000 and 2001. As part of the Great Expectations program, each classroom includes a student greeter, who approaches all visitors, looks them in the eyes, and clearly speaks a welcome and an inquiry as to what the student can do for the visitor. In addition, in many of the classes observed in MSAP school No. 4, students were required to rise and stand behind their chairs when asking or answering a question and to speak in complete sentences. For the few who forgot, a quick reminder from the teacher (or classmates) brought the desired behavior.

Media-related activities were evident in nearly every classroom we visited. For example, one first-grade class was working in the computer lab so students could use the *Golden Encyclopedia* to locate and read two articles for oral reports to be presented later in the week. Their teacher reported that she also has her students audiotape themselves so they can play back the tapes and listen to themselves. She believes this has made them better oral readers and speakers. Another first-grade

class used a television camera to tape each child presenting a weather forecast for use on the school's morning news program. Students in the third-grade used camcorders to present reports on various animals they had seen on a field trip to a nearby zoo and researched on a computer. Finally, a homework assignment for a fifth-grade media literacy unit was to watch an hour of TV at home and "deconstruct" the commercials, noting the length of each, its intended audience, and purpose. The journalist's five W's and H (who, what, when, where, why, and how) were emphasized, and the teacher commented, "The students write lots of articles."

During our initial visit in 2000, some uses of media equipment had seemed excessive: taping to practice for taping; filming role-plays for the sake of using the equipment. However, in 2001, the

Familiarity with technology. Video and audio recording equipment is used extensively in the Mass Media and Broadcasting magnet to build students' speaking and writing skills. As teachers became more familiar with the technology, they used it more purposefully in their instruction.

media theme seemed to have become more purposefully integrated into instruction and technology less an end in itself. Media projects were still being carried out, with radio broadcasts four days a week, field trips that included filming and interviewing, and within-school projects that used media

but for clearer purposes. The emphasis on speaking and writing was still pervasive. For instance, in a third-grade classroom, the media theme was evident in classroom assignments, but broadcasting equipment was not called into play. The activities for the day posted at the front of the room included the following instructions: "media assignment—pretend you are a newspaper reporter, covering a story in a fantasy land. Write a story using as many verbs and adjectives as possible. Draw a picture for your story.... Check punctuation and spelling; use figurative speech."

The comparison schools shared some of the programmatic features of the magnet schools, including their use of the Baldrige school improvement methods and their concentration on district's basic language arts and mathematics curriculum. However, in other ways they differed. Although classrooms in the comparison schools were adequately equipped with conventional materials, they lacked the expensive and unusual resources (e.g., television studio, Montessori materials) that made the magnet school learning environment distinctive and stimulating. While both magnet and comparison schools had computers, students in the comparison schools appeared to use them primarily for practice in reading and mathematics, while magnet students also used them to access the vast world of information available through the Internet. MSAP funding also enabled the magnet school teachers to obtain additional training and to spent time planning and sharing ideas with one another.

Summary

In 1998, District E began its first federally funded magnet schools project. The project's goals were ambitious: to implement new thematic curricula that would convince nonminority parents to send their children across town to attend seven schools located in the city's most impoverished racially isolated neighborhoods. Despite delays in initiating the project, by the end of the grant, the magnet schools had made notable progress toward this goal. Programs were designed and equipment purchased. Teachers participated in hundreds of hours of professional development, developed collaborative relationships, and began to incorporate new resources and methods into

their instruction. All of the schools made progress toward meeting their objective to reduce minority group isolation. Schools with the most popular themes simultaneously reduced the percentage of minority students enrolled and experienced increases in the numbers of nonminority *and* minority students enrolled. Only one school met any of the achievement goals that had been set for it, although several made progress on some of them. However, due to the short time span for which achievement data were available, this result is difficult to interpret. Schools' increased use of student achievement data to identify areas of weakness and modify instruction may help them to strengthen student performance in the future.

Benefits

The MSAP grant has provided an infusion of materials and opportunities into District E schools that have many problems and an otherwise limited resource base. These have enriched the curriculum to which all students in the schools have access and, in some cases, have attracted a significant number of nonresident students.

In addition to providing a significant amount of training for magnet teachers (for instance, several Montessori teachers had earned masters' degrees by the end of the project), the grant has also supported opportunities for strengthening professional collaboration within schools and for focusing the efforts of the school on common goals. Principals reported that the magnet programs had energized their faculties and fostered hope in difficult circumstances. One principal commented that the magnet program "has been like a shot in the arm that we needed. It has allowed us to do new and different things that have brought our school alive."

Although changes in achievement have not been dramatic overall, school staff have seen some evidence of improvement. For instance, the Title I-reading specialist at the Mass Media and Broadcasting magnet commented: "We're doing so much more writing now, and it improves students' reading." The principal at the Visual and Performing Arts school saw a steady increase in the number of students scoring in higher percentile rankings on the district's norm-referenced test and attributed it to the school's use of methods that addressed multiple learning modes. Furthermore, she said, students were probably learning more because they enjoyed being at school, and attendance had increased when the magnet program was implemented.

Finally, some innovations adopted by the magnet schools have attracted public attention and increased the demand for similar innovations in other schools. In particular, the Visual and Performing Arts program has increased public interest in the use of arts to support academic instruction, and there is increased demand for arts instruction in other district schools. The Montessori school was one of the first schools to introduce school uniforms, which have now been adopted by many schools in the district.

Challenges

The project has been hampered by limited district funds. As noted above, district voters have failed to pass several recent bond issues, and funds are limited. During a telephone interview in January 2000, the project director commented that the infrastructure of schools has limited the utilization of technology planned for the MSAP schools. For instance, many of the schools lacked

necessary space and wiring capability to support advanced technology. The district has done what it can to implement necessary infrastructure upgrades to buildings and has provided additional portables to increase capacity. Board policy does not provide security systems for portables, where computers are needed, however, so as a temporary measure, computers have been put on carts that can be moved into secured areas when schools are closed. This creative solution seems to be working satisfactorily.

Transportation problems, another aspect of the district's limited funds, have been a major challenge for the MSAP schools in attracting and retaining transfer students from across town. Some parents who were otherwise very pleased with the magnet programs in which their children were enrolled withdrew their children in frustration over the unreliability of the district's bus system. The MSAP project addressed this problem as best they could through the use of parent liaisons at all of the elementary schools. Some parents found alternative means to get their children to school, and district efforts to improve the transportation system reduced the problems somewhat in the last year of the grant.

Another challenge that may be related to the magnet schools' early stage of development is the faculty's heavy reliance on MSAP-supported specialists in some of the schools. For instance, supplementary staff taught the arts classes and took much of the initiative in proposing and designing arts activities to complement regular classroom instructions at the arts magnet. In the mass media magnets, they helped teachers to identify and obtain instructional resources. Given District E's the straightened circumstances, it is unclear how long the magnet schools will be able to retain these staff without external funding and how much of their programs would survive if the specialists were to leave.

Lessons Learned

The most salient lesson of the District E experience is the substantial amount of start-up time needed to establish a new program. During the early days of the grant, planning was delayed by the need to first identify and hire a project director, purchase equipment, and upgrade school infrastructure needed to install it. Beyond acquiring equipment, time was needed for teachers to learn new routines and practices, and put them into place. An entire school year had elapsed before a recruitment plan was implemented and initial curriculum details worked out. It was only in the third year of the grant that teachers in the case study schools commented that "Things seem to be coming together better" and "We're doing better this year." One resource teacher explained that during the previous year, both he and the other teachers in his school had been trying to do too much at once, but later realized that it takes time to change things. "We aren't worried now if change doesn't happen overnight." This insight into implementation time has important implications for the degree of change in student achievement that might reasonably be expected to occur during a three-year grant period, especially in schools that had no magnet program in place at the beginning of the grant period.

Plans for the Future

Although District E planned to apply for another MSAP grant to further develop its magnet program, it did not receive an award in 2001. Nonetheless, all of the magnets continued to operate

the year after the grant. They received some support from the district, and some drew on other external sources (e.g., CSRD and REA grants) to continue some aspects of their programs. However, limited district funding led to the loss of some resource teachers, increases in class size, and reduction in the number of seats in some of the schools. The number of specialty, enterprise, and charter schools continued to rise.

Case Study, District F

District Context

Location and Size

District F is located in the Southeast in a relatively small urban center of approximately 200,000 persons within a county that is largely supported by educational institutions, agriculture, military operations, government (federal, state, and local), retail trade, and manufacturing. State-supported education funds are being reduced by about 6 percent, a reduction that will result in a loss of approximately \$7 million per year for the district. According to the project director, the district already has the lowest per pupil spending in the nation for its size, and the expected reduction in funds has led to heightened community concern for the quality of all public schools, including magnet schools.

The school district operates 48 schools—32 elementary schools, nine junior high schools, one combined junior and senior high school (grades 7-12), one middle school, and five senior high schools. There are also three special education centers, one vocational center, and two alternative schools. Junior high schools are being converted to middle schools, which will create more space in elementary schools. Middle schools will eventually be implemented throughout the entire district.

Student Composition

The public school system in District F serves approximately 35,000 students. It is estimated that more than 8,000 additional students, representing about 19 percent of elementary and secondary students living in the district, attend one of 21 private and parochial schools. In the public schools, 72 percent of students are minority (the majority being black) and 28 percent are white, while estimates indicate that the students in private and parochial schools are predominantly white.

Magnet School History

District F has had a history of state- and district-funded magnet schools, and there are currently a total of 11 magnet schools in the district. There is a high demand for more magnet schools, and the district thinks of magnet schools as a necessity in order to raise the level of education in the district. The district received funding in the 1995-1998 MSAP funding cycle for programs in two elementary schools, one middle school and one high school. The magnet themes were arts, math and science, and communications. Prior to the 1998-2001 MSAP grant, the district surveyed 2,000 parents and 2,000 students in order to identify themes for the three additional magnets the district planned to develop and implement. The most often requested themes were: 1) technology, 2) vocational programs, 3) math and science, 4) arts, and 5) communications.

The 1998-2001 MSAP grant supports seven schools in this district: three elementary schools, one middle school, one junior high school, and two senior high schools. Four of these schools are carried over from the previous grant and the themes were continued, although additional themes were added and modifications to their curriculum were made. Three of the schools were not operational in the first year of the grant, which was due to a number of factors, including a change in the MSAP project director and the district superintendent (see *Project Characteristics* below).

Because the magnet program was not operating in the first year, the funds in these three schools were carried over to the second year of the grant.

State Systemic Reform

As part of a statewide student assessment program, a nationally normed standardized test is used to assess student achievement in mathematics, language arts, and reading, and is administered to all students in grades 3 through 11. A state “exit exam” in reading, mathematics, and language arts is administered in the eleventh and twelfth-grades. The assessment program also includes separate assessments in the fifth and seventh-grades in writing, and in Algebra I and geometry in the upper grades. The state is moving away from complete reliance on the norm-referenced test, and new assessments based on the state’s curriculum frameworks were in progress at the beginning of the 1998 MSAP grant.

As part of its reform plan, the state is committed to increasing students’ opportunities and academic growth. It develops, implements, and assesses the minimum curriculum content standards and course design for K-12 students, and provides instructional support that includes courses of study, instructional materials and research, and curriculum alignment materials to all public schools in the state.

District Reform Initiatives

In 1994, District F initiated the process of making changes at the district and school levels, and developed its own reform plan based on the state’s reform efforts. Along with its commitment to increasing students’ academic growth, the state’s activities include increasing professional development, involvement of parents and the community, improvement of school safety, and providing quality facilities at all schools. The district’s response to the essentials of the state plan is to:

- Improve measurable academic student achievement.
- Increase opportunities for student learning.
- Strengthen personnel through staff development.
- Enhance community participation and access to schools.
- Improve school safety and student behavior.
- Upgrade school facilities and grounds.

In 1998-2001 District F’s objective is to increase its efforts to provide all students with the opportunity to learn and to improve instructional strategies and align curricula so that students can meet the state’s content and performance standards. The district is developing grade-level content standards for each subject area and benchmarks are being utilized for some courses. The district has implemented an Early Learning Inventory and a Reading Assessment. Performance-based tests have also been developed and the district is developing additional tests and alternative assessment strategies. It is intended that all students have equal access to challenging curriculum from first through twelfth-grades.

Each school has also developed a school improvement plan that includes: 1) building leadership teams with roles and responsibilities, 2) a parent involvement component, 3) a school discipline plan, 4) a multidisciplinary evaluation team, and 5) a staff development plan.

Project Characteristics

Overview

The 1998-2001 MSAP grant in District F supports three elementary schools, one middle school, one junior high school, and two senior high schools, all of which are whole-school programs available to all magnet school students. One of the elementary schools and one of the middle schools were implemented in 1999-2000, and one of the high schools opened in the fall of 2000. The themes of the schools funded by this MSAP grant are varied, and at most of the magnet schools there are multiple themes. Programs at the elementary level include mathematics, science, and technology; humanities, communications, and technology; and classical education. Technology was added to the existing magnet themes as a result of the parent and student survey results. At the middle or junior high school level programs include Micro-Society and the arts. At the high school level the magnet themes are “programs within a school” and students choose from a wide array of academies such as: Performing Arts, Air and Space Studies, Communication Arts, Human Services Academy, Center for Advanced Technology, Industrial Maintenance, Health Services, Business and Finance, Computer Systems, Career Exploration, and Academic Core Program.

Magnet schools play a significant role within District F. Applications have tripled and the most recent magnet fair had approximately 3,000 attendees, which seems to indicate growing support from parents and the community. The project director maintains that parental school preference is magnet schools, followed by private schools and home schooling. According to the project director, “public school is not an option,” explaining that many parents feel that if they cannot get their child into a magnet school they will pay for their child to go to a private school or engage in home schooling, because they do not want their child to attend schools with minority students. “Sixty percent of the students that are in magnet schools would be in private schools if magnet schools did not exist, that is how significant the magnet schools are to our district,” stated the project director.

District F offers both zoned and non-zoned magnet schools, and the non-zoned schools appear to have advantages in competing for students. (Prior to the 1995-1998 MSAP grant cycle, all of the schools were zoned.) The two magnet schools that are zoned enroll all students living within the school’s designated area. Applications from students living in other zones are strongly encouraged, but selected students are only admitted based on space availability. In contrast, non-zoned magnet schools are designed like private schools in that all students must go through an application process and must meet a set of performance requirements to remain in the program. In addition, students in non-zoned magnets are selected for enrollment based on availability instead of being automatically enrolled in the school (based on residence).

For those magnet schools that are not zoned, the district can send a student who does not maintain the required minimum GPA back to their zoned school. Transportation to magnet schools is available to students who live more than 2.5 miles from the magnet they attend, but only to and

from their zoned schools. Parents are responsible for transporting their child to and from the zoned school.

The availability of non-zoned magnet schools places zoned schools in an awkward position, according to the school administrator of one school, because they do not have the same community and district-level support as non-zoned magnet schools. For example, zoned schools lack updated equipment and resources available in other magnet schools, and the physical plants appear to be in poorer condition. The zoned magnet schools' average annual amount budgeted per pupil on the MSAP grant is one-half to one-third as much as the non-zoned magnet schools. Site visitors observed one zoned magnet school and noticed that, compared to the other schools visited, its technology is much more limited and outdated and the building is badly in need of a paint job. According to the district office and other school administrators, some parents in this district are biased against zoned schools, particularly because they disapprove of their children going to schools with high minority populations. The district is in the process of rezoning the area, causing some MSAP schools to lose students.

District-Level Staffing

The MSAP project is implemented under the direction of three staff members at the district level: the project director, the recruitment specialist, and a secretary. The project director manages the daily affairs of the MSAP program (i.e., logistics, finances, parental outreach, and recruitment), along with other federal programs such as 21st-Century Schools, Title I, and the Comprehensive School Reform Demonstration program. The recruitment specialist, who was hired to the full-time position six months after the start of the first year of the program, is responsible for recruiting students for magnet programs and marketing programs to parents and the general community. She stated that working in a magnet school requires a strong commitment to students and their development, and a substantial time commitment. According to the recruitment specialist, "If you plan to work in a magnet school, you'll need to buckle your safety belt and take your vitamins. This is not a 9 to 5."

District F seems to have a hands-off approach to managing the magnet project. The district fulfills its obligation to maintain the program at the macro level but is somewhat disconnected at the school level. Despite the distance between the district office and many of the magnet schools, many school administrators and teachers feel that the district office is available as a resource in a time of need. There are also mixed feelings about the magnet program from school administrators and community members in both magnet and non-magnet schools. However, it is important to note that there was a new MSAP project director each year of the three-year grant, which probably had an impact on how the project was managed.

Recruitment Issues and Strategies

In addition to the MSAP recruitment specialist, the district employs a full-time recruitment specialist for the school system. Together they recruit students for the seven MSAP magnet schools and five other non-MSAP magnet schools in the district, which include four elementary schools and one senior high school.

One-on-one recruiting. *The recruitment specialist views one-on-one recruitment as the most important method. The project relies on magnet school staff, students, and parents to assist with recruiting by providing information about the magnet program to non-magnet students and their parents through school tours, oral presentations and telephone calls.*

The philosophy behind the recruitment effort promoted proactive outreach to diverse groups in the community and personalized recruitment to the extent possible. The recruitment specialist views one-on-one recruitment as the most important method of recruitment for the district. She believes that parents “value the fact that they can look someone in the eye and talk to them about what they want for their child.” In keeping with this view, the project relies on magnet

school staff, students, and parents to assist with recruiting by providing information about the magnet program to non-magnet students and their parents through school tours, oral presentations, and telephone calls. But the project also uses a variety of other recruitment methods. Recently, the district’s recruitment efforts have focused on making a video to showcase a new magnet high school, and organizing the annual magnet school fair. Each school hosts open houses in conjunction with the fair.

For most of the grant, the project’s recruitment efforts were consistent with the philosophy of proactive outreach to diverse groups. In 1999 the project director reported that less than half of the recruitment efforts were focused on a targeted group of students. During the first site visit, the recruitment specialist noted that she did not prioritize recruitment efforts by neighborhood. Predominantly black residential areas were included in the recruitment process and the programs were promoted to a variety of organizations such as church youth groups, religious congregations, civic clubs, homeowners associations, realtors, day care centers, and the like.

By the final year of the grant, however, the project director noted that recruitment strategies for the project had changed in an attempt to increase the nonminority application pool. The project was making a more focused effort to recruit students from the east side of town, which would increase the potential pool of nonminority applicants.

The project recruited a large number of racially diverse applicants to its MSAP magnet schools. At the elementary school level, more than 600 applicants were recruited to two of the elementary programs by the second year and each had more than 80 students on a waiting list after the start of the year. No waiting list was reported for the third elementary school, where implementation of the program had been delayed a year. The district office reported more than 2,700 applications to the district’s middle and senior high school magnets. Near the end of the project, the director contended that the MSAP programs sold themselves, noting that the schools received far more applications than there was room available.

The recruitment specialist maintained that recruiting from private schools is becoming more successful because parents are becoming increasingly concerned about the high costs of private schooling and many see magnet schools as having more resources than private schools. Yet there was no direct evidence of the number of students who had been recruited from private schools.

Desegregation Plan and Objectives

Throughout the 1970s and 1980s the school district was under court order to desegregate schools that had all-white or all-black enrollment. The district was declared unitary by court standards in the early 1990s, but continued its desegregation efforts with a voluntary plan. For its 1998 MSAP grant, the district targeted the seven MSAP-supported schools for desegregation. The MSAP desegregation objectives for these schools that are to be achieved during the period of the grant include:

- Preventing minority group isolation (MGI) in one elementary school by keeping the proportion of minority students from exceeding 50 percent of school enrollment.
- Eliminating MGI in one elementary school and two MSAP high schools by lowering the proportion of minority students at each school to 50 percent or less of school enrollment.
- Reducing MGI in one elementary and two middle schools by decreasing the percent minority student enrollment.

These are ambitious goals, as the district's overall minority enrollment in the baseline year of 1997-1998 ranged from 69 percent at the high school level to 72 percent at the elementary and middle school levels. Moreover, the district's percent minority enrollment continued to increase over the course of the project to 73 percent at the high school level and 76 percent at the elementary and middle school levels in 2000-2001.

Despite the project's success in recruiting applicants to its programs, the improvements in MGI were modest. The project achieved or made progress toward its desegregation objectives at three

Attempting to reduce minority group isolation. Three out of seven schools made progress in reducing MGI. Minority enrollment was brought below 50 percent at one of the high schools, and a second high school opened in 2000-2001 with a minority enrollment of 52 percent, while the percentage increase at one elementary school was less than the districtwide increase. Minority isolation was neither prevented nor reduced at the other elementary or middle schools. Instead, all experienced between a 7 and 13 percentage point increase in the proportion of minority student enrollment, which exceeded the districtwide increases at those grade levels.

schools in which it was aiming to eliminate minority isolation, but did not prevent or reduce MGI at the remaining four schools. The project succeeded in eliminating minority group isolation at one of the high schools by reducing the percentage minority enrollment below 50 percent, and it came close to that objective at a second high school that opened in 2000-2001 with a minority enrollment of 52 percent, which was lower than the anticipated enrollment of 55 percent. In the one elementary

school that the district targeted for elimination of minority isolation, the percent minority enrollment increased slightly. However, the Department of Education would consider this school as having made progress in reducing minority isolation because the increase in MGI was less than the district's 4 percent increase in representation of minority students during the same period.

MGI was neither prevented nor reduced at the other two elementary schools or the two middle schools. Instead, all four schools experienced between a 7 and 13 percentage point increase in the proportion of minority student enrollment, which exceeded the districtwide increases at those grade levels. While the two attendance zone magnet schools in the district, one an elementary and the other a middle school, were included in this group of four, the increases in MGI in those schools was similar to those of the two non-attendance zone schools.²⁹

Several related factors make it problematic for this district to reduce or limit minority group isolation in magnet schools. First, minorities represent a high proportion of the students enrolled in the district's public schools. This results in a relatively small pool of potential white applicants and a large pool of potential minority applicants that may be recruited from the public school system.

Second, the number of white students in the public school system continues to decrease at all grade levels, which shrinks the potential number of nonminority applicants. The continuing decrease in the number of white students at all grade levels makes it doubtful that the MSAP project was able to recruit many students away from private schools.

Third, in a selection process that is race neutral, the proportions of minority and nonminority students admitted to magnet schools may mirror the recruitment process. Rather than targeting its recruitment effort, District F pursued a strategy of outreach to diverse communities. The project director reported that it was difficult to achieve the project's desegregation objectives because the pool of applicants often included a large proportion of minority students.

While the project director acknowledged changes were being made in recruitment efforts to obtain more nonminority applications, the high proportion of minority students in the public schools, shrinking pool of white students, and limited effectiveness in recruiting students from private and parochial schools indicate some of the challenges in obtaining an adequate number of nonminority applicants to reduce minority group isolation.

The Role of the MSAP Project in Supporting State Systemic Reform and Other District Initiatives

The MSAP project has contributed to the achievement of systemic reform initiatives across the district. One of the objectives of MSAP in District F is that "each magnet school will assist the district in achieving systemic reforms and providing all students the opportunity to meet challenging state and district content and performance standards as measured by comparing the strategies of the magnet programs to strategies in the [state] plan and the district's Systemic Reform Plan." The MSAP project is working to align the curriculum in magnet schools with state and district frameworks in mathematics, language arts, science and social studies, and using the state and district content and performance standards in the magnet programs. At MSAP-supported schools teachers are encouraged to create their own approaches to meet the curriculum standards.

²⁹ Another means of demonstrating a program's effectiveness if MGI in a targeted school increases above the districtwide increase is to show through methods such as transfer data that MGI would have increased even further had it not been for students enrolling in a magnet program from outside the school's attendance area. Such data were not generally included in the annual reports available for this study.

In the first year of the 1998-2001 MSAP grant cycle, a primary focus of each magnet school was to enhance community participation and access to schools by developing a parent involvement program and a community partnership program as part of the district's reform initiatives. In all three years of the grant each of the magnet schools demonstrated that they increased the involvement of parents and the community in the education of their students. Parents were actively involved in classroom instruction and other school activities, and businesses and community organizations were supporting the MSAP schools AIR visited. Providing staff development in technology and working with diverse populations, themes, and related strategies and methods are other techniques that the MSAP schools have implemented to promote district reform efforts.

Student Achievement

District F based its MSAP objectives for student achievement on scores from the state's nationally normed standardized assessment, which was administered throughout the grant period. Originally, the district's objectives called for (1) 70 percent of magnet students to make gains of at least 2 percentile points each year in reading, language, and mathematics; (2) the progress of magnet school students to exceed the district average; and (3) 70 percent of magnet students to show growth in knowledge and grasp of vocational skills. Early in the project, the career-related objective was abandoned and the objective for student progress on the standardized test was revised simply to call for annual increases of unspecified magnitude in the magnet schools' average scores. The new objective was less ambitious than its predecessor (it is easier for a school to increase average scores than to increase the percentile ranking of 70 percent of its students). Furthermore, the revised objective represents a much more manageable evaluation task for the project's evaluator: tracking individual students' progress over time requires data management and analysis capacity that many districts lack, while comparisons of school averages are commonplace. District F wrote its achievement objectives before an evaluator had been hired to analyze student achievement outcomes for the MSAP project.

The district provided average assessment scores for the years 1998 through 2000 disaggregated by grade and students' minority status. Data were reported for four MSAP-supported magnet schools: two elementary schools, one middle school, and one high school. (Trend data are unavailable for the two MSAP-supported schools that implemented their programs in 1999-2000, and the second MSAP-supported high school that opened during the final year of the grant.) Students in three grades were tested in each school (grades 3-5 in the two elementary schools, 6-8 in the middle school, and 9-11 in the high school) in reading, language, and mathematics. In all four schools, both minority and nonminority students in all grades scored above the district average for their grade and minority status. This pattern was particularly evident among minority students. For instance, in 2000, the mean percentile scores for minority students in MSAP schools were 20 to 40 points higher than the district average for minority students, while the average for nonminority students was 10 to 20 points higher than the district average for nonminority students. Since students were required to maintain a specified grade point average in order to remain in the magnet schools, this result is not surprising.

Results of the analysis of achievement gains were not particularly conclusive. Changes in performance between 1998 and 2000 varied considerably by grade and year across the four schools. One-year changes for individual grades in particular schools included gains and losses of more than

20 percentile points, and substantial gains or losses in one year were often offset by similar changes in the opposite direction the following year. (By contrast, *district*-level data show average one-year changes in percentile points ranging from a less than one-point decline to a six-point gain.) A more general sense of the magnet students' progress may be obtained by examining the average change over two years. In all schools, both minority and nonminority students in some or all tested grades made gains in some subjects.

Minority students in the elementary and middle magnet schools tended to show similar or higher gains than their nonminority counterparts in terms of the numbers of grades with average annual gains in scores of 2 or more percentile points between 1998 and 2000 on reading, language arts, mathematics problem-solving, and mathematics procedures. Nonminority students in one elementary school and the middle school showed the least progress (with no more than one grade

Higher gains for the mathematics, science and technology theme. *The elementary school with a mathematics, science and technology theme showed higher gains in all subjects tested than the elementary school with themes in international studies, humanities, communication and technology; and the middle school, which has a mathematics, science and technology theme, showed higher gains in mathematics than in reading or language arts.*

showing growth in any subject tested). Minority students in the same elementary school showed the least progress among the schools (with more than one grade showing annual gains averaging 2 percentile points in only one of the subjects tested). The elementary school with a mathematics, science and technology theme showed higher gains in all subjects tested than the elementary

school with themes in international studies, humanities, communication, and technology; and the middle school, which has a mathematics, science, and technology theme showed higher gains in mathematics than in reading or language arts.

Professional Development

Strengthening personnel through staff development is a centerpiece of ongoing improvement for most of the MSAP schools. Technology training has been implemented at all of the magnet schools, and it includes enhancing technology-related activities in the classroom, and training on computer software and the Internet. In some cases, funds are provided for teachers to attend conferences and fairs off-site. Other kinds of professional development offered include reading comprehension, implementing themes, testing procedures, and school safety. Attention to the amount and choice of professional development activities varies across the MSAP schools.

Innovative Practices

Overall, magnet schools in the district are given a great deal of autonomy in how they manage and implement the MSAP program. Innovative practices are emphasized at the school level. For example, activities such as student-produced morning shows and child-centered learning environments are common in MSAP schools. One of the elementary schools follows the Audrey Cohen model for purpose-centered learning education. The new high school is recognized as one of the top 15 high schools in the nation because of their technological innovations. It also uses a problem-based curriculum that allows students to exercise their knowledge by solving real-life problems. One of the middle schools was recognized in *PC Magazine* for their computer lab and

technology. Another high school has been recognized by the Kennedy Center for its art integration program.

School Level Programs and Activities

This case study describes findings from site visits to District F in spring 2000 and spring 2001 and focuses on four of District F's MSAP schools: two elementary schools, one junior high, and one middle school. To provide a comparison for these schools, two non-magnet schools, one elementary and one junior high school, were also part of the case study site visits. The project director recommended the two MSAP elementary schools and the middle school, and originally suggested that we visit one of the high schools. However, the preference for case study site visits was to observe two MSAP schools at each level whenever possible. AIR selected comparison schools that had demographic compositions similar to the MSAP-supported magnet schools, but which did not operate magnet programs.

Overview of Elementary Schools

At the elementary level, AIR focused on two MSAP-supported schools and a comparison school in District F.

MSAP elementary school No. 1 is an international academy for humanities, communications, and technology. The school is in close proximity to a public housing project in a neighborhood with a high crime rate. However, the building is well maintained, clean and attractive. Despite the acceptance of the school by the neighborhood, teachers reported that there are not a substantial number of neighborhood students attending the school. Teachers attribute this to a perception that the magnet program is perhaps too challenging or intimidating for the at-risk students in the area. The school has taken extra steps to keep the grounds well groomed in order to attract parents and students. In fact, MSAP elementary school No. 1 has received awards and recognition for the presentation of its campus, which includes several gardens maintained by students. Faculty members report that the school's efforts to maintain the campus have influenced nearby residents.

MSAP elementary school No. 2 emphasizes mathematics, science, and technology. The school is in a middle- to upper-income neighborhood and draws students from that community. The school's interior is well maintained and well decorated and the grounds are clean and inviting. The school recently underwent massive construction to expand its main building to remove portables. The library and technology labs were not ready when the building opened at the beginning of the school year; the technology labs opened the following school year. The building is the most modern looking of the magnet schools visited.

The **comparison elementary school** is one of the oldest in the county and is located in a transient, low-income neighborhood. The neighborhood and school have been in transition from predominantly white to predominantly black over the past few years. Recent increases in crime have expedited the racial transition of the neighborhood. Ninety percent of the student population is economically disadvantaged, and a substantial number have learning disabilities. Many students in attendance are residents of a nearby housing project and there are no buses to transport students.

The school does not have a very appealing exterior, and the entrance is next to a trash area that is not well maintained. The school's interior has a more attractive appearance. Hallways are decorated with motivational posters and student work is colorfully displayed in the front entrance of the school.

MSAP Elementary School No. 1	MSAP Elementary School No. 2
<p><i>MSAP School Theme:</i> International Academy for Humanities, Communication, and Technology Grade Levels: K–5 Student Characteristics Number of Students: 271* Race-Ethnic Breakdown of Students:</p> <ul style="list-style-type: none"> • Hispanic: 5% • White: 44.5% • Black: 48% • Asian/Pacific Islander: 2.5% • Am. Indian/Alaska Native: 0% <p>Percent Free/Reduced-Price Lunches: 40%</p> <p>Teacher Characteristics Number of FTE Teachers: 17 Race-Ethnic Breakdown of Teachers:</p> <ul style="list-style-type: none"> • Hispanic: 0% • White: 71% • Black: 22% • Asian/Pacific Islander: 7% • Am. Indian/Alaska Native: 0% <p>5+ Years of Teaching: 43% Newly Hired: 14%</p> <p>School and Neighborhood Characteristics</p> <ul style="list-style-type: none"> • Well-maintained, renovated • Neighborhood has a high crime rate and public housing project 	<p><i>MSAP School Theme:</i> Mathematics, Science with Technology Grade Levels: K–5 Student Characteristics Number of Students: 450 Race-Ethnic Breakdown of Students:</p> <ul style="list-style-type: none"> • Hispanic: 0.4% • White: 44% • Black: 55% • Asian/Pacific Islander: 0.4% • Am. Indian/Alaska Native: 0% <p>Percent Free/Reduced-Price Lunches: 28%</p> <p>Teacher Characteristics Number of FTE Teachers: 22 Race-Ethnic Breakdown of Teachers:</p> <ul style="list-style-type: none"> • Hispanic: 0% • White: 77% • Black: 23% • Asian/Pacific Islander: 0% • Am. Indian/Alaska Native: 0% <p>5+ Years of Teaching: 59% Newly Hired: 5%</p> <p>School and Neighborhood Characteristics</p> <ul style="list-style-type: none"> • Well-maintained; recently remodeled • Middle- to upper-income neighborhood
Comparison Elementary School	
<p><i>School Theme:</i> None Grade Levels: K–6 Student Characteristics Number of Students: 372 Race-Ethnic Breakdown of Students:</p> <ul style="list-style-type: none"> • Hispanic: 0.5% • White: 34.5% • Black: 62% • Asian/Pacific Islander: 3% • Am. Indian/Alaska Native: 0% <p>Percent Free/Reduced-Price Lunches: 87%</p> <p>Teacher Characteristics Number of FTE Teachers: 22 Race-Ethnic Breakdown of Teachers:</p> <ul style="list-style-type: none"> • Hispanic: 0% • White: 55% • Black: 45% • Asian/Pacific Islander: 0% • Am. Indian/Alaska Native: 0% <p>5+ Years of Teaching: 64% Newly Hired: 9%</p> <p>School and Neighborhood Characteristics</p> <ul style="list-style-type: none"> • Exterior not well-maintained • Transient, low-income area 	

* Data are from 1999-2000 school year

Program, Themes, Goals

School themes

MSAP elementary school No. 1, carried over from the 1995-1998 MSAP grant cycle, has a well-established, innovative magnet program, and the themes of international studies, humanities, communication and technology are woven into most aspects of the curriculum. In this school there is a strong emphasis on international studies in an effort to encourage students to become “global thinkers.” The newly added international theme is evident upon entering the building and within individual classrooms. Colorful displays of flags, globes, and student work representing various countries and ethnic backgrounds are displayed throughout the building.

Because of the school’s theme in international studies, international students are automatically accepted into the program. Approximately 20 percent of the student body is from countries outside the United States and in this country for a limited amount of time. International students often enter the program unable to speak or understand much English. Students are paired with a buddy from another country, and the school provides intense training in English as a Second Language (ESL). During summer months, recruitment efforts spearheaded by the lead teacher and the district recruitment specialist are targeted to residents of a nearby Air Force base. The international students from the base have contributed to the school’s diversity; however, they have also contributed to the school’s high student mobility rate.

Cultural and multi-media projects.

Students are engaged in extensive cultural and multi-media projects across the curriculum and are introduced to discipline-based arts instruction.

Students are engaged in extensive cultural and multi-media projects across the curriculum and are introduced to discipline-based arts instruction. The school engages in physical activities by having a certified dance instructor work with the gym teacher three days a week to design various cultural dance routines. The school also has a

balanced combination of field trips, visitors such as authors and illustrators, and an artist-in-residence. In addition, the school offers a morning television show, a talk radio program, a newspaper, and a magazine.

Test-taking skills. *To improve test scores, the school has purchased materials and computer programs that teach sophisticated test-taking skills.*

This school’s ultimate goals are to have all students achieving at a high level and to improve test scores. To reach these goals, the school emphasizes an interactive approach to learning, technology integration across the curriculum, and the development of higher order thinking skills.

To improve test scores, the school has purchased materials and computer programs that teach sophisticated test-taking skills.

MSAP elementary school No. 2, also carried over from the 1995-1998 MSAP grant, attracts students who have a strong interest in mathematics, science, and technology and uses a hands-on approach to teaching and learning. Using this approach, the school strives to be child centered with an emphasis on cooperative learning, and an overall spirit of collaboration. A fourth-grade teacher

succinctly stated, “Here, learning is not a spectator sport.” Special focus areas are established at regular intervals to make the program more cohesive. For example, robotics was a focus area at the time of the site visit, and most classes displayed some evidence of work in this area.

The school uses several research-based curricula: Reading Renaissance, Marilyn Burns Math Solutions, and Ames and Gems Science Kits. Many of the research-based activities are employed based on each teacher’s comfort level, and curricula are not applied school- or districtwide. All teachers interviewed mentioned the performance-based approach and embraced it as an effective way to teach students.

The school sponsors theme-related clubs that provide opportunities for students to exercise and integrate what they are learning. The clubs are held after school for grades 3-5; in 2000, all grades

Theme-related clubs. *The school sponsors theme-related clubs that provide opportunities for students to exercise and integrate what they are learning. According to some staff, the recent change to after-school activities works better because students are now in clubs that they prefer, teachers are able to invest more time, and staff are better able to manage the clubs.*

participated in such clubs during the last school period of the third Wednesday of every month. According to some staff, the recent change to after-school activities works better for students, teachers, and parents because students are now in clubs that they prefer, teachers are able

to invest more time, and staff are better able to manage the clubs. In the past, all students were assigned to a club and may not have gotten into a club of their choice, which led to overpopulated clubs.

Technology

Unique to the schools visited in the district, elementary school No. 1 has an abundance of state-of-the-art technology equipment. In the third year of the grant, additional MSAP funds were

State-of-the-art equipment. *Elementary school No. 1 has an abundance of state-of-the-art technology equipment. In the third year of the grant, additional MSAP funds were funneled directly into technology enhancement, to support a full-time technology specialist and the placement of six to eight computers in every class, in addition to printers, television sets, DVD players, and computer software.*

funneled directly into technology enhancement, to support a full-time technology specialist and the placement of six to eight computers in every class, in addition to printers, television sets, DVD players, and computer software. There are wireless computer labs consisting of portable I-books (Macintosh laptops) and equipment

in the main computer lab was also upgraded and refurbished with new I-books, I-Macs with DVD players, and digital cameras. In addition, the school sent six staff members, including the technology specialist, to a regional technology fair that introduced various ways of applying technology.

At elementary school No. 2, MSAP funds are used for computers and computer programs (e.g., Dream Writers, CD-ROMs). A technology specialist is also supported by MSAP funds and her major instructional responsibilities include teaching keyboarding skills, basic computer

terminology, software manipulation, and computer maintenance. She conducts lessons in the classrooms because each class has at least four upgraded computers and some have laptops. (Each teacher has a computer as well.) The technology specialist also has several other roles, such as system administrator, staff technology trainer, and software and hardware installer.

Participation in technology-related competition is a primary means of fulfilling this school's goals. Several classes participate in some form of competition at the local, state, and national levels. Students actively worked on their projects and seemed as if they understood what they were doing, and did not require much assistance from the teacher. At the time of the site visit, most presentations were science and technology related and involved robotics. Students are also tested three times a year on technology-related skills.

Limited resources are the most pressing concern for the comparison elementary school, according to the school administrator. In fact, the school is unable to obtain basic school supplies. Classes do not have enough books for each student to use, and students must share items such as dictionaries and spelling practice books, some of which are outdated and worn. In contrast to the MSAP schools, on average each class has four student computers, some of which looked outdated. It appears that teachers do not have their own computers and must use one of the student computers for administrative needs.

Professional development

At elementary school No. 1, professional development emphasizes technology as the focus for their reform efforts, and teachers begin the year with a review course in using the technology at

Professional development areas. *Elementary school No. 1 emphasizes technology as the focus for their reform efforts, and teachers begin the year with a review course in using the technology at hand. Professional development activities at elementary school No. 2 are geared toward enhancing the school's approach to learning.*

hand. As well as enhancing the use of technology in the classroom, such as training on Internet and on the software the school uses for report cards and attendance, professional development activities at elementary school No. 2 are geared toward enhancing the school's approach to learning. Some of the staff development activities taking place

within the school included a Reading Renaissance seminar during the previous summer, and training in Character Education. All faculty members participate in these activities and the technology specialist facilitates technology-related activities. Despite these activities, some teachers voiced concerns about a lack of theme-related professional development and about the limited choice in professional development activities.

Professional development also plays a key role in helping the comparison elementary school achieve its goals. The school is required to plan 11 in-service activities per year, of which approximately nine are actualized each year. These professional development activities reflect the school's main areas of concern: student achievement, writing skills, diversity, classroom management, and violence prevention and safety.

Parental and community involvement

In addition to staff development, District F's reform efforts focus on parental support. Distinctive to elementary school No. 1 is the enormous amount of parental involvement. Parents

Parental involvement. *Elementary school No. 1 sees an enormous amount of parental involvement. Parents regularly assist teachers with all aspects of daily instruction, from planning and organizing class lessons to coordinating end-of-the-year programs and donating funds and resources.*

regularly assist teachers with all aspects of daily instruction, from planning and organizing class lessons to coordinating end-of-the-year programs and donating funds and resources, e.g., software packages. At the time of the visit, one parent was helping the reading specialist monitor

the progress of students in the Writing-to-Read session. In addition, parents assist with schoolwide administrative tasks by volunteering in the library and main office. Both administrators and teachers seem to be genuinely appreciative of the dedicated support, and they feel that the students benefit from the collaboration.

Similar to elementary school No. 1, there is a high level of parental involvement within elementary school No. 2. Parents chaperon field trips, spearhead fundraising activities, serve as substitutes and classroom volunteers, lead seasonal arts and crafts activities, and participate in after-school clubs. The PTA is very active and members tend to utilize their job-related skills to contribute to the school. For example, one parent who works for a technology company is helping to set up the computer lab. Another parent has a landscaping business and assists with school grounds.

In addition to parental support, several collaborative partnerships in elementary school No. 1 provide financial and volunteer support in various capacities. For example, area jewelry stores donate jewelry as door prizes for PTA meetings, and nearby television and radio stations provide recruitment publicity and technical support throughout the school year. In addition, the regional bank's 23 branches adopt a school. Every nine weeks, 40 employees from a nearby branch visit the school to review report cards and reward students with play money based on grades. At the end of the school year students can purchase items that the bank provides using the "money" they earn.

According to the school administrator, the comparison elementary school receives little in the way of Title I funds so administrators spend a lot of time trying to build relationships with the community and local businesses to leverage resources. Most partnerships with community organizations and businesses tend to yield volunteer assistance rather than monetary support as in MSAP elementary school No. 1, but two have yielded resources for the school. One corporation provided funds to build a science lab that is now being maintained through Title I support. Another organization contributed to the purchase of new computers and software for the school's Writing-to-Read lab.

School Instruction and Activities

Integration of theme

The international theme at MSAP elementary school No. 1 is integrated into all subjects at this elementary school: students are engaged in a substantial amount of project and group work that

draws parallels to the theme. For example, students create their own travel brochure for a city or state within their designated country, and the activity infuses geography, language arts, and foreign language. Students study a different country for an extended interval from 9 to 12 weeks. Each class researches a country and presents their findings to the school by way of a school fair or the school's "Good Morning" television production. Students are also encouraged to appreciate foreign languages and are being introduced to French and Spanish. Recently, students planted several gardens of different plants and flowers at the school's entrances, and they are learning about different plant names in French and Spanish as they study the specifics of horticulture.

In MSAP elementary school No. 2, the science theme is most evident, but as with the other theme components—mathematics and technology—it does not appear to be infused in the curriculum throughout the school day as in elementary school No. 1. Instead, each class visits the science lab once a week and the science coordinator uses this time to weave the theme into the general curriculum and to build relationships with students. She also provides guidance to teachers on incorporating science into the subjects they are teaching. For example, she identifies Web sites, articles, materials, activities and other resources.

Learning environment

As mentioned above, MSAP elementary school No. 1 has an abundance of technological equipment. All classroom computers are equipped with a wide range of academic software including Leap Frog, Reading Counts, and Word Munchers. During one class observation, students completed a reading comprehension test on the computer using the software. Students in another class created an airplane using digital cameras, iMac computers, paper, and strings, and also designed cardboard backgrounds. In another class they created their own movies.

Teachers in each grade are encouraged to work as a team to brainstorm innovative methods of applying cross-curriculum instruction. The learning environment appears to be stimulating to students, and they are engaged and excited about the learning process. In addition, students seem responsive to peer needs, as peer encouragement is apparent in every class. According to teachers and administrators, this type of relationship between peers has probably helped international students transition into the classroom.

Many of the class assignments in elementary school No. 2 are hands-on and involve a lot of collaboration. As in elementary school No. 1, it appears that students are comfortable with the learning structure, are engrossed in their work, clear about their roles within the classroom, and eager to answer questions.

A major goal of the comparison elementary school is to improve student performance on all mandated tests and bring all students up to grade level. To improve test scores, the school focuses much of its resources and time on test taking. Students engage in practice exams and writing exercises to help prepare them for the writing portion of the nationally normed standardized test.

Maintaining school and classroom order is also a focus at the comparison school. Classrooms are structured so that students do not have much peer interaction, an approach viewed as a critical means to maintaining a safe and productive learning environment, but contrary to the classroom environment in the magnet schools visited. Despite large class sizes in the comparison school,

teachers are engaging students in challenging class discussions and real-life examples they can relate to.

***School differences.** Magnet schools tend to have more innovative practices such as cooperative learning and student-centered classrooms. The comparison school tends to have more structured and controlled learning environments, and MSAP-funded schools tend to have more motivated teachers and students.*

In sum, there are striking differences between the MSAP-funded elementary schools and the comparison school, in both the physical plants as well as the structure of the schools. For example, magnet schools tend to have more innovative practices such as cooperative learning and student-centered classrooms. The

comparison school tends to have more structured and controlled learning environments, and MSAP-funded schools tend to have more motivated teachers and students. Also, magnet schools have much greater technological resources.

Overview of Middle Schools

At the middle school level, AIR focused on two MSAP-supported schools (one is a junior high school serving grades 7-9) and a comparison school, also a junior high school, in District F.

Although **MSAP middle school No. 1** is housed in an older building, it is well maintained, filled with student artwork and very colorful. The school has several small caged animals in front of the main office, and many classrooms have some sort of plant and animal life.

Until the 1998-2001 MSAP grant MSAP middle school No. 1 was K-8, but it became the district's first middle school (grades 6-8). The district used the MSAP grant to support the school's

***Converting to middle schools.** Converting middle school No. 1 from K-8 to a middle school system made this non-zoned school a test bed to determine whether shifting from a junior high to a middle school structure provides a more stimulating and supportive environment. Due to its success, the district decided to convert all junior high schools to middle schools.*

conversion to a middle school system, which makes this non-zoned school a test bed for the county to determine whether shifting from a junior high to a middle school structure provides a more stimulating and supportive environment for students. When the program started, the school administrator and all of the teachers had to reapply for positions in the school, and not all of the applications from former teachers were accepted. According to the school administrator, this requirement

provided a standard that ensured dedicated and enthusiastic teachers, which he believes was necessary for the school's success as a magnet and as a middle school. The school has proven popular with students—in 2001 it had approximately 300 students on its waiting list. Due to its success, the district decided to convert all junior high schools to middle schools.

MSAP middle school No. 2 is located in the center of town and in close proximity to a housing project. The school building and facilities are in need of some repair, and the paint on the classroom and hallway walls is aged, dull, and cracked. Upgrading school facilities and grounds is on the school's list of improvement objectives. The district has suggested to the school administrator that

the school try to recruit community members, parents, and teachers as volunteers to paint the entire school, but the school administrator wants the district to provide the necessary funding for a safe, clean, and presentable building. He plans to continue an aggressive campaign for district support.

The comparison middle school is a junior high school that operates on local and state funds. The school building dates back to the 1950s; however, the school is orderly and well maintained.

Middle school No. 2 and the comparison junior high school are zoned schools, which means that students living in the surrounding neighborhood are assigned to the school; however, applications from students assigned to other zoned schools are strongly encouraged. One of the teachers at middle school No. 2 reported that recruitment is somewhat challenging, particularly because many parents of other communities have negative perceptions of zoned magnet schools, especially those with a high minority population. Parents, community leaders, and teachers of the neighborhood in which the school resides also expressed reservations about the magnet program. Prior to the start of the program, there was concern that students attending the school from other zones would harbor elitist attitudes and negatively affect (academically and socially) students automatically assigned to the school. However, administrators and teachers in the school report that the grouping of students has not negatively impacted the school environment.

MSAP Middle School No. 1	MSAP Middle School No. 2
<p><i>MSAP School Theme:</i> Mathematics, Technology, Science, International Studies</p> <p>Grade Levels: 6–8</p> <p>Student Characteristics Number of Students: 511* Race-Ethnic Breakdown of Students:</p> <ul style="list-style-type: none"> • Hispanic: 1.5% • White: 39% • Black: 58% • Asian/Pacific Islander: 1.5% • Am. Indian/Alaska Native: 0% <p>Percent Free/Reduced-Price Lunches: 48%</p> <p>Teacher Characteristics Number of FTE Teachers: 30 Race-Ethnic Breakdown of Teachers:</p> <ul style="list-style-type: none"> • Hispanic: 0% • White: 53% • Black: 47% • Asian/Pacific Islander: 0% • Am. Indian/Alaska Native: 0% <p>5+ Years of Teaching: 57% Newly Hired: 7%</p> <p>School and Neighborhood Characteristics</p> <ul style="list-style-type: none"> • Well-maintained • Not a zoned school 	<p><i>MSAP School Theme:</i> Micro-Society</p> <p>Grade Levels: 7–9</p> <p>Student Characteristics Number of Students: 357 Race-Ethnic Breakdown of Students:</p> <ul style="list-style-type: none"> • Hispanic: 0% • White: 24% • Black: 74% • Asian/Pacific Islander: 2% • Am. Indian/Alaska Native: 0% <p>Percent Free/Reduced-Price Lunches: 81%</p> <p>Teacher Characteristics Number of FTE Teachers: 22 Race-Ethnic Breakdown of Teachers:</p> <ul style="list-style-type: none"> • Hispanic: 0% • White: 23% • Black: 77% • Asian/Pacific Islander: 0% • Am. Indian/Alaska Native: 0% <p>5+ Years of Teaching: 55% Newly Hired: 5%</p> <p>School and Neighborhood Characteristics</p> <ul style="list-style-type: none"> • In need of repair • Center of town, near housing project • Zoned school
Comparison Middle School	
<p><i>School Theme:</i> None</p> <p>Grade Levels: 7–9</p> <p>Student Characteristics Number of Students: 621 Race-Ethnic Breakdown of Students:</p> <ul style="list-style-type: none"> • Hispanic: 0% • White: 53.4% • Black: 46.3% • Asian/Pacific Islander: 0.2% • Am. Indian/Alaska Native: 0.2% <p>Percent Free/Reduced-Price Lunches: 50%</p> <p>Teacher Characteristics Number of FTE Teachers: 39 Race-Ethnic Breakdown of Teachers:</p> <ul style="list-style-type: none"> • Hispanic: 49% • White: 51% • Black: 0% • Asian/Pacific Islander: 0% • Am. Indian/Alaska Native: 0% <p>5+ Years of Teaching: 84% Newly Hired: 11%</p> <p>School and Neighborhood Characteristics</p> <ul style="list-style-type: none"> • Well-maintained 	

* Data are from 1999-2000 school year

Program, Theme, Goals

School themes

Also funded in the 1995-1998 MSAP grant cycle, MSAP middle school No. 1's magnet theme is technology, mathematics, and science, with thematic units that are incorporated into the curriculum throughout the school year. Oceanography and natural disasters were the two thematic units observed, respectively, during the first and second year site visits. Several other school foci are reinforced throughout the school—continuous academic achievement, diversity, and innovation. The school has a list of improvement objectives that include increasing opportunities for student learning, enhancing community participation, and strengthening personnel through professional development.

Middle school No. 1 uses MSAP funds to support a theme specialist. She stated that the MSAP grant benefits the school in several ways: teachers have more instructional materials; students are exposed to a positive environment, technology use, character building, and adherence to dress codes; parental support is strong and consistent; and the staff is dedicated. According to the theme specialist, "Teachers are willing to go above and beyond to prepare themselves to teach students."

MSAP middle school No. 2 was a new magnet junior high school in the 1998-2001 grant cycle, and did not actually open until the second year of the grant. The magnet theme is Micro-Society, which entails creating a society at the school for which the students are responsible. The main purpose of the program is to address real life experiences in an academic setting by infusing more hands-on instruction. The school has a list of program goals, which include integrating academic career education and enhancing career awareness opportunities, focusing on citizenship, and emphasizing project-based learning. It is also intended to encourage communication among all students with the intent to build upon and reinforce social skills—an attribute that teachers at this school feel is often overlooked in other schools.

Creating a society. *Students spend the first part of the school year learning about the Micro-Society concept and selecting their role in the society. There is a judicial system, city government, police officers, banks, TV and radio stations, and other entrepreneurial businesses. After a month-long introduction, a job fair takes place for students to determine what their function will be in the society.*

The Micro-Society sequence begins with students spending the first part of the school year learning about the concept and selecting their role in the society. There is a judicial system, city government, a post office, mini-mall, print shop, consignment shop, art shop, warehouse, police officers, banks, TV and radio stations, and other entrepreneurial businesses such as a computer repair company. After a month-long introduction, a job fair takes place for

students to determine what their function will be in the society. Placements are made and students begin to earn wages, pay taxes, and perform civic duties such as engaging in jury duty and voting.

The only MSAP-funded staff member is a lead teacher whose major role is to tailor lesson plans to the theme. To further reinforce skills, the lead teacher facilitates a job-shadowing program in which most students are paired for a day with people in a profession reflective of the students'

chosen role in the Micro-Society. However, the lead teacher reported that not all of the jobs provided by local businesses are aligned with the students' Micro-Society career because of limited support from the businesses. Future plans are underway to develop a more systematic way of recruiting businesses whose jobs are aligned with the magnet theme.

The school is trying to reform the Micro-Society program and to connect the program with other school activities. Currently, it is treated as an elective that is limited to one period per day, and students from all grade levels are enrolled in classes together. Based on observations, the Micro-Society period operates like a study period and involves very limited theme-related work. For example, students work on academic subjects, none of which are related to Micro-Society. Yet teachers believe that this strategy not only prepares students for the challenges of high school but also serves as a mentoring program by offering students opportunities to learn directly from other peers.

Despite middle school No. 2's struggle with implementing the magnet theme, it has several support mechanisms in place for low-performing students that the administrators and teachers feel have been successful. Federally funded programs and community-support networks have been woven into the overall theme to help improve low academic performance. For example, the 21st-Century Learning after-school program is one of the bigger successes of the school, and approximately 160 students attend each session. A school administrator reported that academic improvements have resulted because of small group instruction and interaction. In addition, several surrounding universities provide tutoring during and after school.

In the comparison junior high school, the administration finds it difficult to develop innovative programs when there are no federal funds or additional funds from the district. The school is giving priority to improving mathematics scores, and much of the resources are funneled to the mathematics department. It has structured before- and after-school tutorial programs, whereas other departments have similar but unstructured programs on an as-needed basis. Another focus of the school is special education—30 percent of the school's population is identified with learning disabilities. The administration has created smaller classes and developed specialized curricula for these students, including emphasis on reading comprehension.

Technology

Middle school No. 1 uses the current MSAP funds to upgrade technology and to support a technology specialist. MSAP funds enable the school to purchase computers, DreamWriters, large video screens to play CD-ROMs, and other curricular materials for the school's three computer labs and classrooms. The technology specialist is heavily involved in maintaining and upgrading the school's technology infrastructure. She teaches computer classes that primarily focus on exposing students to basic technology and software manipulation. She has also held several training sessions for teachers during their staff development time and provides individual assistance to them on an as-needed basis.

The school administrator at this school credits the MSAP grant with providing the school with the ability to become technologically driven. This has led to two challenges, however. The first major challenge centers around getting staff to use technology comfortably on a daily basis. The

school administrator addresses this challenge by requiring the use of technology in some areas and making it optional in others. Staff members now use technology for most administrative activities, such as recording grades and attendance, developing report cards, and communicating via e-mail. The entire staff participates in a yearly technology conference to learn about new trends and how to use technology in the classroom. In addition, faculty meetings and inservice are used to introduce faculty to software and equipment.

The second major challenge is in integrating technology into the curriculum. The technology specialist stated that teachers need more training in how to infuse technology into the curriculum, not just on how to use the technology in general. She believes that it would be beneficial to have a technology-related class included in the overall school curriculum that is required for all students. Currently, students can leave the school and enter high school without basic technological skills, according to the technology specialist.

Unlike other magnet schools in the district and similar to the comparison junior high school, the zoned middle school No. 2 has limited technological resources, primarily because of a smaller fund base. Many classrooms have old computers and outdated software. Some classrooms have only one computer and some are in the process of receiving new computers. MSAP funds are used to purchase school equipment to help with theme implementation, such as printers and printing supplies, digital cameras, calculators, craft items, storage containers, books, software programs, and laptop computers.

In the comparison junior high school, classrooms are equipped with at least one computer, but because of the focus on mathematics, mathematics classrooms have as many as three or four of the newest and most updated systems. The school had planned to infuse more technology into the special education classes, but limited resources thwarted that plan.

Professional development

Contrary to the differences in the technological resources across the three schools, professional development has been implemented in MSAP schools and non-MSAP schools alike. Middle school No. 1 has increased its number of activities and uses some MSAP funds to sponsor training and planning sessions before the start of each school year. The theme specialist plays a significant role in planning professional development activities and workshops for teachers. As stated above, the technology specialist held several training sessions for teachers during their staff development time. In addition, the school maintains a professional development library for teachers and staff, and MSAP funds are used to update the literature. One teacher remarked that the school has the best professional development program in the state because it sends all teachers to national conferences for teachers of mathematics and science. An expectation of the school administrator is that teachers participate in at least one professional development activity per year, which he takes an active role in identifying. For example, the year of the site visit he was planning to bring in an education consultant who would help facilitate team teaching.

Professional development. *Middle school No. 2 has a list of improvement objectives, which include strengthening personnel through professional development. The school promotes a professional development schedule that involves 12-15 in-service sessions during the school year.*

Middle school No. 2 has a list of improvement objectives, which include strengthening personnel through professional development. The school promotes a fairly rigorous and diverse professional development schedule that involves 12-15 in-service sessions during the school year. Recent professional

development topics include: implementation of the Micro-Society theme; testing procedures and motivation; school safety, peer mediation, special education revisions, and reading comprehension.

Staff in the comparison junior high school play an active role in identifying and planning their own professional development. On a monthly basis, the professional development activities last from one to five hours. For the 1999-2000 school year, 16 hours of staff development focused on strategies to improve reading, writing, language, and vocabulary skills across the curriculum, inquiry-based teaching and discovery learning, resources to improve student achievement on the nationally normed standardized test, and stress management techniques to promote care, welfare and security of teachers and students.

Parental and community involvement

Similar to middle school No. 1 and the elementary magnet schools, parental involvement in middle school No. 2 increased as a result of the MSAP project's reform efforts. For example, some teachers state that they receive calls from parents offering their assistance with school activities. The school has a yearly parent orientation night in which the staff is presented, the magnet program and other school-based programs are discussed, and the school administrator reviews what is new and different for the upcoming year. In addition, the school had a parent and staff workshop that covered issues such as technology, shared goals of the school and community, health issues, methods for parents and teachers to communicate and work together, and questions about the Micro-Society theme.

Community involvement at middle school No. 1 is apparent. The theme specialist spends some of her time working with local business and community partners to solicit in-kind support for the school. For example, she has worked with several businesses to provide coupon books for students as a reward for academic accomplishments (e.g., making the honor role, participating in districtwide events).

At the comparison junior high school some staff members feel that the district tends to channel resources to new schools while neglecting established schools such as theirs. The school has approached this challenge by seeking community support. The school collaborates with many of the same businesses that magnet schools in the area do. One staff member maintains that the support is less than that for magnet schools, attributing it to the perception that "traditional schools possess the least talented students." For example, one community partner donated new computers and software to area magnet schools, while they donated older computers to this comparison school.

School Instruction and Activities

Integration of theme

Incorporating the theme. *The magnet themes of science, mathematics, and technology at MSAP middle school No. 1 are integrated into other subjects, and a teaching team determines how instruction in those areas can be brought into other classes.*

The magnet themes of science, mathematics, and technology at MSAP middle school No. 1 are integrated into other subjects, and a teaching team determines how instruction in those areas can be brought into other classes. It is not unusual, for example, to observe English classes in which science and technology content are integrated into

literature and grammar. This is especially apparent in grades 6 and 7, and in some instances, teachers teach both mathematics and science. Science subjects are not taught separately; for example, students can study chemistry, biology, and ecology simultaneously.

The school engages in several activities to address student learning needs. Some teachers lead an after-school tutoring program, and the school promotes the districtwide tutoring programs (i.e., study buddies). The school is focusing on improving students' writing skills, and interventions are in place at all grade levels. Sixth-grade teachers are instructed to improve their students' writing; seventh-grade teachers are assigned to writing workshops; and eighth-grade teachers engage in team grading, in which the social studies teacher may read a paper and assign a grade based on content, while the English teacher grades the paper for spelling and grammar.

At MSAP middle school No. 2, during the Micro-Society period curriculum is driven by actual career-oriented activities. Students typically choose activities with guidance from teachers, giving them some ownership and responsibility. For example, students in the broadcasting class record a public service announcement on the use of slang. Because the school has been battling the use of slang, the teacher feels that this type of communication—student-to-student via a public service announcement—could be very helpful. The school also uses an in-house developed version of the popular game show “Who Wants to be a Millionaire?” Students develop the game show questions, host the show, act as contestants, and produce the program that is aired in all classroom televisions. The broadcasts are popular among students and they state that they enjoy producing them because it gives them exposure to, and experience in, an area they would like to pursue in the future.

Learning environment

At the comparison junior high school, teachers in all subjects are strongly encouraged to teach across subject areas. As in MSAP middle school No. 1, the English department reported that they have been successful in making mathematics and scientific terms a part of daily lessons, while the mathematics department reported that they have been following a similar approach. According to another department chairperson, some teachers find the task cumbersome and are not willing to teach other subjects. The classrooms observed did not seem to accomplish this goal; only a few were reviewing other subject material.

In sum, the MSAP middle schools appear to have more innovative classroom practices, instructional materials and after-school tutoring than the comparison junior high school, and for the

most part, there is more technology use. Unlike most magnet schools, the zoned middle school is struggling with the lack of resources for enhancing technology and many classrooms have outdated computers. Because of the comparison school's focus on improving mathematics scores, mathematics classrooms have most of the resources, and technology is not infused into other classrooms.

Summary

Four MSAP-funded schools were first introduced in District F in the 1995-1998 grant cycle. In the 1998-2001 MSAP grant there are seven MSAP-supported magnet schools: three elementary schools, one middle school, one junior high school, and two senior high schools. Four of the schools are from the previous grant, two schools opened in the 1999-2000 school year, and one opened in fall 2000. Outlined below are some of the benefits and challenges that District F and the magnet schools have experienced in the 1998-2001 grant cycle, some lessons they have learned along the way, and the MSAP project's plans for the future.

Benefits

One of the main ways MSAP has benefited District F is in providing resources to improve the schools' technology in areas such as upgrading computer labs; wiring classrooms; purchasing laptops and desktop computers, computer software, DVD players, and digital cameras; and hiring technology specialists. Professional development in many cases focuses on technology training, and students have had the opportunity to gain technology skills in activities such as robotics and digital photography. Some of the MSAP-supported schools have been recognized nationally for their technological innovations. Enhanced parental involvement and community support are the MSAP project's primary objectives in assisting the district's reform efforts. All of the MSAP-supported schools have more parental involvement than the comparison schools, and parents assist with schoolwide administrative tasks, instructional activities and community partnerships. At most of the magnet schools community support has improved as a result of the MSAP project and businesses are developing collaborative partnerships and providing additional resources to the magnet schools.

Challenges

The hands-off approach of District F in managing the magnet project has caused some school administrators at the magnet schools to feel that the district has fulfilled its obligation to maintain the MSAP project as a whole, but that they are not paying enough attention to each of the individual magnet school programs. The change in the MSAP project director leadership each year was one of the factors in delaying the implementation of programs in three of the magnet schools. This lack of stable leadership contributed to the challenges of initiating new magnet programs as well as continuing established programs.

The existence of both zoned and non-zoned magnet schools has created tensions because the zoned magnet schools have limited resources available, and some parents appear to be biased against zoned schools. MSAP middle school No. 2 faces several challenges in implementing its magnet theme, which relates directly to it being a zoned school. Unlike most MSAP-funded schools

in the district, it is faced with a lack of updated equipment and resources, and limited community support.

Some of the magnet schools visited find it challenging to integrate the themes into the general curriculum, although they seem to be aware of the problems and are making efforts to make changes to connect the programs with other school activities. Technological advances have benefited the magnet schools, but it is challenging for teachers to integrate technology into the curriculum and for the students to learn more than the basic technological skills.

Lessons Learned

The MSAP project in District F has learned that maintaining continuity with the same multiple programs and themes keeps the MSAP schools viable, as in the case of the four schools that were

Maintaining continuity. District F has learned that maintaining continuity with the same multiple programs and themes keeps the MSAP schools viable, as in the case of the four schools that were carried over from the 1995-1998 grant cycle. Additions of new magnet themes also proved to benefit the MSAP schools' programs.

carried over from the 1995-1998 grant cycle. Additions of new magnet themes also proved to benefit the MSAP schools' programs. Prior to the 1998-2001 grant, the district surveyed parents and students and found that technology was the most popular theme, and consequently the MSAP Project added it to the existing magnet programs, as well

as to one of the new magnet schools. At one of the MSAP elementary schools the newly added international theme enhances the other themes of humanities, communications and technology.

The administrators at the new MSAP middle school that opened in the second year of the grant have learned that it takes time to successfully implement magnet themes. The school is attempting to reform the Micro-Society theme and expand the program so that it is not limited to an elective period. The concept of converting a junior high to a middle school was pilot tested by the MSAP Project. Due to its success with the administration, teachers, parents and students, the district plans to convert all of its junior high schools to middle schools.

Plans for the Future

In 2002, all of the magnet schools that were supported under 1998-2001 MSAP funds are still operating with the same themes. The schools are receiving local, state, and Title I funds as well as an NSF grant to supplement the programs, but they are no longer purchasing equipment and several staff changes have occurred, with some lead teachers and a technology specialist no longer being funded. Despite the lack of federal funds, the project director expects that there will still be high expectations and a high demand for magnet schools in District F in the future.

Case Study, District G

District Context

Location and Size

District G serves a city with a population of approximately 125,000. Historically, the city has been an industrial and cultural center in the Northeast. It is home to a large university and several smaller postsecondary institutions that for years have involved themselves in partnerships and reform programs in the city's K-12 school system. Like many aging cities in the area, District G's has lost much of its industrial base and its predominantly white middle class to the surrounding suburbs, leaving an urban population that is predominantly minority and poor.

The district serves about 21,000 students in pre-kindergarten through grade 12. It operates 48 schools—27 elementary and K-8 schools, seven middle schools, and seven high schools. The remaining seven schools enroll students in early childhood, special education, and transitional programs. Several public charter schools and a regional vocational school also operate within the district boundaries.

Student Composition

The district's enrollment (1999-2000) is 88 percent minority, with large proportions of both black (57 percent) and Hispanic (28 percent) students. Overall, the proportion of minority students in grades K-8 is 90 percent and increasing, while in the high schools it is 83 percent and has remained stable for several years—a pattern that district officials attribute to the success of high school magnet programs in attracting and holding nonminority students. District G's students also tend to be poor. Students eligible for free or reduced-price meals make up well over half of the district's elementary and middle school enrollments and more than a third of the high school enrollment.

The district estimates that about half of the city's resident white youths are enrolled in predominantly white private schools. District officials believe that some of these students can be lured back into the public schools via magnet schools. However, the major potential source of nonminority students for District G's magnet schools is the public schools in the surrounding suburbs, where the average enrollment is 88 percent nonminority and 15 percent in poverty. The district's involvement in an interdistrict desegregation program will be discussed later in this chapter.

Magnet School History

District G has operated magnet schools for well over two decades. There are currently 14 magnet schools (including seven elementary or K-8 schools, three middle schools, and four high schools) that are attended by almost one in three of the district's students. Several hundred of these students reside in the suburbs and cross district lines to attend city schools.

District G has attempted to desegregate its schools voluntarily since the 1960s. Early efforts, which employed a variety of strategies, including paired schools, rezoning, and encouragement of voluntary transfers, prompted large numbers of white families to move to the suburbs or enroll their children in private schools. The district began to establish magnet school programs in the 1980s, and

by the time it applied for its first federal magnet schools grant, six magnet schools were already in operation. Three MSAP grants prior to 1998 helped to establish additional magnet schools and to bolster preexisting programs in others. The 1998 MSAP cohort includes five schools that were also funded by a 1995 MSAP grant and two locally funded magnets that had never before received federal support. All seven of the schools in the 1998 cohort are maintaining themes that had been established for them prior to the current grant period.

Because so few nonminority students live in the city, magnet programs would have minimal potential to reduce minority group isolation in District G schools were it not for recent state legislation (a response to a court decision) that facilitates voluntary interdistrict movement of students. The legislation aims to relieve school segregation arising from segregated residential patterns around the state's urban centers by creating interdistrict magnet schools that draw their students from both central city and suburban districts. These schools are supported by transportation and construction subsidies as well as a supplemental funding formula that provides incentives for the schools to draw students from multiple districts. The state magnet program has enabled District G to transform some of its schools into interdistrict magnets, using new resources to strengthen programs and add features attractive to both local and out-of-district students. Funds from the 1998 MSAP grant supported program improvement in four interdistrict magnets during the initial years of their transformation, as well as in three within-district magnets that might become interdistrict magnets in the future.

State Systemic Reform

Systemic reform in District G is driven by the state standards and accountability system. The state adopted its first set of content standards in the mid-1980s and has administered achievement tests in reading, writing, and mathematics to students in grades 4, 6, 8, and 10 for more than 10 years. The state also issues detailed guides to help schools align their curricula with the tests and prepare students to take them. Recently, in accordance with new legislation, the state has begun to use test results to identify its lowest-performing schools and assist them in improving their performance. Schools that do not improve their scores within a few years face possible sanctions (e.g., reconstitution).

The state published revised content standards in 1998, and revised assessments followed two years later. Consequently, the 1998-2001 MSAP grant coincided with a period of intense district activity to evaluate past practice, produce new standards and curricula aligned with state guidelines, and support teachers in implementing them. As will be explained below, MSAP schools were called upon to take the lead in the curriculum alignment process.

District Reform Initiatives

The influence of systemic reform in District G is pervasive. During the late 1990s, District G began implementing a number of measures intended to improve student achievement outcomes, including performance on state tests. After years without a common curriculum, the district recently produced K-12 frameworks aligned with state standards in a dozen areas ranging from language arts and mathematics to social development and technology. The district made the improvement of literacy a priority. This was an area in which the district performed at a noticeably lower level than nearby suburban districts and in which the district administration believed that previous efforts to

align classroom practice with the state standards and assessments had been unsuccessful. Administrators (as well as some teachers we interviewed) believed that districtwide curriculum standardization would ameliorate the effects of high student mobility within the district, and provide guidance for some teachers who otherwise would not adequately cover the curriculum.

In addition to systemic reforms orchestrated by the state department of education, District G participates in a nationally recognized comprehensive school reform program. The program focuses on the school governance structures and professional development needed to foster effective learning environments, particularly for poor urban children. School implementers of the model establish a site-based management team (composed of administrators, faculty, support staff, and parents) that sets academic, social, and community relations goals through a consensus process. The team coordinates all school activities, including the staff development necessary for implementing the program. In addition, each school forms a student support team (composed of teachers, administrators, psychologists, and support staff) that meets weekly to review and address the problems of particular students who have been brought to the attention of the committee by concerned teachers or other staff. Recently, the program model has added a curriculum alignment component designed to coordinate the efforts of teachers, administrators, district curriculum specialists, and technical experts to align school curricula with state and district content standards. The program's developers, in collaboration with specialists from the district's central office, provide training to participating school personnel in the theory and implementation of the model.

The district is in the process of re-implementing the program in many of its schools several years after an earlier version of the model fell into disuse. Re-implementation requires time, money, and the cooperation of school communities. The 1998 MSAP project puts the MSAP schools in the vanguard of this effort by providing new resources and committing the schools to specific timelines for establishing management teams, developing comprehensive school plans and curriculum alignment documents, identifying professional development needs, and creating and implementing standards-aligned innovative practices.

Like many districts, District G is also building its educational technology capacity through equipment purchases and training. The district's technology department has established a Web site that both enables and controls school computers' access to the Internet. It provides training and technical support for the district's schools. All of the MSAP schools include the infusion and implementation of technology among their program goals. The acquisition of computers is funded by a combination of MSAP and other funds, and managed by the district's purchasing system.

Project Characteristics

Overview

The 1998 grant in District G supports seven magnet schools, all of which are whole-school programs available to all magnet school students. Four of them (a middle school and three high schools) are interdistrict magnets that draw part of their enrollment from the suburbs. The remaining three (an elementary and two K-8 schools) are within-district magnet schools whose programs district officials characterize as good, but not yet strong enough to attract a substantial number of suburban students. The schools also vary in terms of how they draw students from within District G. Four of the schools (the three interdistrict high schools and the within-district elementary magnet

school) require all students to apply for admission and draw their District G students from throughout the district—that is, in relation to District G; they are “dedicated” magnet schools. The other three schools (the interdistrict middle school and the two within-district K-8 magnet schools) are “attendance zone” schools that draw most of their District G students from the neighborhoods in which they are located.

Features that characterize the MSAP project in its relationship to its state and local context include:

- State support for magnet schools.
- A districtwide commitment to comprehensive school reform and curriculum alignment with state standards.
- Infrastructure developed under previous MSAP grants.
- District policy to equalize access to school choice regardless of students’ and parents’ circumstances.

Three of the magnet programs integrate arts and academics while the themes of the other four schools include business and medical career preparation, character and leadership development, global studies, and a Micro-Society program. All of these themes were developed at least three years prior to the 1998 MSAP grant, and some have been in place for more than 20 years. During the 1998 MSAP project, all of the magnet schools are staffed by the same teachers who were already assigned to them. Two schools were assigned new principals at the beginning of the grant, but in each case the incoming principal already had ties to the school through previous teaching or administrative assignments.

The magnet schools are required to provide students with the district’s core curriculum, but are expected to do so in innovative ways that address the needs of diverse students and build on the school themes. In accordance with their site-based management model, the faculty is given a good deal of autonomy in writing new curriculum and deciding on professional development priorities

Resource teachers. *The MSAP grant also funds two or three resource teachers at each school who are specialists in the theme and/or technology. Acting as “extra hands” as well as specialists in the schools, they take on much of the additional work that the magnet programs require.*

within the framework of strengthening teachers’ ability to teach the core curriculum (particularly literacy). The MSAP grant also funds two or three resource teachers at each school who are specialists in the theme or in technology. Acting as “extra hands” as well as specialists in the schools, they take on much of the additional work that the magnet programs require—e.g., facilitating

curriculum alignment activities and the development of interdisciplinary projects, managing budgets, providing training (e.g., on technology use), liaising with partner institutions, arranging public performances and exhibitions of student work, and assembling data for evaluators.

District-Level Staffing

The MSAP grant supports several staff in the district office, most of whose time is devoted to the management of the district's complex choice system. Staff include a full-time magnet project director, a recruitment coordinator, two recruitment specialists, and two clerical staff. The magnet project director has worked in District G for nearly 30 years as a teacher, principal, magnet school principal, and program manager. This experience has provided him with detailed knowledge of the workings of the school system, the city's neighborhoods and suburbs, funding sources, and the demands of running a magnet school. He confers regularly with the district's superintendent and curriculum director about the needs and responsibilities of the magnet schools. Although the planning and implementation of the magnet programs in the schools are primarily the responsibility of the schools themselves, the director has played a major role in identifying key staff (e.g., principals and resource teachers), providing resources, and advising the magnet school principals. He also is an active advocate for the magnet schools within the district as well as at the state level.

Building upon management infrastructure developed under a 1995 MSAP grant, District G's district office staff coordinate publicity, applications, and selections for interdistrict magnets, within-district magnets, charter schools, a regional vocational school, and the district's two comprehensive high schools. In addition, once students have been assigned to the magnets, the district staff continue to support the magnet schools by facilitating the transfer of student records, resolving transportation issues, and helping staff and families to address problems that some students encounter in adjusting to their new schools.

The district MSAP budget (which accounts for more than a quarter of the total MSAP funding) also includes funds for technical assistance provided by the developers of the district's comprehensive school reform and curriculum alignment processes as well as for an external evaluator. The latter helped to develop the 1998 project and write the application.

Recruitment Issues and Strategies

Parents may apply for up to three schools of choice (including magnet schools), but ultimately are offered a place in only one (about 80 percent of parents get their first choice). They must accept or decline the offer of a particular school within a few weeks of being notified, at which point additional vacancies are filled from waiting lists. These lists vary in size (in 1998-99 they ranged from 2 to 538 students and averaged 223 students). They are discarded a few weeks after school opens each fall, requiring unsuccessful applicants who still wish to attend the school to reapply for the following year. This policy is intended to equalize students' chances of placement in a desired school regardless of their family's length of residence and their sophistication in dealing with the school system.

District G relies primarily on printed materials and face-to-face presentations to advertise its schools of choice. The magnet project director believes that the district has been effective in informing local parents about the options available to them. In addition, since most of the magnets have operated for several years, many residents have had time to become familiar with District G's special offerings. Familiarizing parents and students in nearly 20 neighboring districts with District G's magnets has proved more challenging. For instance, while the district is able to mail informational brochures (including application forms) directly to the homes of approximately

18,000 District G students in grades K through 10 each winter, they are not equipped to mail them to the homes of thousands of potential students in the surrounding districts. The project's recruiters do contact suburban administrators and counselors, and make presentations about the District G magnets to student assemblies held in suburban schools. Negotiating access to these events requires some effort, however, because suburban administrators are not always eager to provide families with information that may encourage them to enroll in District G. Other strategies for publicizing the magnet schools include sending brochures to all public and private schools, Head Start and day care programs, and suburban school districts; participating in city-wide magnet fairs; scheduling multiple open house days at each magnet school; newspaper and broadcast announcements; and maintaining information about the magnets on the district's Internet site.

During the early years of the 1998 grant period, the project's central office staff conducted most recruitment activities. In the final recruitment cycle, however, the magnet schools were asked to take a more active role in presenting their distinctive programs to potential applicants, particularly in the suburbs. It was hoped that this approach would boost application rates (which were not yielding sufficient numbers of nonminority students to allow most of the magnets to meet their desegregation targets). Although enrollment statistics suggest that the immediate results were not dramatic, school personnel reported that they had attracted some applicants and believe that the increased visibility the schools gained through their presentations (e.g., performances by students from the arts magnets) would attract more applications in the future.

Desegregation Plan and Objectives

This MSAP district is under court order to pursue an interdistrict remedy to disparity between urban schools that serve a minority group isolated population and suburban schools that serve a predominantly nonminority population. more than 85 percent of public school students in the district are minority, whereas more than 85 percent of students in the suburban districts are nonminority. As a component of the response to this court order, the district is seeking to reduce minority group isolation at seven MSAP funded schools. The percent minority enrollment in these schools for 1997-1998 ranged from 70 to 86 percent. Two of the three MSAP elementary schools recruit students from within the district, while the five other MSAP schools (one elementary, one middle, and three high schools) pursue interdistrict recruitment.

Three out of the seven schools, including two elementary and one high school, reduced minority

Reducing Minority Group Isolation. *Three out of the seven schools reduced minority isolation during the grant period. The remaining four did not make progress in reducing MGI.*

group isolation during the 1998 grant period. The decrease in percent minority enrollment in these three schools ranged from less than one percent to nine percent. In the other four schools, the percent minority enrollment rose, and the

increases exceeded the districtwide increase in percent minority enrollment. Therefore, none of the other four MSAP schools in this district are considered to have made progress in reducing minority

group isolation, although one of the four did register an increase in the number of nonminority students.^{30, 31}

The two major factors that impede the district's ability to reduce minority group isolation are the small pool of nonminority students in the district's public schools, and the highly restricted and narrowly tailored use of race to select nonminority students. The district tries to minimize the impact of these restrictions by targeting recruitment activities for some of the MSAP programs at surrounding districts with predominantly nonminority student populations. The MSAP high school that succeeded in reducing minority group isolation relied on interdistrict recruitment. more than one-third of its applicants were nonminority students. The five other schools engaged in interdistrict recruitment had lower proportions of nonminority applicants and did not succeed in reducing their minority group isolation.

In this district, the use of attendance zones *per se* does not appear to be a critical impediment to reducing minority group isolation. Two principals identified their schools as having attendance zones, including one of the elementary schools that succeeded in reducing minority group isolation. The principals at both schools using attendance zones (one elementary and one middle school) reported that less than half of their students were from the neighborhood area, suggesting that in these cases the preference given to students residing in the attendance zone did not greatly restrict the openings for nonresident students.

The Role of the MSAP Project in Supporting State Systemic Reform and Other District Initiatives

As explained earlier, District G's systemic reform efforts are driven by the state standards and accountability system and apply to both magnet and non-magnet schools. Teachers in all schools are required to follow the district curriculum, and during the grant period many schools in addition to the MSAP magnets began to reestablish the comprehensive school reform model. The MSAP-funded schools were recruited to pilot activities intended for later dissemination to a wider district audience. Thus, the implementation schedule outlined in the district's grant application called for magnet schools to organize school management teams and produce comprehensive school plans by the end of the first year.

In accordance with the district's priority of improving literacy, district staff decided that curriculum alignment in literacy would be a program focus in MSAP-funded schools during the first two years of the 1998 MSAP grant. At the elementary level, a group of ten schools that were involved in three reform programs (including MSAP) piloted the alignment activities. The main

³⁰ Whether or not a district with a required desegregation plan met the requirements set out in a court or agency order is not being assessed in this study. Compliance with a court order is determined by a court, not the Department of Education (likewise an agency determines compliance with an agency order). Therefore, if a court or agency deems a magnet school operation and enrollment to be in compliance with an order, the Department of Education will defer to that interpretation. See 1998 Magnet School Application Notice. (*See also 34 CFR 280.2(a)(1)*).

³¹ The district suggested that five of the seven magnets might be seen as making progress toward reducing minority group isolation because the most recently selected entering classes (i.e., grades K, 6, and 9 for elementary, middle, and high schools, respectively) contained a lower percentage of minority students than the percent minority enrollment for the entire school. However, that comparison does not show change. Moreover, comparison of the percentages of minority students at the entry grade levels in 1997-1998 and 2000-2001 only shows a "reduction" in the percent minority for two schools. In both of those schools the overall proportion of minority enrollment was reduced. In other words, focusing on changes for individual grades did not increase the number of schools credited with reducing minority group isolation.

thrust of this effort was to develop a series of curriculum-planning books and planning worksheets designed to help teachers write daily lesson plans aligned with language arts standards and assessments. In each school, a curriculum alignment facilitator was designated to receive ongoing training from the district staff, confer regularly with the principal about curriculum alignment in the school, and support colleagues as they implemented curriculum changes. In addition, the district curriculum department provided professional development for groups and individuals that addressed training needs that each had identified. By the third year of the grant, curriculum alignment activities in mathematics were also underway.

Standards- and assessment-driven curriculum alignment was also pursued at the secondary level. By the time of AIR's second visit to the district in spring 2001, central office curriculum specialists were producing monthly curriculum guides for language arts and mathematics for each middle school grade. These provided detailed schedules of topics to be covered each week, and gave special attention to areas of weakness that had been identified in the previous year's state assessment results. The central office also distributed sample lessons and supporting materials for classroom use, and the district curriculum directors met regularly with the teachers from each school to provide training in critical areas. At the high school level, the district standardized the curriculum less directly by instituting citywide midterms and finals in several subjects. These examinations incorporated tasks (e.g., extended mathematical problems and writing prompts) similar to those featured in the state's tenth-grade test.

Student Achievement

Like most MSAP-funded projects, District G's ties many of its student achievement objectives to scores on state-administered standardized assessments, particularly those in language arts and mathematics. The project's other achievement goals, which were to be assessed only in the third year of the grant, involved (1) the rates at which MSAP and non-MSAP students failed courses in academic subjects or were not promoted at the end of the school year, and (2) the rate at which students performed well on alternative assessments aligned with school themes. In 2001, however, the district reported having encountered difficulties in collecting data for the end-of-project objectives and indicated that information would be submitted in late 2002.³² Consequently, only student achievement outcomes related to the state tests could be evaluated at the end of the third grant year.

District G's state assessment-based objectives track (1) the performance of students in six MSAP-funded magnet schools relative to that of students in their comparison schools each year³³ and (2) the amount of improvement that MSAP and comparison schools made relative to their previous year's scores. Both sets of objectives call for minority and nonminority MSAP students' results to exceed those of their non-MSAP counterparts by a statistically significant amount. Two features of the state's testing regime have complicated this evaluation plan. First, because the state's elementary and middle school assessments are administered in the fall, it is not until the second year of the grant that test scores represent the performance of students who have received appreciable exposure to the magnet program improvements initiated under the grant. Second, during the grant

³² The project had been granted a nine-month extension to complete professional development and student recruitment activities at six of the magnet schools using unexpended funds remaining at the end of the original performance period.

³³ The district's evaluator selected one or two comparison schools for each MSAP-supported magnet school based on school size and demographic composition; some are district-supported magnets.

period, the state modified its assessments in ways that make it impossible to produce accurate estimates of growth by comparing 2000-2001 scores to those of earlier years. Consequently, District G is able to track improvement over time only between the baseline year (1997-1998) and the second year of the grant.

In the summer 2002 performance report, state assessment results for elementary and middle grade students are available for four MSAP magnet schools (two K-8 magnet schools, an elementary, and a middle school magnet).³⁴ In the third year of the grant, one of these MSAP schools outscored its comparison schools in all grades tested, but the other two schools outscored their comparison schools at only one of the tested grades. Most of these results were statistically significant for students overall as well as for minority students, but the numbers of nonminority students were too small to allow results to be statistically significant.

The state assesses high school students in reading, mathematics, and interdisciplinary skills each spring. The project compares the performances of its two highest-minority MSAP high schools to that of a comprehensive high school that enrolls virtually no nonminority students. In spring 2000, minority students in these two MSAP schools outscored their counterparts on all but one of the four tests that involved language arts, mathematics, and interdisciplinary skills. The district compares the performance of the third MSAP high school to that of a district-supported magnet that enrolls a similar proportion of nonminority students. The scores of these two schools did not differ significantly for either minority or nonminority students.

Mixed results. *The district conducts a longitudinal analysis of achievement gains. At the end of the third year of the grant, trend data were available only for the first two grant years. This study presents a mixed picture in which average performance increased in some grades and subjects but not in others, and magnet student progress was greater than that of comparison school students in some cases but not in others.*

The district also conducts a longitudinal analysis of gains in achievement over the years of the grant. At the end of the third year of the grant, trend data were available only for the first two grant years. This study presents a mixed picture in which average performance increased in some grades and subjects but not in

others, and magnet student progress was greater than that of comparison school students in some cases but not in others.

District G's student achievement reporting illustrates the difficulties that several MSAP grantees experienced in implementing the evaluation plans described in their applications. In this case, changes in the state assessment system and the scheduling of state tests limited the scope of change that could be measured within the three-year grant period. In addition, some of the non-MSAP schools chosen as comparison schools because of their demographic similarity to the MSAP magnets were *district-funded magnet* schools. Finally, the district evaluator undertook to collect other types of data—some from the district's student information system, some based on theme-based performance assessments that had to be identified or created during the grant—that proved difficult to collect.

³⁴ The seventh MSAP-funded school was excluded because it did not enroll fourth-grade students (the lowest grade tested by the state) until the last year of the grant.

Professional Development

Professional development is an integral part of District G's school reform program and is therefore also integral to the MSAP magnets. During the first year of the grant, each school developed a comprehensive plan that included a professional development component. Each faculty identified its own professional development needs in areas of current concern such as curriculum alignment, project-based instruction, literacy improvement, preparation for taking the state tests, subjects related to the magnet theme, the use of technology, effective instructional techniques (e.g., project-based instruction), and child development. Summaries of MSAP faculties' professional development activities indicate that all or nearly all teachers participated in district-provided workshops that addressed aligning curriculum with standards or preparing students for the state assessments. Schools sent only a few teachers to each of a variety of other activities (e.g., technology training, pedagogical methods, departmental meetings to plan curriculum), and schools that did not use a schoolwide or team approach to professional development sent single individuals to a variety of other activities, generally focused on subject-specific topics. Several teachers participated in a seminar program at a local university, where they attended a lecture series on academic subjects and developed elaborate curriculum units that are shared with other educators through an Internet-accessible electronic library.

Innovative Practices

Many of the instructional activities associated with the program themes (for example, interdisciplinary lesson planning and placement in medical internships) may be viewed as innovative. They are not necessarily viewed as such by the program participants because they are not entirely new to the schools (which have operated their magnet themes for some time). The magnet project director suggested that the most innovative practice adopted by the district during this grant cycle is the introduction of a registration office that coordinates the complex choice system operating in the district. He explained that this is an important innovation because it prevents parents from holding seats in more than one school while waiting to hear whether their children have been accepted by their most desired school. In the past, this practice has caused delays and duplication of effort in filling the vacant seats in magnet schools. Centralization of the process has also allowed him to enforce policies and provide staff support to ensure that all children (including those with special needs and those whose parents have little experience in dealing with the school system) are given equal access to opportunities to attend magnet schools.

School-Level Programs and Activities

This case study describes findings from site visits to District G in spring 2000 and spring 2001. These visits focused on the three high schools and one middle school that became interdistrict magnets with support from the MSAP grant. To provide a comparison for these schools, we also visited a high school and a middle school that did not have magnet programs.³⁵

³⁵ AIR selected comparison schools that had demographic compositions similar to the MSAP-supported magnet schools, but which did not operate magnet programs. Consequently, the comparison schools that we visited were not the same schools that the district evaluator uses as comparison schools for purposes of tracking student achievement objectives.

Overview of High Schools

District G operates seven high schools, all of which draw their students from throughout the city. Four of the high schools operate as interdistrict magnet schools that draw part of their enrollment from the suburbs. All have operated as magnet schools for at least five years (and two of them for well over 20 years.) Three of these interdistrict schools received MSAP funds during the 1998 grant cycle and are the subject of this case study. They, like all of the district's high schools, address the needs of a mixed population of high- and low-achieving students through a combination of basic, general, and honors-level academic classes. Magnet and non-magnet schools alike enroll special education students, and at the magnet schools they are integrated into the same activities in which other students are engaged.

The smallest of District G's high school magnets, **MSAP high school No. 1** has been in existence since 1993. It is located in a suburban neighborhood about a mile beyond the district boundary.

MSAP high school No. 2 has experienced dramatic changes over the past few years. It has operated as a relatively small magnet school since the 1980s, but in 1998, construction was completed on a new school building designed specifically to accommodate its specialized classes and to allow the enrollment to expand from 400 to 700 students. Located in the midst of major thoroughfares and parking lots in an urban renewal zone, the school is also within a few blocks of the downtown business district, hospitals, and medical and nursing schools that are integral to its career preparation focus. With its modernistic architecture and expensive new technology (including 600 computers for student use), this magnet school presents an impressive contrast to the older, more traditional facilities in which the district's other high schools are located.

MSAP high school No. 3 is located in the city's arts district close to galleries, theaters, museums, performance spaces, and a university campus, and some of its courses are taught by professional artists. It inhabits a conventional three-story school building dating from the 1950s. Although the building is well maintained, according to staff, it is not particularly well-suited to arts and performance classes, some of which are held in other arts facilities in the neighborhood. Hallway exhibits throughout the school demonstrate the artistic talents of the students and the variety of arts, academic, and interdisciplinary class projects in which they have participated.

The **comparison high school**, which serves about 1,400 students, is much larger than the MSAP schools. Its minority enrollment of 85 percent makes it the less minority group isolated of the district's two comprehensive high schools. It offers the full range of high school courses from advanced placement to special education, and is the only high school in the district that offers bilingual classes.

MSAP High School No. 1	MSAP High School No. 2
<p><i>MSAP School Theme:</i> Character First</p> <p>Grade Levels: 9–12</p> <p>Student Characteristics Number of Students: 190** Race-Ethnic Breakdown of Students:</p> <ul style="list-style-type: none"> • Hispanic: 15% • White: 12% • Black: 72% • Asian/Pacific Islander: 1% • Am. Indian/Alaska Native: 0% <p>Percent Free/Reduced-Price Lunches: 29%</p> <p>Teacher Characteristics Number of FTE Teachers: 14.7 Race-Ethnic Breakdown of Teachers:* Approximate percent minority: 30% 5+ Years of Teaching: NA Newly Hired: NA</p> <p>School and Neighborhood Characteristics</p> <ul style="list-style-type: none"> • Old, adequately maintained former private school • Suburban neighborhood just outside district line 	<p><i>MSAP School Theme:</i> Medical and Business Careers and Technology</p> <p>Grade Levels: 9–12</p> <p>Student Characteristics Number of Students: 710 Race-Ethnic Breakdown of Students:</p> <ul style="list-style-type: none"> • Hispanic: 22% • White: 14% • Black: 61% • Asian/Pacific Islander: 3% • Am. Indian/Alaska Native: 0% <p>Percent Free/Reduced-Price Lunches: 34%</p> <p>Teacher Characteristics Number of FTE Teachers: 51.6 Race-Ethnic Breakdown of Teachers:* Approximate percent minority: 39% 5+ Years of Teaching: NA Newly Hired: NA</p> <p>School and Neighborhood Characteristics</p> <ul style="list-style-type: none"> • New, state-of-the-art building • Downtown, near downtown businesses and hospitals, poor residential areas
MSAP High School No. 3	Comparison High School
<p><i>MSAP School Theme:</i> Arts and Humanities</p> <p>Grade Levels: 9–12</p> <p>Student Characteristics Number of Students: 380 Race-Ethnic Breakdown of Students:</p> <ul style="list-style-type: none"> • Hispanic: 18% • White: 27% • Black: 54% • Asian/Pacific Islander: 1% • Am. Indian/Alaska Native: 0% <p>Percent Free/Reduced-Price Lunches: 32%</p> <p>Teacher Characteristics Number of FTE Teachers: 37 Race-Ethnic Breakdown of Teachers:* Approximate percent minority: 28% 5+ Years of Teaching: NA Newly Hired: NA</p> <p>School and Neighborhood Characteristics</p> <ul style="list-style-type: none"> • Residential and commercial neighborhood near arts district and university area • 50-year old building, well-maintained, lacks modern arts facilities; some updating during grant period 	<p><i>School Theme:</i> None</p> <p>Grade Levels: 9–12</p> <p>Student Characteristics Number of Students: 1,370 Race-Ethnic Breakdown of Students:</p> <ul style="list-style-type: none"> • Hispanic: 42% • White: 14% • Black: 39% • Asian/Pacific Islander: 5% • Am. Indian/Alaska Native: 0% <p>Percent Free/Reduced-Price Lunches: 41%</p> <p>Teacher Characteristics Number of FTE Teachers: 101 Race-Ethnic Breakdown of Teachers:* Approximate percent minority: 34% 5+ Years of Teaching: NA Newly Hired: NA</p> <p>School and Neighborhood Characteristics</p> <ul style="list-style-type: none"> • 40-year old building, adequately maintained, renovations in progress • Middle income neighborhood and commercial area

* Staffing data for District G characterize teachers by minority status but not racial-ethnic group.

** Data are from 1999-2000 school year

Program, Themes, Goals

The three MSAP magnet high schools described in this case study are distinctive both in their very evident themes and extra resources, and because they are smaller than the traditional comprehensive high schools found in the city and its suburbs. The smallness of the schools, as well as their arrangements for reviewing and addressing the needs of individual students, are even more important selling points to some parents than their curricular emphases.

School themes

MSAP high school No. 1's theme centers on the development of character, self assurance, and leadership in its students. The principal says that the school is generally chosen because of its small classes (18-20 students), character education, and tough discipline. Its "Character First" program is based on a model developed several years ago in another state. The school maintains a relationship with the original program that includes training for some staff at the flagship school, on-site consulting by the program's developers, and opportunities for a few students to enroll for one school year in the flagship school. The school philosophy values "best effort over aptitude"—that is, character training is intended to teach students to persevere in the face of academic challenge.

The program has three basic tenets: attention, insight, and responsibility. Students are taught to pay attention and follow directions precisely; to develop and utilize critical thinking skills so they can understand what they are learning from every task, no matter how mundane; and to take responsibility for applying what they have learned. Teachers are required to infuse these concepts into all of their lessons. For instance we observed an English class in which the teacher asked students to discuss lessons about integrity and attitude that could be drawn from a poem they were reading together; science classes focused heavily on maintaining precision, discipline, and attentiveness during laboratory activities. The faculty has centered its curriculum improvement efforts on learning about and implementing ideas from Bloom's taxonomy and the theory of multiple intelligences in their lesson planning. One of the MSAP-funded resource teachers provides the training.³⁶

The program also builds a strong, supportive community around its members—both faculty and students—that insists on individual effort, teamwork and mutual responsibility, discipline, and respect. Displays on school walls reflect both the instructional focus on character building and an appreciation for individual students' accomplishments. While the hallways display students' artwork, most classrooms display posters bearing inspirational messages such as "Have a backbone, not a wishbone." Students are explicitly instructed to be their brothers' keepers, and faculty are encouraged to get to the root of behavioral problems and deal with them directly rather than refer them to a higher authority for disciplinary action. Committees of faculty and students rather than a single disciplinarian address many behavioral issues. Every classroom we visited shared an atmosphere of discipline and order.

³⁶ An understanding of Bloom's taxonomy would lead teachers to examine the intellectual skills that are tapped by their instruction and to ensure that students are called upon to use higher-order as well as lower-order thinking skills. An understanding of multiple intelligences would prompt them to design instruction that engaged a variety of students' intelligences—visual, musical, kinesthetic—in understanding and applying academic content.

MSAP high school No. 2, District G's health, business and technology magnet, offers two specialized courses of study—business and health—each of which emphasizes the use of technology. Students typically choose one or the other of these strands by the beginning of their junior year. Although the program prepares students for postsecondary education as well as entry-level jobs in their fields of interest, the specialized courses appeared to focus heavily on practical rather than theoretical issues, which will allow students to begin work directly out of high school. For example, the business strand offers a variety of courses such as business communications and desktop publishing.

Health-related learning. *Students interested in pursuing health-related careers enjoy a variety of learning opportunities. The school maintains a “hospital ward” in which students are familiarized with nearly every aspect of treatment. Students can also take courses in emergency medical services and CPR. Through a partnership with a local medical school, doctors and nurses come to the school to discuss the hospital environment and engage in hands-on seminars with students.*

Students interested in pursuing health-related careers enjoy a variety of learning opportunities. The school maintains a “hospital ward” in which students are familiarized with nearly every aspect of treatment. Students can also take courses in emergency medical services and CPR. A combination of federal and state magnet funds as well as in-kind contributions from the school's partner institutions have supplied the school with a wide array

of equipment including defibrillators, stethoscopes, vital signs monitors, examination tables, IV equipment, scalpels, forceps, and even an electron microscope. Through a partnership with a local medical school, doctors and nurses come to the school to discuss the hospital environment and engage in hands-on seminars with students.

MSAP high school No. 3, the district's arts and humanities high school, has been in existence for more than 20 years. According to district and school administrators, in the years leading up to 1998, the school had lost its academic focus, the arts courses had become dissociated from the rest of the school program, and the faculty was in turmoil. The strategy for revitalizing the school included assigning a new principal and engaging the entire faculty in strengthening the academic program, reexamining practice, integrating the arts with academic instruction, and a curriculum coordination effort within the English department. The examination of the school's curriculum has prompted several changes, including a systematic review of the school library's holdings in order to identify obsolete material and establish priorities for new acquisitions, a curriculum coordination effort within the English department in which all teachers at the same grade level use the same literature selections and include more classics in the reading list, the creation of a freshman reading course to bolster the skills of less prepared students, and a freshman study skills course. The school has also acquired new computers for a computer lab and distributed an older set among classrooms. One of the MSAP-supported resource teachers assists teachers in incorporating technology into their instruction.

High School No. 3 is not a pre-professional training school for aspiring artists; rather, it offers a full high school academic program (including advanced placement courses and some college-credited courses developed in collaboration with a local university), integrated with an arts program in which all students are required to participate. Arts are incorporated into the curriculum through

specialty courses as well as interdisciplinary lessons in regular academic classes. Seniors participate in a seminar course during which they produce a culminating project that integrates their academic and artistic experiences in a research paper and a performance or presentation before a faculty committee. The school offers programs in visual arts, music (instrumental and choral), dance, theater, and creative writing. All students must select a concentration area within which they take a four-year course sequence in addition to their academic courses. The school schedule is designed to allow long art classes and regular academic classes to run simultaneously throughout the day. Over the past few years, an increasing number of these projects have come to rely heavily on technology (e.g., word processing, Internet research, and PowerPoint presentations).

Infusing arts throughout the academic curriculum requires interdisciplinary collaborations between teachers who do not have common planning time during regular school hours. Consequently, the design and implementation of interdisciplinary units have tended to be special, rather than routine occurrences within any particular year. Over the entire grant period, however, many interdisciplinary units have been developed and added to teachers' repertoires, both through collaborations within the school and under the auspices of a university-based professional development program in which several of the magnet faculty participate. A few examples of such units include:

- A unit on the chemistry of materials used in etching.
- Exploration of art nouveau and principles of design in producing a poster advertising a school play set in the 1930s.
- Study of the internment of Japanese-Americans through primary and secondary sources including artistic productions of the period.
- Exploration of musical notation through use of mathematical manipulatives.

In addition, arts teachers have been called upon to incorporate writing, mathematics, science, and history into their courses.

Activities outside the classroom

Activities beyond the academic classroom in MSAP high school No. 1 are also integral to the school's character-building goals. All students are required to participate in a sport, a study hall, a debate club, or a cross-age tutoring program in a nearby elementary school. These activities are scheduled during an extra period at the end of the day, which makes for an unusually long school day that keeps the students engaged in the school community when other high school students engage in unsupervised after-school pursuits.

In MSAP high school No. 2, seniors are placed in internships in local hospitals, where they assist in various aspects of patient care. The school principal stated that as a result of their internships, many students have developed a strong interest in medical science and have gained critical knowledge as a first step toward careers in medicine.

MSAP high school No. 3's art classes, clubs, and special events provide students with many opportunities to develop their skills and express themselves. Every year, for example, the theater department puts on several dramatic productions in the school's auditorium. These are advertised

throughout the community (through posters produced by the visual arts department) and presented both to community audiences and to classes within the school. Visual arts students participate in local exhibitions and competitions. Similarly, the music faculty arranges for the school's instrumentalists and singers to participate in a variety of public performances in addition to their music classes. The creative writing department publishes and sells collections of students' poetry, other writings, and illustrations each year. Finally, each year the art departments collaborate to produce a CD featuring the performances of several of the school's musical ensembles, choruses and soloists. The visual arts department produces cover art for the CD.

School Instruction and Activities

Salience of the state assessment in instruction

Because the district coordinates curriculum across schools and emphasizes instructional tasks similar to those that students will encounter on the state assessment, core academic classes that AIR

Teaching to the state test. *Even in lessons that incorporate magnet theme elements, the demands of the state test are much in evidence. Since the test is intended to tap higher-order thinking skills (e.g., students turn in written responses rather than scannable answer sheets), most of the faculty AIR interviewed said that teaching to the test (and state standards) encourages good teaching.*

observed in the magnet and comparison high schools had much in common. This may have been especially true during the times we visited the district, about a month before the state test was to be administered. The following examples demonstrate that even in lessons that incorporate magnet theme elements, the demands of the

state test are much in evidence. Because the test is intended to tap higher-order thinking skills (e.g., students turn in written responses rather than scannable answer sheets), most of the faculty AIR interviewed said that teaching to the test (and state standards) encourages good teaching.

At the Character First magnet, a ninth-grade language arts class worked on an editing assignment to prepare for the spelling and grammar section of the state assessment. As homework, they had written essays in response to Maya Angelou's *I Know Why the Caged Bird Sings*. In the class, the essays of individual students were viewed on an overhead projector and critiqued sentence by sentence by the teacher and other students.

In the arts and humanities high school, ninth-grade geometry students worked in pairs on a series of word problems about bicycle wheels that required them to apply their knowledge about relationships among radii, circumferences, and areas of circles. The problems were practice items drawn from an earlier version of the state's tenth-grade test. Although nothing in this lesson utilized the school's arts theme, earlier in the year the mathematics teacher had collaborated with a visual arts colleague on a geometrical design unit whose results decorated the walls of the classroom.

In an advanced algebra class at the comparison school, the topic of the day was exponential growth and decay. The teacher kept the students engaged in the material, partly by randomly calling on them to answer questions. While the class worked together to graph the functions on graphing calculators, the teacher frequently referred back to previous lessons and reminded students how this lesson would prepare them for the state's standardized test.

In addition to incorporating exercises that familiarized students with the content and format of the state test, all of the schools (including the comparison school) ran a Saturday test preparation class for students in need of additional support.

Infusion of technology

One area in which the magnet high schools differ noticeably from the comparison school is in the amount of technology available for student use and the incorporation of technology into instruction. The magnet schools are better equipped with technology than the non-MSAP school, and faculties are under more pressure to become proficient users of technology for instruction and recordkeeping. This is most obviously the case in the medical and business careers magnet, where computers are a core element of the theme. Teachers of the academic courses reported that they had incorporated more technology into their instruction, and this was borne out in AIR's classroom observations. For instance, several classrooms were equipped with 25 computers, and students used word processing and presentation programs to complete writing assignments and reports. The following example shows how the school's theme and technology came into play.

In accordance with the school's medical theme, teachers reported that many language arts assignments involved technical and medical writing. In a college English class, students worked in pairs to generate interview questions and answers for one of the characters ("patients") in Ken Kesey's *One Flew Over the Cuckoo's Nest*. Later, students would use the interview results to produce a report on the patient—a diagnosis, a suggested treatment, and a prognosis—intended for the "nurse" in the novel. Students were to use at least 10 of the words from their psychology glossary in the report and to complete the assignment on one of the classroom computers.

Real-world learning. One class in the business strand operates a publishing service in the school's office technology room. It is run like a regular business: students must interview for jobs there and are responsible for taking orders, scheduling the work, and maintaining a budget. Services and products offered to clients (primarily the school's faculty) include word processing, photocopying, and production of report covers, business cards and letterhead, and the school newspaper.

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photocopying, and production of report covers, business cards and letterhead, and the school newspaper. A supervising faculty member participates in, but does not dictate, the business activities.

An advanced algebra lesson featured an in-class problem that used a business scenario about ticket sales as the basis for learning about profit, revenues, and expenses. Students were given a function expressing the relationship between sales and profits. They worked in groups, using graphing calculators and electronic spreadsheets to find answers to a series of questions involving numbers of tickets sold and amounts of profit. In presenting their findings, students were required to describe the steps they had taken in solving the problems.

The Character First magnet concentrates many of its new computers and other technology in a Literacy Lab, which provides students with a place to improve their reading, writing, and research skills both independently and under the guidance of the staff. AIR observed the literacy lab being used by a U.S. history and government class. Students worked in pairs on the lab's 25 computers to conduct web searches on famous men and women for a project on leadership.

In the arts and humanities magnet, computers purchased for the school's computer lab under the previous grant have been dispersed two to a classroom. The classroom computers are intended to enable teachers to use technology for a variety of personal purposes (e.g., recordkeeping, document production) as well as to enhance students' access to computers for in-class work. The dispersion has freed space in the computer lab for a more powerful generation of hardware and software that students need for graphics, desktop publishing, and other instructional purposes.

At the comparison school, technology is less in evidence, though not entirely absent. Several mathematics classes we visited used graphing calculators, but lacked computers and so did not incorporate the use of spreadsheets into classroom instruction. We observed that fewer computers were available to students throughout the school, and many of the rooms appeared not to have functional overhead projectors.

Impact of school size

Small schools. *One of the distinctive features of the magnet schools is their relatively small size. This, in combination with the characteristics of the mix of students who attend them, has several consequences for the quality of the educational experiences at the magnet schools.*

As stated earlier, one of the distinctive features of the magnet schools is their relatively small size. This, in combination with the characteristics of the mix of students who attend them, has several consequences for the quality of the educational experiences at the magnet schools. First, students have a greater opportunity to be personally known by the faculty. For instance, teachers at the

Character First high school reported knowing all of the 36 graduating seniors, and the school's 200 students meet once a week for an all-school meeting in the school cafeteria. At the arts high school, the faculty meet each spring to discuss the performance of all the students and recommend the courses that they should take the following year.

Second, student disciplinary problems and risk factors seem less salient in the magnet schools than in the comparison school. For example, although security personnel are in evidence in most of the schools, only the comparison school requires its students to pass through a metal detector on their way into the building, the legacy of a shooting that took place in the school many years ago. At the magnet schools, student behavior is also an issue, but seems to be addressed as part of the curriculum. This is particularly evident at the Character First high school, where a strict code of conduct is enforced and the curriculum focuses on teaching students to take responsibility for their own and each others' behavior. At the arts and career preparation high schools, faculty reviewed behavioral issues during the first year of the grant and instituted a social development course for ninth and tenth-grade students to better prepare them for the demands of high school.

Third, it appears that the magnet schools may be more successful in integrating their diverse students into the life of the school than the comprehensive high school. Staff at the arts and career

Integrating students. *The magnet schools may be more successful in integrating their diverse students into the life of the school than the comprehensive high schools. Staff at the arts and career magnets reported that their schools had no need to make a special effort to foster inter-ethnic harmony because students are united in their common interests and work well together on group projects. Teachers at the Character First magnet commented that relations among their students are characterized by respect and mutual responsibility.*

magnets reported that their schools had no need to make a special effort to foster interethnic harmony because students are united in their common interests and work well together on group projects. Teachers at the Character First magnet commented that relations among their students are characterized by respect and mutual responsibility. At the comparison school, however, students and faculty reported a noticeable

separation between the Latino students, who composed 53 percent of the student body, and the nonminority students, who composed about 15 percent. Language differences contributed to this situation: the comparison school has the district's largest concentration of limited English proficient students and offers the only bilingual classes in the district (about nine percent of the school's population was enrolled in them). Few or no limited English proficient students have enrolled in the magnet high schools, and any who have are integrated into regular courses with additional tutoring help provided as needed.

Finally, perhaps due to a combination of fewer students and an explicit commitment to equity, advanced classes in the magnet schools were more diverse than in the larger high school, and higher-level courses we observed contained both minority and nonminority students. By contrast, it appeared that in the comparison school, minority students filled the low- to mid-level classes while the high-level and AP courses were filled predominantly by nonminority students.

Overview of Middle Schools

MSAP middle school No. 1 (serving grades 5-8) is a member of a middle school reform network and has been an arts magnet drawing students exclusively from District G for about 20 years. During the 1998 grant period, it has become an interdistrict magnet that draws a quarter of its students from the suburbs and its District G students from a local attendance zone. It is currently housed in a conventional and adequately maintained building located in a working-class neighborhood near a shopping mall. In the year following the grant, however, it will move into a brand new building designed specifically to accommodate its arts programs. The move will take the school out of its current attendance zone, and in the future it will draw its District G students from throughout the district.

The **comparison middle school** is located in a low-income residential and commercial neighborhood adjacent to an industrial area. It occupies a Depression-era building on the verge of being closed for a total renovation. District officials believe that by virtue of its location, even with a compelling magnet theme, this school could not attract students from the wider community. Consequently, supplemental funding for school improvement must be sought from sources other than magnet schools grants.

Like the MSAP middle school, the comparison school is implementing the district’s comprehensive school reform program. At the time of AIR’s second visit, the school also had received special state funds to help it remedy its students’ poor test scores. A primary use of the funds was to release a veteran teacher in the school to spend time supporting six new teachers in their first attempts to provide standards based curriculum to struggling students.

As is the case with the high schools, the MSAP middle school and comparison schools differ in size (the comparison school enrolls half again as many students as the magnet) and in the salience of student problems such as students’ transiency, poverty, lack of preparation to learn, poor health, parent noninvolvement, and student apathy.

MSAP Middle School No. 1	Comparison Middle School
<p><i>MSAP School Theme:</i> Arts Grade Levels: 5–8 Student Characteristics Number of Students: 510** Race-Ethnic Breakdown of Students:</p> <ul style="list-style-type: none"> • Hispanic: 20% • White: 18% • Black: 58% • Asian/Pacific Islander: 4% • Am. Indian/Alaska Native: 0% <p>Percent Free/Reduced-Price Lunches: 61%</p> <p>Teacher Characteristics Number of FTE Teachers: 40 Race-Ethnic Breakdown of Teachers: * Approximate percent minority: 26% 5+ Years of Teaching: NA Newly Hired: NA</p> <p>School and Neighborhood Characteristics</p> <ul style="list-style-type: none"> • 50-year old building with some modifications for arts, pending move to new, state-of-the-art building • Mixed moderate and low-income neighborhoods and commercial area 	<p><i>School Theme:</i> None Grade Levels: 5–8 Student Characteristics Number of Students: 810 Race-Ethnic Breakdown of Students:</p> <ul style="list-style-type: none"> • Hispanic: 62% • White: 5% • Black: 31% • Asian/Pacific Islander: 1% • Am. Indian/Alaska Native: 0% <p>Percent Free/Reduced-Price Lunches: 75%</p> <p>Teacher Characteristics Number of FTE Teachers: 62 Race-Ethnic Breakdown of Teachers: * Approximate percent minority: 32% 5+ Years of Teaching: NA Newly Hired: NA</p> <p><i>School and Neighborhood Characteristics</i></p> <ul style="list-style-type: none"> • 70-year old building, minimally maintained pending total remodel • Low-income neighborhood and commercial area

* Staffing data for District G characterize teachers by minority status but not racial-ethnic group.

** Data are from 1999-2000 school year

Program, Themes, Goals

Integration of theme

Several district and school personnel reported that in the years leading up to the 1998 grant, MSAP middle school No. 1 had lost direction and suffered from discord among the faculty over, among other things, the role of the arts in the school (one administrator commented that the “arts tail had come to wag the dog” in the school, and the academic program had suffered). In 1998, a new principal was named to lead the school through a period of redefinition and curriculum planning. She is credited with helping the faculty to collaborate in reexamining its practice and building a more balanced arts and academics program.

“Artademics.” MSAP middle school No. 1’s magnet theme is “artademics”—that is, the integration of arts with a core academic program. As in the arts and humanities high school, students in the magnet middle school are exposed to the arts through a combination of elective classes and academic courses in which the arts have been

MSAP middle school No. 1’s magnet theme is “artademics”—that is, the integration of arts with a core academic program. As in the arts and humanities high school, students in the magnet middle school are exposed to the arts through a combination of elective classes and academic courses in which the arts have been integrated.

One of the two MSAP-funded positions is an arts resource teacher. She helps to manage the arts activities, artists-in-residence program, and publicity, and also facilitates collaborations between arts and academics faculty. The other MSAP-funded position in the school is a veteran faculty member who helps his colleagues plan and coordinate curriculum around multimedia.

As at the arts and humanities high school, collaborations between arts and academics teachers are complicated by a lack of common planning time, but they do occur. During the first year of the MSAP grant, the school’s librarian and media specialist worked with faculty to create a curriculum map (i.e., the schedule of topics covered) for the core subjects at all grade levels. The librarian used the map to establish priorities for purchasing print and multimedia resources for the school’s library and computer center. The visual arts teacher used it to plan complementary art projects appropriate to each grade level (the multiyear arts program moves students from basic to more sophisticated methods and media over time). For instance, there are “stained glass” projects associated with the Middle Ages, mosaic masks and clay statues associated with MesoAmerica, and brightly painted portraits of tropical birds associated with a study of rain forests. Several teachers in academic subjects had also infused arts into their lessons. For instance, two eighth-grade teachers had collaborated to develop an elaborate moot court project that combined theater with language arts and history.

Activities outside the classroom

As is the case in the MSAP high schools, the principal, arts faculty, and arts resource teacher in the MSAP middle school devote substantial time and energy to arranging opportunities for the students to perform and exhibit in the community beyond the school. For instance, the school band regularly participates in a St. Patrick’s Day parade and competition (which it regularly wins), the boys’ modern dance team performed at a city event, and an exhibit of photographs from the school’s photography class was exhibited in the district office. Within the school, the arts focus of the school can hardly be missed, especially in the spring, when a year’s worth of projects—masks, models, murals, posters, illustrated essays, photographs, and more—crowd the hallways.

Technology

The MSAP grant has enabled the MSAP middle school to buy arts-related equipment such as new musical instruments (the first purchased in 20 years), cameras, color printers and copiers, and art books and multimedia for the school library. The principal also added the use of technology to the school’s programmatic agenda, pushing to acquire and deploy the best computers available and to have teachers trained to use them effectively. The MSAP-funded veteran faculty member has also become the in-house expert on technical issues such as computer repair and networking.

The comparison school is not devoid of art classes or ingenious teachers, but it presents a stark contrast to the magnet school in terms of resources and focus. While the magnet school's technology resource teacher worried that the district procurement office might not attend to his request for fast, high-capacity machines and the latest graphics programs (rather than just new computers) for his middle school students, the comparison school's student computers were old machines dedicated to running Josten's computer-assisted curriculum modules of which only the reading and mathematics series were considered sufficiently current to be useful. We were told that an infusion of new computers would be a mixed blessing, as the old programs would not run on them and the school would be obliged to find additional funds to buy new software.

School Instruction and Activities

District influence

In both schools, instruction in language arts and mathematics is heavily influenced by the agenda of the district's curriculum department. Each month the district provides the middle school teachers in these subjects with a schedule of topics to be covered each week and even distributes classroom materials in some cases. Teachers have some discretion in how they implement the curriculum, but even so there are obvious similarities between schools. During AIR's school visits, the cross-school scheduling of topics was quite evident. For instance, in both the magnet and comparison classrooms, we observed teachers working with students on writing and editing assignments, explicitly discussing aspects of the scoring rubric that would be used to evaluate their performances on the state test. During one visit to District G, the middle schools were engaged in a unit on probability. In both middle schools we observed students recording the results of coin tosses, dice throws, and random draws from a deck of cards, and writing expressions for the probability that particular outcomes would occur. Language arts and mathematics classrooms in both schools contained similar posters on problem-solving and content-related topics. The following is an example of how one magnet school mathematics class infused arts into a unit on measurement.

Heterogeneous grouping of students is a basic tenet of the school reform policy adopted by the district and a topic of professional development. In both middle schools, many classes served a mixed-ability grouping of students, but there were exceptions. In District G, middle school students take both a language arts and a reading class, but students who have done well on the state tests are scheduled into a foreign language in lieu of reading. Also, both schools operated middle school algebra classes that served a select (but diverse) group of students. It appeared that the pressure for improvement on the state tests was undermining this practice, however. In both schools, we learned that in an effort to improve student performances in language arts and mathematics, students would be assigned to more homogeneously grouped ("leveled") classes in the future.

Classroom activities

At the MSAP middle school the school day is structured to allow the simultaneous operation of one-period academic courses and two-period arts classes. Fifth-grade students take a “sampler”

Arts education. *Fifth-grade students take a “sampler” course that exposes them to each of the school’s arts programs—visual arts, dance, theater, and music. At the end of this course, they choose an arts focus that they will pursue for the rest of their time at the middle school. Part of the time in the focus classes is spent in academic explorations of the subject and part in performing the art.*

course that exposes them to each of the school’s arts programs—visual arts, dance, theater, and music. At the end of this course, they choose an arts focus that they will pursue for the rest of their time at the middle school. Part of the time in the focus classes is spent in academic explorations of the subject (e.g., studying music theory, writing

assignments about artists) and part in performing the art. In addition to their concentration classes, students take a multi-arts survey course throughout their years at the school.

Following is an example of how the magnet middle school mathematics class infused arts into a unit on measurement. The mathematics teacher and two special education teachers had combined their classes to team-teach fifth-grade mathematics. The mathematics teacher reviewed a lesson on liquid measures from the previous day and pointed out the collection of gallon jugs, milk containers, and measuring cups at the front of the classroom that students had used to explore the numerical relationships among their volumes. He reminded the class of how he used graphics to demonstrate the relationship between quarts and gallons (four small Qs written inside a large G). The task for the day was for the students to adopt the role of a graphic artist creating instructional posters on volume measures for a teacher. They were to choose their own measures, state in their own words how the measures were related, and create a bold, colorful design with a good title that reflected the information in the poster. As the students wrote and drew at their desks, all three teachers worked intensively with a few students who needed help in understanding the task.

The visual arts class AIR observed at the magnet school was crowded with art books and supplies for painting and sculpting in a variety of media and the teacher used the school’s curriculum map to create art projects that complemented content area instruction in other subjects. By contrast, the comparison school art teacher prided herself on collecting cut-down corrugated cardboard boxes—free supplies that allowed her to save money on paper so she could spend more on paint. She reported an occasional collaboration with a science or social studies teacher, but for the most part her classroom was a world unto itself.

Summary

District G, an urban district with a high minority enrollment, has used magnet schools to attempt to reduce minority group isolation in its schools for more than two decades. During that history, it has used four MSAP grants to establish new magnet programs and enhance preexisting ones at all grade levels. Recent state policy encouraging voluntary interdistrict movement of students to reduce school segregation has provided the district with a new opportunity to improve some of its schools by transforming them into interdistrict magnets.

The 1998-2001 MSAP grant supports school improvement efforts in four interdistrict magnet schools and three within-district magnet schools that may become interdistrict schools in the future. MSAP funds are being used to operate the district's multifaceted school choice system; enhance theme-based offerings, technology, and curriculum materials of the magnet schools; and support the district's systemic reform priorities—curriculum alignment with state standards, improving literacy, and establishing a comprehensive school reform model featuring site-based management.

In all four of the MSAP-funded schools in this case study, faculty had come together to reexamine their programs and practices. They had developed theme-related curricula while orienting much of their instruction to topics and skills emphasized on the state's assessments. According to administrators and teachers, there was little tension between magnet program goals and systemic reform requirements because the goals of the magnet programs *included* implementing the district's reforms. As might be expected in departmentalized secondary schools, much of the thematic development in the three schools that had subject-area themes occurred in special courses related to the theme (e.g., arts and preparation for business and medical careers). The infusion of thematic elements into instruction in academic courses (e.g., through interdisciplinary projects) also occurred where individual teachers were willing to invest the necessary time and effort to do so. The fourth school's character development theme was evident in some curricular choices (e.g., writing assignment and discussion topics around leadership, self-understanding, and ethics) as well as in the disciplined learning environment created around the students.

Benefits

MSAP funds have benefited District G's desegregation and school improvement efforts in a variety of ways. At the district level, they have supported the development of management structures for coordinating the recruitment and placement of students in its complex array of schools of choice. This has simplified the choice process for families, reduced the demands on school personnel for managing applications and selections, and allowed final placement decisions to be made sooner than was the case when the process was decentralized. In addition, centralization has allowed the district to enforce its policy of equitable access for all the district's students to the magnet schools and to adjust quickly to changing federal policies (e.g., the revision of its selection criteria to meet federal "narrow tailoring" requirements). District G supports several other school districts in their efforts to develop MSAP projects and to implement effective lottery systems for student placement.

The resource teachers whose positions were funded by the MSAP grant were a significant benefit to their schools in that they provided technical expertise, enthusiasm, and additional hands to do the work of the magnets. Because they taught few or no classes during the day, they were able to contribute significantly to planning and coordination activities (e.g., assembling curriculum alignment materials, facilitating the development of interdisciplinary collaborations) in a way that regular faculty could not.

MSAP funds helped to support school improvement efforts by providing faculty with time and resources needed to reflect and plan together, as well as to pursue training opportunities related to curriculum reform, effective teaching practices, and magnet theme development. For example, the magnet schools were able to institute regular meetings of teachers in particular subject areas or grade levels to engage in coordination of curriculum and review of instructional materials.

Substitute teachers were hired to allow magnet school teachers to attend in-service training (e.g., a multi-day seminar on project-based learning).

Finally, MSAP support enabled the schools to acquire new equipment and materials and support special activities. Acquisitions such as the latest generation of computers and multimedia resources, medical equipment, cameras, musical instruments, and art books not only enriched the instruction provided to students, but also provided impressive evidence of the specialness of the magnet schools to the parents of potential new students. Similarly, the organization of public exhibitions and performances by magnet students allowed the students to pursue interests and develop their talents while at the same time advertising the school to a wide audience.

Challenges

One challenge currently facing the district's magnet project is their underdeveloped ability to recruit students from the suburbs in numbers sufficient to meet desegregation goals. During the 1998 grant, this was particularly true for the career preparation magnet, whose sudden increase in capacity resulted in a need for more suburban students than the district could attract. As suggested in the section on recruitment, District G magnets are not yet well known in the suburbs and the district does not have the same direct access to suburban families as it does to its resident families.

The use of a lottery-based selection system does not allow the district to capitalize on the full number of nonminority students that apply to the magnet schools. While such systems foster equity of access for applicants, they may prevent schools from meeting their desegregation objectives. In terms of meeting desegregation objectives, the Character First theme has proved problematic because it seems to have a particularly strong appeal for the parents of minority students. While it addresses the desires of a particular segment of the region's population, this theme may have limited potential to promote school desegregation. It is too early to reach a firm conclusion on this issue; however, the Character First School has only been in existence for a few years. It has not had a chance to become widely known throughout the region, although it has drawn visitors from other districts interested in establishing similar programs.

Teachers vary in their degree of enthusiasm for, and willingness to contribute extra effort to, supporting magnet themes. Lack of buy-in is reflected in the difficulty some schools experience in developing cross-disciplinary lesson plans in academic courses. It should be noted, however, that particularly in middle and high schools, where students take several classes, including some that are theme-specific, school leaders suggested that participation by the entire faculty, although desirable, is not crucial to making a magnet student's day a rich and unusual learning experience.

Lessons Learned

District G's 1998-2001 MSAP project reflects lessons that it has learned through decades of experience in developing magnet schools. As has been explained earlier, the district has sought to limit the uncertainties inherent in a system in which parents compete for a limited number of positions in a network of desirable schools by developing centralized management structures. It has also integrated its MSAP project within its long-term agenda for school improvement and systemic reform—for example, building comprehensive school reform elements into the implementation plans for each of its MSAP magnets. Recognizing that some of its schools have less potential than

others for attracting students from outside their neighborhoods, the district attempts to obtain funding from other sources for them rather than developing magnet programs in them. Thus, magnet school funding is only one part of a larger plan for supporting and improving schools in District G.

The district has maintained and refined its magnet school themes over many years rather than introducing a succession of different themes. (Each of the magnet schools in the 1998 MSAP cohort

***Consistent themes.** District G has maintained its magnet school themes over the years. The stable themes have permitted the magnet schools to build on past successes and to develop pools of potential applicants among families who have become familiar with them over time.*

had a theme that had been in place at least since 1995.) From a marketing perspective, schools with stable themes have a chance to develop pools of potential applicants among families who have become

familiar with them over time. From a curriculum development perspective, maintaining established themes permits schools to build on past successes and learn from past failures.

The district has also chosen to retain staff already working in the schools rather than recruiting large numbers of new faculty at the beginning of each grant. Although this policy may increase the difficulty of obtaining full commitment to the magnet program by “inherited” faculty members, it builds on and supports preexisting professional communities. To the extent possible, the district has taken the strength and interest of school communities into account in deciding which of its schools will be included in its magnet school initiatives.

Plans for the Future

Since the end of the 1998-2001 MSAP grant, the magnet programs in the seven schools in the 1998 cohort have continued in operation using state and district funds. The district is expanding its collection of interdistrict magnets to include additional elementary, middle, and high schools. Some of these schools were already operating magnet programs while others are developing them now. In 2001, District G was awarded a new three-year MSAP grant, which it is using to develop or revise magnet themes in six preexisting schools and to open an entirely new magnet high school devoted to marketing and retail sales. In addition, the district is involved in a project to create small school communities within its two comprehensive high schools.

Case Study, District H

District Context

Location and Size

District H is located in a major metropolitan area in the Northeast in one of the nation's most diverse areas, with more than 120 countries represented and more than 98 languages spoken (e.g., Spanish, Arabic, Korean, Chinese, Farsi, Creole, Greek, Italian, Russian, Urdu and Hindi). Due to the economic and communication needs of this largely immigrant population, similar ethnic groups tend to be located in particular areas of the district and are therefore ethnically isolated. Thus, the district's voluntary desegregation objective for magnet schools is to reduce minority isolation; however, overcrowding within the district does not allow for movement between schools, making it difficult for the district to meet its desegregation objectives.

Student Composition

In 1999-2000 the student population in District H was 16 percent white, 13 percent black, 48 percent Hispanic, 20 percent Asian, and 3 percent Pacific Islander, Alaskan Native and Native American. Approximately 25 percent of the student population is limited English proficient. The district has 22 elementary schools and 7 intermediate schools that house approximately 28,000 students. It does not operate any high schools.

Magnet School History

The district received its first MSAP grant in 1991. Two current magnet schools were also funded during the 1993-1995 grant cycle. A total of 10 magnet schools were added to the existing magnet program as a result of the 1998 MSAP award, resulting in a total of 20 magnet schools (MSAP and non-MSAP) in the district. District H has redesigned the programs in these schools with new curricular themes and has attempted to access the vast resources and partnering opportunities in the metropolitan area to support its efforts.

State Systemic Reform and District Reform Initiatives

For elementary and middle schools, student achievement for English language arts and Mathematics are the subject areas assessed by the state (in grades 4-8). Curriculum frameworks, performance criteria and technology literacy standards have been developed by the state, which are supported by the district's thematic curriculum development.

Achievement standards have been established that outline performance expectations for each grade level. Student achievement in English language arts and mathematics are the subject areas assessed by the metropolitan area in grades 3, 5, 6 and 7. A number of school staff said they believe that tests are given too much emphasis and have become overwhelming for both students and staff. The district requires that the achievement standards be displayed throughout each school and in all classrooms, and, to varying degrees, all schools visited follow this mandate.

Reform initiatives in District H include the Urban Systemic Initiative, Even Start, Superstart Plus, and the CIMS mathematics management program. Another major reform effort is the district's

focus on reading improvement, which was evident on the site visits to MSAP and non-MSAP schools. The district also uses report cards to monitor and report student progress in its schools, as measured by city and statewide test scores and other factors such as attendance and suspension rates, school expenditures, and experience and credentials of teachers. Staff in some schools feel that the school report card can be an unfair and inaccurate representation of a school's progress. The report card is seen as comparing students in all schools to one standard despite resource disparities between schools and the larger number of students with learning challenges in low-income districts. One school administrator of a comparison school stated, "It is unfair to compare my school to a more affluent nonminority school that has only 50 of its kindergarten students *unable* to speak English, compared to my school in which only 50 of my kindergarten students are *able* to speak English. I have a much greater teaching challenge than they do, yet we are compared to the same standards."

Project Characteristics

Overview

All of the 10³⁷ MSAP-funded schools serve kindergarten through fifth-grade. Five of the schools include other grades: one school has sixth-grade, another school has sixth through eighth-grades, and three schools include pre-kindergarten. All of the magnet schools operate whole school programs, which are available to all students. magnet themes include: core knowledge; whole language and telecommunications; business and technology; law, government and american citizenship; authors and illustrators; interdisciplinary learning; expressive arts; global studies; and theater arts and technology.

Features that characterize the MSAP Project and its role in the school district include:

- A district policy of allocating resources, including MSAP funds, as widely and equitably as possible throughout the district.
- Responsibility at the school level for developing and implementing the theme.
- Overcrowded schools and limited mobility.

The district office determines which schools will be funded by each new magnet grant, and typically selects a set of schools that have not previously received magnet funds (although two of the schools in the 1998 grant were funded in the previous grant). The MSAP project director stated that the district chose this funding process to ensure that the maximum number of schools have the opportunity to become a magnet school. The project director also stated that former magnet schools receive preference for other theme-related funding provided by the district, state, private, or other philanthropic entities. For example, an arts grant was awarded to a former magnet school that had a similar theme. According to the project director, the superintendent is very supportive of the magnet program and its sustainability—his motto is, "Once a magnet school, always a magnet school."

Although the decision about which schools will receive MSAP funds is made at the district level, the schools are responsible for designing and implementing their own themes. According to

³⁷ One of the K-5 elementary magnet schools was under construction in 1999-2000 and was in operation the following year.

the project director, the district practices a “bottom-up” approach in implementing magnet themes and places the responsibility for infusing the magnet theme on the school. Each school has a magnet school design team responsible for ensuring that the magnet theme is reflected in the curriculum and a leadership team that is responsible for finding ways to meet district requirements. Because decisions about magnet schools are so centered at the individual school level, the articulation between the elementary and middle magnet schools is somewhat lacking. Several school staff at some of the elementary magnet schools visited expressed their concern for their students’ inability to further the magnet-related skills they have developed once they leave the school. Students are assigned to schools based on their residence, which makes it highly likely that students will not be placed in a school with a similar magnet theme, or in a magnet school at all.

Many schools in District H are filled to capacity. According to the project director, overcrowding often prevents students from moving to different schools within the district. Despite a school choice policy whereby students are eligible to apply to attend any of the magnet schools in the district, students cannot transfer to schools that do not have space. A major contributor to overcrowded schools is the increasing number of multiple-family homes within the small urban setting. For example, as one teacher stated, “Five families may share one home.” In addition, most of the magnet schools are neighborhood schools—zoned schools—so students are identified to attend a particular school based on geographic location (i.e., proximity to the school) and those students in the immediate neighborhood are given priority for enrollment. In at least one of the magnet schools that is not a zoned school, 75-99 percent of its students also come from the immediate neighborhood. No specific criteria or application process is required for students who are zoned to a particular magnet school. Students must apply to attend a magnet school only if it is not their zoned school.

To further exacerbate the situation, transportation to area schools, including magnet schools, was also often reported as a challenge that the district faces. No more than 35-40 percent of magnet school attendees are bused to designated schools. The project director and program coordinator (who is also funded by the MSAP project) stated that although parents may be interested in having their child attend a magnet school, they may turn down a placement due to potential transportation constraints. For example, the district has a school for new immigrant children that is underutilized because it is located at the far end of the district and bus service to the school is limited. The overcrowded nature of the district, coupled with limited transportation, makes it very difficult to truly employ an innovative school choice policy.

Collaboration between schools. *The district uses video conferencing to help schools communicate with each other. The district magnet office also distributes a magnet newspaper that highlights activities in various schools and provides information of interest to magnet schools. In addition, magnet schools are required to engage in formal partnerships with one another. Each partnership consists of at least one school that has predominantly minority students. Partnering schools attend field trips together and share materials and staff.*

The district places great emphasis on collaboration among magnet schools and uses video conferencing to help schools communicate with each other. The district magnet office also distributes a magnet newspaper that highlights activities in various schools and provides information of interest to magnet schools. In addition, magnet schools are required to engage in formal

partnerships with one another. Each partnership consists of at least one school that has predominantly minority students. Partnering schools attend field trips together and share materials and staff (for example, technology specialists).

Technological development is reported as a priority at the district and school levels through professional development and the purchase of advanced technological equipment. Equipment purchases are limited, however, because they become outdated too quickly for district needs. The district prefers to use much of its magnet school funds on personnel because, according to the MSAP project director, "It is the people that change the buildings." Remaining funds are spent on theme-related materials and supplies. It was anticipated that after the current grant they would eliminate all itinerant technology specialists and hire from within the magnet schools to provide technology support to teachers. The district decided to make this change because of reported conflicts between school teaching staff and technology specialists, who work on a part-time basis. Some school staff members saw the current technology specialists as unable to develop viable relationships with teachers and as imposing on teachers and their classroom, which has led to a great deal of staff turnover among technology specialists. Differences in opinion as to the utility of the technology specialists were also expressed by some teachers in the schools visited. However, other staff members, including current technology specialists, believe that this plan disregards the progress that has been made over the three years of the MSAP grant primarily because the new technology specialists will have to start the process of building relationships with teachers all over again.

District-Level Staffing

MSAP resources cover the cost of a full-time MSAP project director and a program coordinator. The project director and program coordinator work together on all aspects of the project, including student outreach and recruitment, staff training, and collaboration with institutions of higher education and community-based organizations. For example, the project director makes regular trips to magnet schools to observe the development of themes and to get input from principals on the kinds of topics they would like to see addressed through professional development. In addition, theme specialists (trained teachers who assist with integrating the magnet theme into instruction) submit monthly reports to the program coordinator, who also conducts periodic visits to the schools.

District H's office is actively involved in the implementation and development of the magnet program as indicated by the superintendent's level of involvement and the MSAP project director's regular visits to magnet schools. This has made all MSAP-funded staff feel well supported and prepared to accomplish the goals of the program, and it has encouraged a high level of collaboration between magnet and non-magnet schools.

Recruitment Issues and Strategies

Many of the teachers, students, and parents within non-MSAP comparison schools are not aware of the district's magnet program. For example, in one comparison school, none of the school staff interviewed knew that the junior high school next door was a magnet school. To try to overcome these challenges, displays in several languages are placed in both magnet and non-magnet schools promoting the upcoming magnet school fairs. In one non-magnet school, displays in the main office reminded teachers to promote the magnet fair, and during the morning announcements the principal again reminded teachers and staff.

Recruitment strategies. *The district's recruitment strategies for magnet schools include speaking to parent groups and parent associations, community outreach, connecting parents of non-magnet public school students with parents of magnet students through open houses and magnet school fairs, outreach to non-magnet students, and collaborating with traditional public schools on videoconferencing projects.*

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outreach to non-magnet students, and collaborating with traditional public schools on videoconferencing projects. Recruitment strategies are also borrowed from other programs and activities such as the Magnet Schools of America conference. In addition, brainstorming sessions are held in which staff members share ideas.

The MSAP project director and program coordinator reported that all recruitment strategies have been successful, and no single strategy can be considered more important than others.

Recruitment strategies. *Commercials were developed in English and Spanish and shown on the district's local cable network, which is also a magnet partner. In addition, all magnet-related promotions are provided in several languages. There is also a district-level staff member to work specifically with parents of students with special needs, to help students find the most appropriate placement. School guidance counselors also play a key role in identifying students for the magnet school.*

Although magnet schools try to serve a wide range of students, language and cultural barriers pose a challenge to informing parents of magnet school opportunities for their children. This year, in an attempt to address language barriers, four commercials were developed and shown on the district's local cable network, which is also a magnet partner. The superintendent served as the

spokesperson for the commercials and conducted them in both English and Spanish. In addition, all magnet-related promotions are provided in several languages.

A unique recruitment feature is the establishment of a district-level staff member to work specifically with parents of students with special needs, to help students find the most appropriate placement. School guidance counselors also play a key role in identifying students for the magnet school. For example, magnet school applications are given to school guidance counselors at non-magnet schools for dissemination to students and teachers.

Desegregation Plan and Objectives

District H has a voluntary desegregation plan that reflects the district's school choice policy whereby students can apply to any of the magnet schools in the district. The 1998 MSAP Project targeted four of the district's ten MSAP-supported schools for desegregation. The objective for each of these schools was to reduce minority group isolation.

Minority students represented between 89 and 97 percent of the 1997-1998 enrollment in the schools that the project had targeted for desegregation. By comparison, minority students represented about 84 percent of the 1997-1998 enrollment in the district's elementary schools. Between 1997-1998 and 2000-2001 the proportion of minority enrollment in the district increased to a little more than 85 percent of minority students.

Three of the four magnet schools met the objective of reducing minority group isolation. That is, they either had a lower percent minority enrollment at the end of the grant compared with the percentage in 1997-1998, or experienced less of an increase in minority enrollment during this period than occurred for the district as a whole. The differences ranged from a fraction of a percent to a few percentage points. In the fourth desegregation-targeted school, the increase in the school's minority enrollment was greater by a fraction than the districtwide increase. Therefore this school cannot be said to have reduced minority group isolation.³⁸

In districts such as this one, where the percent minority enrollment is so high for the district as well as the desegregation-targeted schools, the extent to which schools either meet or fail to meet their objective is increasingly likely to be measured in fractions of a percent. As the percent minority enrollment in the district moves beyond 85 percent the principal problem in reducing minority group isolation is the diminishing availability of nonminority applicants. Aside from successfully recruiting nonminority students from other districts or from nonpublic schools, the ability to reliably detect, let alone manage, meaningful improvements in minority isolation would seem to become increasingly problematic.

The Role of the MSAP Project in Supporting State Systemic Reform and Other District Initiatives

District H utilizes the MSAP project to provide a framework within which the district supports the attainment of local, state, and national (Goals 2000) content standards. The development of curricula that are integrated with the magnet themes supports curriculum frameworks and performance criteria delineated by the metropolitan area and the district. One theme specialist stated

³⁸ Another means of demonstrating a program's effectiveness if MGI in a targeted school increases above the districtwide increase is to show through methods such as transfer data that MGI would have increased even further had it not been for students enrolling in a magnet program from outside the school's attendance area. Such data were not generally included in the annual reports available for this study.

that when she develops any theme-related curriculum for teachers she also highlights the corresponding educational standards. The technology skills development activities are directly related to the technology literacy standards developed by the state. All of the magnet schools link curriculum units to the local and state education goals, from readiness to learn through science and mathematics skills development.

The MSAP project is experimenting with the introduction of a number of assessment strategies that will assist school administrators and teachers in the design of instructional activities that directly support rigorous academic standards. A special committee with representatives from each of the MSAP schools has been formed to monitor and link the focus of the MSAP project to curriculum and instructional standards.

As mentioned above, a major reform effort in District H is a focus on reading improvement. MSAP schools were clearly engaged in reform activities related to this focus. For example, students in some MSAP-schools are required to read at least 25 books, with a specified number within the same genre. Students must also conduct author studies and book reviews. One teacher feels that reading skills are given too much emphasis and that mathematics skills are overlooked. Another teacher stated that almost half the student population was below grade level in math.

Student Achievement

The achievement objectives that appeared in District H's application for MSAP funds called for magnet school students to exceed districtwide average performance on state and district achievement tests in reading, mathematics, science, social studies, and (for limited English proficient students) progress in learning English. At the time that they wrote their application, district officials stated that the state and district assessments would change in spring 1999, and that it would be necessary to recalibrate the project's objectives to match the new assessments. Subsequently, the school-level goals tracked during the grant were simply for increases in the percentage of students scoring at or above proficiency level on the new reading and mathematics tests, with 1999 scores serving as a baseline. The project organizers also indicated that they planned to develop instruments for recording students' mastery of applied learning skills related to each school's theme, and stated the expectation that at least 85 percent of students at each grade in each magnet school would demonstrate mastery of these skills. In 2000, the project evaluator noted that each school was "linking theme-related activities to vocational skills as part of their magnet plan." However, information about mastery of theme-specific skills was not reported in the project's progress reports.

The project reported the percentage of students in nine MSAP magnet schools³⁹ who scored proficient or above on tests in mathematics and reading in 1999 and 2000. Results were not disaggregated by grade or by students' minority status, and the numbers of students tested were not provided. Over the two years for which data were available,⁴⁰ six schools showed increases in the percentage of students scoring proficient or above in both reading and mathematics, and two schools showed increases in one subject and decreases in the other. Across the nine schools, the

³⁹ A tenth MSAP magnet school had not yet opened during this period.

⁴⁰ Despite multiple requests, we were unable to obtain a copy of the district's progress report and test scores for 2000-2001, the final year of the grant.

average percentage gain in the proportion of students scoring at proficient level was 14 percent for mathematics and 9 percent for reading.

District H's difficulties in setting baseline achievement levels in the year prior to the grant and tracking the same set of achievement goals across the life of the MSAP grant were not unusual. Several states and districts revised their assessment systems between 1998 and 2001, causing projects to adopt new goals, to simply report statistics without connecting them back to the original objectives, or to abandon the tracking of achievement objectives altogether. Similarly, projects often failed to provide outcome data for objectives that depended on the development of local measures in addition to those mandated by state and district accountability systems.

In elementary school No. 1, state assessment results for 1999-2000 show an overall increase of 22 percent in the number of fourth-grade students meeting the English standard and an increase of 4 percent in the number of fourth-grade students meeting the mathematics standard. Even though some teachers attribute the improvement to the increased instructional time and more concentrated curriculum, no significant relationship can be determined from the test scores.

Professional Development

The project director meets with MSAP-funded staff (for example, theme specialists) twice a month for professional development purposes. The program coordinator organizes and facilitates bi-monthly meetings, which include discussing strategies for implementing magnet themes and learning about curriculum resources. Theme specialists—one teacher designated by each magnet school to help with integrating the magnet theme into instruction—also provide presentations on school activities. Meetings are sometimes hosted at different locations so participants can learn how to utilize their resources to reinforce magnet themes (for example, as field trips or videoconferences). The district office also hosts monthly meetings for all technology specialists in magnet and non-magnet schools.

Innovative Practices

Although innovative practices tend to be school-specific rather than project-wide in District H, such as the integration of the Performing Arts theme into daily instruction at elementary school No. 1, there are some common features across the MSAP-supported schools: video teleconferencing from school to school; more extensive Internet usage, laptops used within schools to help integrate technology and learning, the filtering of technology from outside resources into schools, and school technology teams that are spread to other non-magnet schools. The MSAP project has also produced a videotape on learning options created through technology. Finally, the partnerships some of the magnet schools have with businesses or organizations provide human and material resources to innovatively integrate the themes into daily instruction.

School Level Programs and Activities

This case study describes findings from site visits to District H in spring 2000 and spring 2001 and focuses on four of District H's MSAP elementary schools. The project director recommended one of the elementary schools, and the remaining elementary school selections were based primarily

on racial-ethnic breakdowns and themes. To provide a comparison for these schools, two non-magnet elementary schools were also part of the case study site visits. Comparison schools were selected to closely match the MSAP in terms of student demographics (racial-ethnic breakdowns, grade level, etc.); however, because the district has 20 magnet schools, selecting comparison schools was somewhat limited.

Programs at the four MSAP schools visited include core knowledge for grades K-5, Whole language and telecommunications for grades PreK-5, expressive arts for grades K-5, and business and technology for grades PreK-5. One of the comparison schools was formerly a magnet school with a multicultural theme and is smaller than the other schools serving grades K-5. The second comparison school serves grades PreK-5 and has a strong emphasis on the arts but has never been a magnet school.

Overview of Elementary Schools

At the elementary level, AIR focused on four MSAP-supported schools and two comparison schools in District H.

MSAP Elementary School No. 1	MSAP Elementary School No. 2
<p><i>MSAP School Theme:</i> Core Knowledge</p> <p>Grade Levels: K-8</p> <p>Student Characteristics Number of Students: 1,264** Race-Ethnic Breakdown of Students:</p> <ul style="list-style-type: none"> • Hispanic: 31% • White: 36% • Black: 8% • Asian/Pacific Islander: 25% • Am. Indian/Alaska Native: .2% <p>Percent Free/Reduced-Price Lunches: 73%</p> <p>Teacher Characteristics Number of FTE Teachers: 74.4 Race-Ethnic Breakdown of Teachers:* NA</p> <p>5+ Years of Teaching: NA Newly Hired: NA</p> <p>School and Neighborhood Characteristics</p> <ul style="list-style-type: none"> • Lower to middle income residential area • Well decorated school building 	<p><i>MSAP School Theme:</i> Whole Language and Telecommunications</p> <p>Grade Levels: K-5</p> <p>Student Characteristics Number of Students: 1,526 Race-Ethnic Breakdown of Students:</p> <ul style="list-style-type: none"> • Hispanic: 78% • White: 3% • Black: 4% • Asian/Pacific Islander: 15% • Am. Indian/Alaska Native: .1% <p>Percent Free/Reduced-Price Lunches: 91%</p> <p>Teacher Characteristics Number of FTE Teachers: 72 Race-Ethnic Breakdown of Teachers:* Predominantly White 5+ Years of Teaching: NA Newly Hired: NA</p> <p>School and Neighborhood Characteristics</p> <ul style="list-style-type: none"> • Well maintained facility, despite overcrowding
MSAP Elementary School No. 3	MSAP Elementary School No. 4
<p><i>MSAP School Theme:</i> Expressive Arts</p> <p>Grade Levels: K-5</p> <p>Student Characteristics Number of Students: 1,356 Race-Ethnic Breakdown of Students:</p> <ul style="list-style-type: none"> • Hispanic: 43% • White: 35% • Black: 2% • Asian/Pacific Islander: 20% • Am. Indian/Alaska Native: .2% <p>Percent Free/Reduced-Price Lunches: 88.5%</p> <p>Teacher Characteristics Number of FTE Teachers: 79.4 Race-Ethnic Breakdown of Teachers:* Predominantly White 5+ Years of Teaching: NA Newly Hired: NA</p> <p>School and Neighborhood Characteristics</p> <ul style="list-style-type: none"> • Located in a business district 	<p><i>MSAP School Theme:</i> Business and Technology</p> <p>Grade Levels: PK-5</p> <p><i>Student Characteristics</i> Number of Students: 1,282 Race-Ethnic Breakdown of Students:</p> <ul style="list-style-type: none"> • Hispanic: 82% • White: 2% • Black: 2% • Asian/Pacific Islander: 14% • Am. Indian/Alaska Native: 0% <p>Percent Free/Reduced-Price Lunches: 88.5%</p> <p>Teacher Characteristics Number of FTE Teachers: 70.2 Race-Ethnic Breakdown of Teachers:* Approx. 40% Hispanic; 60% White 5+ Years of Teaching: NA Newly Hired: NA</p> <p>School and Neighborhood Characteristics</p> <ul style="list-style-type: none"> • Located in predominately Hispanic immigrant community • Middle to low income neighborhood

* Staffing data not available from state. Racial-ethnic characterization of teachers in tables based on observation and nonrandom survey of teachers

** Data are from 1999-2000 school year

Comparison Elementary School No. 1	Comparison Elementary School No. 2
<p><i>School Theme:</i> None Grade Levels: PK-5 Student Characteristics Number of Students: 797** Race-Ethnic Breakdown of Students: <ul style="list-style-type: none"> • Hispanic: 46% • White: 6% • Black: 22% • Asian/Pacific Islander: 25.6% • Am. Indian/Alaska Native: .3% Percent Free/Reduced-Price Lunches: 94% Teacher Characteristics Number of FTE Teachers: 54.2 Race-Ethnic Breakdown of Teachers:* Predominantly White 5+ Years of Teaching: NA Newly Hired: NA School and Neighborhood Characteristics <ul style="list-style-type: none"> • 45-year old school • Overcrowded, yet colorful and inviting </p>	<p><i>School Theme:</i> None Grade Levels: PK-6 Student Characteristics Number of Students: 1,245 Race-Ethnic Breakdown of Students: <ul style="list-style-type: none"> • Hispanic: 47% • White: 18% • Black: 3% • Asian/Pacific Islander: 32% • Am. Indian/Alaska Native: .1% Percent Free/Reduced-Price Lunches: 77% Teacher Characteristics Number of FTE Teachers: 79.2 Race-Ethnic Breakdown of Teachers:* NA 5+ Years of Teaching: NA Newly Hired: NA School and Neighborhood Characteristics <ul style="list-style-type: none"> • Middle to low income area with a large immigrant population • Well maintained • Separate building one block from main building that houses kindergarten classes and meals </p>

* Staffing data not available from state. Racial-ethnic characterization of teachers in tables based on observation and nonrandom survey of teachers

** Data are from 1999-2000 school year

MSAP elementary school No. 1's minority enrollment is 64 percent. The neighborhood is lower-to middle-income in a residential setting. The school is well decorated with colorful bulletin boards of student work and projects. Because one element of the theme focuses on geography, there is a map project displayed in nearly every hallway.

The school houses the district's Gifted Academy for grades 6-8, and one gifted class is provided for each grade level for grades 2-5. Although MSAP funds do not directly support the Gifted Academy, teachers from that program requested to be involved in the MSAP program and have helped with developing the curriculum for the school.

MSAP elementary school No. 2 serves students in grades K-5; 90 percent of the students' families are on welfare. Currently the enrollment is at 130 percent of the intended capacity of 1,174 students. Despite the overcrowding, the facility is well maintained. The school has the highest mobility rate in the district and one of the school's greatest challenges is retaining students for more than two years. By the end of a cohort's first year, the school has a retention rate of 88 percent and by the third year it is 50 percent. Such a high mobility rate greatly concerns the principal because it affects student achievement scores, which fluctuate on a yearly basis.

MSAP elementary school No. 3 has a theme of expressive arts and has a student population of approximately 1,350, in grades K-5. The school is located in a business district with a large

immigrant population that is reflected in the ethnic diversity of the student population. Approximately 70 percent of the students live in poverty.

The Business and Technology program at **MSAP elementary school No. 4** serves approximately 1,300 students in grades K-5. The school is approximately 80 percent Hispanic, 2 percent black, 2 percent white, and 14 percent Asian or Pacific Islander. The school is located in a predominately Hispanic immigrant community that is low- to middle-income.

Comparison elementary school No. 1, a 45-year-old school, serves approximately 800 students in Pre-K to 5. The school is at 128 percent capacity and is therefore significantly overcrowded, a situation common to other schools in the district. The student population is very diverse, with students from many different countries where English is not the dominant language. The administration and faculty are just as diverse as the student population, which has been a priority of the principal and easily noticed in comparison to other schools visited.

Due to space restrictions, the school has a separate building approximately one block from the main building where all kindergarten classes and meals are held. All other grades are in the main building. Larger spaces are used for multiple activities and at the time of the site visit the school did not have a music or science room. An addition to the school was built nearly three years ago with the intent to generate more space. However, this minimally addressed the problem due to the increasing student population.

Comparison elementary school No. 2 serves approximately 1,250 students in grades Pre-K to 6. It is located in a middle- to low-income area with a large immigrant population. The school is considered one of the more dynamic public schools in the district. This school receives high marks from the community, primarily because of the rigorous security measures and the wide range of available resources. This school recently became a “Title I school of excellence” and is also considered an “English Language Learner School.” The assistant principal reported that parents from other neighborhood zones often conspire to get their children into this school.

Program, Themes, Goals

School themes

MSAP elementary school No. 1 is attempting to complement its curriculum with the Core Knowledge curriculum, a national framework that has been adapted to meet the school’s individual needs. Through a sequential course of study in grades K-5, Core Knowledge provides students with an enhanced global awareness linking social studies, by using map and globe skills, with literature-based resources and technology. The school administration, teacher specialist, and teachers worked together to develop a curriculum that incorporates four focal areas: geography, idiomatic expressions, stories from around the world (fables, fairy tales, myths, and legends), and important people (significant contributors). The goal is to complement the school’s standards-based mathematics and English curriculum with these areas of Core Knowledge. According to teachers and the administration, meeting this goal is challenging given the emphasis on test preparation.

The Core Knowledge theme is unique in that it is a philosophical approach and not just a program. The focus for the first year of the school’s magnet program was integrating geography into

the curriculum, with an initial focus on teaching students how to use various types of maps. Based on two years of site visits, it appears that the school has been successful in its efforts to integrate the philosophy into the curriculum. Each class produces a monthly newsletter highlighting class activities, student work and upcoming events, and four students work on publishing the newsletter each month, taking pictures and using publication software to organize text and pictures.

An after-school Core Knowledge program serves 25 students in grades 3-4. Students meet in the library where they have computer and Internet access and work on projects such as “state in a box” in which the students have to fill a pizza box by writing descriptions and creating visuals that showcase a particular state.

The Core Knowledge program and other after-school programs appear to be among the more successful components of this magnet school. This is particularly evident in the high participation rates: at the time of the site visits 300 students participated in the “Champions Academics, Sports,

***After-school programs.** After-school programs appear to be among the more successful components of this magnet school. This is particularly evident in the high participation rates: at the time of the site visits 300 students participated in the “Champions Academics, Sports, and Arts Club” and there was a waiting list. This unique program, which takes place for three hours after school every weekday, engages students in sports and arts activities for half of the time and in academic work for the other half.*

and Arts Club” and there was a waiting list. This unique program, which takes place for three hours after school every weekday, engages students in sports and arts activities for half of the time and in academic work for the other half. Students with particular academic needs are given special preference and are required to attend the academic session before they can attend the recreational session. A few of the

programs’ goals include developing positive attitudes, reducing out-of school negative behavior, and improving student literacy, communication and mathematics skills. Teachers attributed improved academic outcomes to the personalized instruction received in the after-school programs.

“Project Read,” another after-school activity intended for at-risk students, involves constructive and motivating approaches to learning. This one-and-a-half hour program takes place three times a week. Participation in the program is limited to a maximum of 15 students per group to help foster more interactive literacy instruction as students read stories aloud, both independently and collectively in small groups. However, a new districtwide mandate requires issuing report cards in after-school remedial programs, and many teachers do not agree with this requirement and believe that it is the cause of the recent decrease in program participation.

During the second site visit in 2001, it was evident that the school had purchased more resources during the previous year to help infuse the magnet theme into the curriculum. Two new literature series were being used: Open Court (with SRA) and Silver Burdett-Ginn. The Open Court series, a phonics-based approach to reading, has an assortment of literature and leveled readers, while the Silver Burdett-Ginn series has at least two books for each theme. Some special education teachers expressed excitement about this addition because of the flexibility offered by the series, which they believe will allow them to use the same curriculum as regular (i.e., non-special education) classes. According to these teachers, prior to this series special education students were primarily involved

in decoding activities, and were rarely exposed to theme-related activities. On the other hand, some teachers believed that the complex literature series were too challenging for special education students and that they were not given adequate time to assess varying ways to incorporate the material. Other teachers, who also agreed that the literature series has some difficulties, have found other ways to combat the intricacies by teaching at lower reading levels, which the administration both recommended and supported. Some teachers who have attempted to implement the new curriculum within special education classes reported that they recognized increased self-esteem levels in the students after the curriculum change.

In **MSAP elementary school No. 2**, the MSAP programs are Whole Language and Telecommunications for K-5. The school promotes specific themes for first through fifth-grade: Ocean, Arctic, Japan, Immigration, and Studies of the Americas, respectively. The school existed as a “whole language” school prior to MSAP funding. Faculty members explained whole language as the promotion of literacy that facilitates students’ communication and writing. The principal stated that he endorsed the whole language learning theory because it allows for more creative instruction and applicability to various student needs. It became evident to site visitors that because the school was implementing the whole language concept prior to becoming a magnet, activities were already established, although some of the MSAP funds were used for a theme specialist. Consequently, teachers appeared very comfortable with the concept and in translating it to students through instruction, and, in turn, students appeared to grasp the concept as well.

The school’s major goal is to improve students’ literacy, and it has increased the amount of required reading and writing to help accomplish this goal. Each day begins with reading for half an hour. Writing is emphasized, and students write books each year, either as classroom projects at the lower grades or on an individual basis in the upper grades. One teacher regularly schedules a book production class in which students practice draft writing with peer reviews and then produce a final product (text and covers) on the computer. Some students may write ten or more books during the course of the year. During the second site visit the school was devoting three of its class periods to reading activities—independent reading, shared reading, and reading centers.

The school’s second goal is to increase students’ knowledge and use of telecommunications (computers, digital cameras, scanners, and video teleconferencing). The administrator required that some computer or technology use be integrated into classroom instruction. According to the administrator, “The skills students learn here will be skills they will use over the course of their life. These are important life skills, especially if they are developed at an early age.”

The school also provides assistance to students with special learning needs. For example, the school has special education and Title I mathematics and reading teachers. According to one Title I reading teacher, vocabulary is the most difficult concept for students to grasp, especially for English as a Second Language (ESL) students. Other non-MSAP funded after-school programs serve the at-risk population (i.e., Title I and Project Read), and participation is mandatory for students with low test scores. Computer software is used to help students grasp concepts such as letter identification and sounds. Word processing is also seen as a valuable tool, particularly for building editing skills by learning how to use spell check, and students work in pairs—“editing buddies.”

MSAP elementary school No. 3 as a whole seems to truly embrace the magnet theme of expressive arts. The goal is to offer students a rigorous academic program aimed at achieving high standards while balancing hands-on learning in the performing arts.

“expressive arts” theme. The goal is to offer students a rigorous academic program aimed at achieving high standards while balancing hands-on learning in the performing arts. During the first site visit, there were two professional performances in the school auditorium that were very interactive and included student participation. In addition, students were responsible for stage managing the performance.

standards while balancing hands-on learning in the performing arts.

During the first site visit, there were two professional performances in the school auditorium that were very interactive and included student participation. In addition, students were responsible for stage

managing the performance. The

theme specialist, funded by MSAP, explained that the performers were carefully selected on the basis of their ability to interact with students. Following the performance, actors were present in at least one classroom for a question and answer session.

The school emphasizes interdisciplinary learning to encourage teacher experimentation with different approaches to learning. Teacher interviews and observations indicate that, like MSAP elementary school No. 2, this school has a whole language approach to learning and test preparation. This approach is considered an effective way to integrate the magnet theme into the curriculum. Elementary school No. 3 appears to be successful at infusing its performing arts theme throughout the curriculum. Many theme-related activities have exposed students to creative ways of learning information from core subjects.

The year of the second site visit the school was designated to participate in a student exchange program with a small town in Italy. Approximately ten students with chaperons traveled to Italy for a 10-day program, and the school was to host Italian students as a part of the exchange agreement. The cultural exchange program that year was deemed successful by the schools in both countries.

Although all schools within the district were facing space constraints, there was a greater impact on this school because performing arts commanded a great deal of space. Classrooms were filled to capacity, making movement difficult within classes. Nevertheless, the school had been creative in dealing with such constraints, ensuring that theme-related activities were meaningful to students. Because there is no gymnasium or designated art center, recreational activities are held in the cafeteria; hence its use interferes with other designated activities. As a result, teachers are encouraged to develop stimulating ways to infuse physical fitness into class activities. Some teachers have been successful in this endeavor while others have found it challenging.

Like most schools in the district, **MSAP elementary school No. 4** is embracing standards-based reform. The Business and Technology theme is integrated into the curriculum as part of the push to improve student performance on standardized tests. The school has systematic changes in place; for example, each day there is block time for uninterrupted mathematics and reading.

Several staff play a role in reinforcing the magnet theme. For example, the theme specialist has a bulletin board near her office that lists the school and student store’s schedules, information on the school’s magnet activities in the local news, magnet-related vacancies, and activities sponsored by

some of the school's magnet partners. In addition, teachers rotate in using one of their professional development periods for magnet related activities (e.g., overseeing the school store that is run by the students, working on the yearbook).

The school also supports after-school clubs and activities, such as a stock market game and an entrepreneur club, both of which are seen as extensions of the magnet theme. Students also participate in the development of a school newspaper and yearbook as reporters and photographers. There are also after-school enrichment programs for parents, such as English instruction.

The theme specialist stated that the school's theme was difficult to introduce in an elementary setting. She initially relied heavily on educational Web sites that provided guidance on incorporating economic-related themes into curricula for all grades and she developed a list of such sites for staff, and purchased theme-related materials for each grade. The theme specialist continued to provide various theme-related resources for teachers to use during instruction.

MSAP elementary school No. 4 appears to have overcome the initial challenge of incorporating its business and technology theme into the curriculum. Because the theme directly supports current reform efforts, it has become a crucial component to the curriculum and has served to help encourage higher-order thinking skills and expose students to higher-level activities. According to the theme specialist, there has been more integration of the magnet theme over the course of the grant cycle, and the magnet program was completely in place at the time of the second site visit.

Although **comparison school No. 1** was a magnet school eight years prior to the site visits, very little theme-related traces remained. For example, the school continues to develop the multicultural calendar for the district and hosts a few activities with multicultural themes. Because the school is operating on limited resources, it is struggling to incorporate technology into the school and classrooms. The teachers complimented the principal for employing effective strategies to acquire supplies for the school.

Some of the staff indicated that the school had more materials and other resources when it was a magnet. Students attended more field trips because magnet funds would subsidize costs (excluding transportation costs), and the financial burden was not placed on parents. In addition, students were engaged in activities that seemed to develop more skills and creativity, such as chorus and the arts, which are now limited and available to only a portion of the student population. For example, chorus is currently available to only one grade. The former magnet coordinator stated that there had been more support for classroom teachers and higher levels of collaboration among teachers, the school, and other organizations when the school had MSAP support.

Standards-based reform is an integral part of the school's goals. The principal is working to align the standards with the curriculum. Arts standards have also been incorporated to guide the curriculum. School bulletin boards visibly display these standards and some teachers verbally reiterate the standards to the students. After-school programs focus on extensive test preparation, particularly in language arts. Although the school has a positive and inviting atmosphere that is evident throughout class activities, very few innovative activities were observed, probably because the school is struggling to ensure that students learn the basics.

Comparison elementary school No. 2 has been able to accomplish its several missions: fostering sensitivity and encouraging cultural awareness, supporting a wide range of academic programs and services that help build thinking skills to support the development of social skills, and

Arts theme. The school has a very strong arts theme that administrators, teachers, students, and the community actively support. Students are enrolled in music keyboarding classes as early as the third-grade and they learn everything from basic fundamentals to more intermediate levels of varying pieces of music. In addition, students have appeared in both print and commercial media presenting their work, and a third-grade class was selected districtwide to participate in an opera production sponsored by Newsday's Future Corps.

preparing students for the technological world. Although the school is not a magnet, it has a very strong arts theme that is evident throughout the school that administrators, teachers, students, and the community actively support. Students are enrolled in music keyboarding classes as early as the third-grade and they learn everything from basic fundamentals to more intermediate levels of varying pieces of music. In addition, students have

appeared in both print and commercial media presenting their work, and a third-grade class was selected districtwide to participate in an opera production sponsored by Newsday's Future Corps, which lasted nine weeks.

Salience of assessments in instruction

All schools in District H focus on improving student achievement on the local, district and state assessments. Following are examples of some of the assessments used in three of the magnet schools.

MSAP elementary school No. 1's mission is to improve student achievement scores in reading and math. The mathematics curriculum is geared toward the district mathematics assessment. To improve test scores, the principal requires that each student have two reading and mathematics periods per day, for two hours of instruction in each subject. The principal also establishes test score goals for students and actively communicates with parents regarding their child's performance in comparison to peers. There is concern by teachers and other school staff, however, that this approach leaves little time for science, social studies, and other classes such as art, physical education, and music.

Elementary school No. 2 uses several instruments to assess students' literacy development. For example, an early childhood literacy assessment is administered to at-risk students in grades K-3 and is given twice a year (at the beginning and end of the year). Administration of the test is very flexible and can be modified to accommodate teachers' schedules and the students' learning pace. Another literacy assessment that incorporates a writing assessment is administered to students that have achieved a certain level on the early childhood literacy assessment.

Like elementary school No. 1, preparing for and improving students' overall performance on standardized tests is elementary school No. 3's focus, as well as a reflection of the district's mission. The school has purchased from an independent vendor a pre- and post-assessment as a test preparation tool to assist with improving reading scores, and results are aggregated and distributed

to the principal, teachers and parents. The administration provided staff development in order to help teachers understand the purpose of the test preparation instruments.

Technology

It is clear that the four MSAP-supported elementary schools in District H had more sophisticated technological equipment than the two comparison schools, although computers and other technological equipment were used to varying degrees in the classrooms.

At elementary school No. 1, technology is used as a means for meeting the Core Knowledge theme-related goals, and some computer software and related technologies were purchased with MSAP funds. For example, mapmaking software was purchased, and students completed geography projects using the software. The school has a computer lab with 30 computers for grades 3-5, a minilab with 15 computers serves grades K-2, and each classroom has four computers. However, computers are not used in the classroom on a daily basis.

Much of the MSAP funding at elementary school No. 2 was used for the theme specialist (for the themes Whole Language and Telecommunications) and the part-time technology position, while the remainder funded approximately 32 Macintosh computers and 19 printers. Software and printing supplies were also purchased. Funding also supported an after-school program that the computer teacher held three days a week, and an upcoming summer program.

Computer classes in elementary school No. 2 expose students to 24 different software programs focusing mostly on mathematics and writing skills (e.g., problem solving, grammar, and creative writing skills). One program assists students with geography and world cultures, while other programs help students improve their typing skills. In the computer lab, each grade has its own folder on the network that consists of various games and activities that support the level of skills maintained at each grade level. According to teachers and the theme specialist, computers have been an added educational tool that have changed students in a positive way.

Teachers are learning how to integrate computers into the classroom by, for example, incorporating them into reading group activities and book productions, in which students write and produce books on the computer. Since literacy is fundamental to improving children's understanding in other areas, it is hoped that this will help the students do better in other classes, but especially on the reading part of the standardized test.

AIR site visitors were informed that students had outdated computers before the MSAP funding. Likewise, the teachers' access to and knowledge of computer use was limited. At the time of the site visits, students spent much more time on computers, and teachers explained that they were able to help them. Students enjoy having access to computers at school because most do not have computers at home. In addition, CD-ROM books help transient students stay on track. It appeared that the students were comfortable with using the technologies available within the school; they seemed to be engrossed in their learning activities, and they also took pride in their work.

The teleconferencing aspect of the program is also expanding. The school had teleconferenced with other classes in the district and with an outside college for an art project, but teleconferencing

was actually used only once or twice during the previous year. Plans were in place to improve this aspect of the program.

The theme specialist stated that due to space restrictions, the school could be more creative in providing teachers with access to technology, such as purchasing a moving lab to provide more direct assistance to teachers and exposure to students. She maintained that an additional technical support person would benefit the school greatly because he or she could devote more time to teachers. During the site visits the computer teacher shared technology responsibilities with the theme specialist.

In MSAP elementary school No. 3, with the expressive arts theme, the technology initiative is an integral aspect of the program and students gain invaluable exposure to advanced technology procedures and sophisticated equipment. MSAP funds support the theme specialist, the technology specialist, and new computers for all grade levels. Several after-school clubs had been created to

Using technology. Students who were part of the after-school club for video production were intensely involved in videotaping and editing the first-grade end-of-the-year music festival using both video and digital cameras. In addition, they controlled the lights and music integration with relatively minimal assistance.

ensure that students acquire the basic skills necessary to operate the equipment. It appeared that after-school programs were more of an expansion of the magnet program rather than an elective. At the time of the site visits, students in grades 3-5 who were part of the after-school club for video production were intensely

involved in video taping and editing the first-grade end-of-the-year music festival using both video and digital cameras. In addition, they controlled the lights and music integration with relatively minimal assistance.

Although video and digital technological equipment was used widely in school stage productions and related activities, its use was somewhat limited within the classroom. Although many of the technological skills that students acquire are related to the stage productions, a small number of students assist with stage performances compared to the overall student population. For those classrooms that use computers regularly, utilizing publishing software is a common activity.

As at elementary schools No. 2 and No. 3, MSAP funds at MSAP elementary school No. 4 support the theme specialist, technology specialist, and some technological equipment (computers, multimedia equipment, and computer software). As in elementary school No. 2, the magnet grant is supplemented with city grants earmarked for upgrading technology in the school; existing computers were purchased with these grants. At school No. 4 approximately 75 percent of the classrooms had been upgraded with new technology, which included four new computers and a printer in each classroom. According to the technology specialist, more teachers are asking for assistance with using technology as a learning tool and they appear to be more interested in the magnet theme and in using the technology. Hence, there is an increased use of technology by the students. The school also had several digital cameras that both students and staff use to display classroom activities and student work.

Videoconferencing. *The school uses videoconferencing to expose students to places they normally could not visit. A fifth-grade class engaged in a videoconference with a NASA space center. The students also participate in videoconferences with other magnet schools.*

The school has videoconferencing capabilities that it uses to expose students to various places that they normally could not visit. A fifth-grade class participated in a videoconference with a NASA space center. The school also has videoconferences with other magnet schools. For example, the theme specialist

explained that a group of students learned origami via videoconference from a group of students located at another magnet school.

According to the technology specialist, technology has come into the school over a short time period without enough attention to the details of implementation, which has resulted in some of the hardware and network problems the school is facing. Although technology is a theme component and is used fairly regularly, access is still somewhat limited. It was unclear how long it would take the school to finish upgrading its technology and resolving technology-related problems.

At comparison elementary school No. 1, the limited resources were apparent—there was outdated equipment and limited technological access in the classroom (many classes did not have computers, or had outdated computers, and only a few classes had Internet access).

Limited resources. *At one school, the limited resources were apparent—there was outdated equipment and limited technological access in the classroom (many classes did not have computers, or had outdated computers, and only a few classes had Internet access). One of the school's major concerns was maintaining its new computer lab. Computers were constantly breaking down, and only 23 of the 32 computers worked on a given day.*

One of the school's major concerns was maintaining its new computer lab. Computers were constantly breaking down, and only 23 of the 32 computers worked on a given day. The lab set-up is not conducive to group or classroom learning because there is not enough room to organize equipment. Students are only using the computers for word processing. The district sometimes provided support for the

computer teacher to deal with problems; however, according to the administrator, this was insufficient. The principal stated that it took multiple conversations with the city council to obtain funds for the new computer lab and several years for the resources to become available. Three classes were connected to the Internet, but the principal felt that the school had a long way to go in integrating and upgrading its technology.

At comparison elementary school No. 2, technology resources had been limited in the past, but at the time of the site visits the school was in greater alignment with its technology preparation mission. The school had recently received a grant that equipped all classrooms with a minimum of four brand new iMac computers and one printer. Every classroom was soon to have Internet access. Because of this development, teachers and administrators have ambitious plans for the upcoming years. The technology specialist facilitated informational training sessions about general computer procedures and Internet policies for both teachers and students. Future plans included more focused sessions that would help provide teachers and students with more advanced understandings of technology.

Professional development

Teacher professional development varied at the MSAP-supported schools, with much of the emphasis on theme-related activities, technology, and testing. Professional development activities in MSAP elementary school No. 1 included, for example, workshops on how technology and geography assist teachers with the mathematics standards. The Core Knowledge philosophy was also implemented through staff development activities for teachers. During the second site visit the School Leadership Team (SLT) was working with the school administration to craft a more comfortable learning environment for in-service activities. One development of this collaborative effort was a leadership development activity at a nearby hotel in which 58 teachers participated. Some teachers who participated reported that the environment provided learning and sharing opportunities.

MSAP elementary school No. 2 engages in professional development activities specific to the Whole Language theme. According to several staff members at MSAP elementary school No. 2, the librarian played a key role in providing curriculum and lesson planning information. They also stated that support offered by colleagues and the administration is essential to the school's positive climate and its ability to incorporate the magnet theme consistently at all grade levels. According to the theme specialist, more staff development time needs to be dedicated to infusing technology into the classroom because almost all staff development is devoted to testing.

At MSAP elementary school No. 4 the technology specialist, although only in the school two to three days a week, played an active role in helping teachers to use technology in the classroom, both informally and by scheduling formal professional development activities. The technology specialist also provided technical assistance with hardware and software problems.

Parental involvement

Increasing parental involvement in their children's education appears to be a priority at both MSAP-supported and non-MSAP schools, although at one of the magnet schools and both of the comparison schools participation of parents is still low.

In MSAP elementary school No. 1, significant gains had been accomplished in regard to parental involvement. Several school staff members stated that the administration set high standards

Parental involvement. *There have been ardent attempts by the school administration to educate parents about all facets of daily school operations. Part of this mission was accomplished by holding six evening workshops, each with three sessions, in which approximately 30 parents participated.*

for all students and it has an open door policy with parents. A lot of this progress is attributed to the ardent attempts by the school administration to educate parents about all facets of daily school operations. Part of this mission was accomplished by holding six evening workshops, each with three sessions, in which approximately 30 parents participated. In these workshops

teachers showed parents different teaching strategies to facilitate student achievement, focusing primarily on how the curriculum prepares students for the assessments.

In contrast with elementary school No. 1, parental participation is low in MSAP elementary school No. 2. For a school with more than 1,500 students, the principal stated that only 20-30 parents typically attend PTA meetings and few attend school-sponsored open houses. In addition, only about 30-35 parents attend parent-teacher conferences. The highest number of parents to attend a school-related function is at the “back-to-school night”—approximately 1,100 parents attend at the beginning of the school year and approximately 500 in the middle of the year. The administrator stated that the low levels of participation for activities other than back to school night could not be attributed to language barriers because all communications are sent home in Spanish and English. The administrator believes that other factors such as employment, childcare, and safety obligations take precedence over participation in school activities. However, a number of parents are present at the school throughout the day to attend the several health, social services, and childcare training activities that are provided by a family social worker who conducts activities in both Spanish and English. Despite the low numbers of parents attending events in general, some parents came to the school to read their child’s book during the KISS (Kids Interested in Sharing Stories) week; and one teacher stated that she had 26 out of her 29 parents show up for teacher conferences and some of her parents serve as volunteers.

MSAP elementary school No. 3 works diligently to increase parental awareness and involvement in school activities because there is a disconnection between the school and parents that is often created by language barriers. Although administrators report mutual respect between

Parental involvement. *The parent association collaborated with the multicultural committee to bring together the diverse cultures, customs, and talents of the entire community through the creation of a cookbook. The more-than-100-page publication includes the name and classroom number of all contributing chefs. At the time of the site visit, parents were working in an office selling the cookbooks—the revenue from the cookbook sales were to contribute to upcoming school-related projects.*

parents and staff, efforts concentrate on fostering a more engaging relationship. According to some school staff, parental efforts have resulted in great benefits for the school. During the second year of site visits, the parent association collaborated with the multicultural committee to bring together the diverse cultures, customs, and talents of the entire community through the creation of

a cookbook entitled “Cooking with Friends.” The more-than-100-page publication is a collection of recipes and a guide to healthy cooking and eating. The name and classroom number of all contributing chefs was also noted. At the time of the site visit, parents were working in an office selling the cookbooks—the revenue from the cookbook sales was to contribute to upcoming school-related projects.

All communications to parents at MSAP elementary school No. 4 are provided in English and Spanish, which has encouraged some parents to get involved, primarily in response to activities that highlight student achievement. For example, each year the school has “character day” in which all K-2 classes dress up in costumes that represent a character or theme of a book they have read during the year. Classes display the costumes in a mini-parade around the outside of the school. The parade takes place at the beginning of the school day and a number of parents and older siblings observe and take pictures of the event.

Like MSAP elementary school No. 4, comparison elementary school No. 1 also attempts to communicate with parents who rarely speak English at home. The school sends home materials in both English and Spanish; however, two parents, who spearhead the PTA, told site visitors that they felt that such items should also be in other languages. Teachers play a large role in attempting to translate information for parents. Nevertheless, as at MSAP elementary school No. 2, parental involvement within the school is low and participation at PTA meetings is poor. According to the two parents interviewed, three consecutive PTA meetings were canceled due to poor participation. To increase participation student awards are presented during PTA meetings, and other activities highlighting student achievements are also included. A few parents also serve as translators for PTA meetings to maximize the level of parent participation. The two parents interviewed believe that many parents may have different cultural understandings of their relationship with the school, which may contribute to their lack of involvement. Also, a large number of parents receive income assistance and are required to fulfill employment obligations.

Comparison elementary school No. 2 also works diligently to educate and support parents as their children transition from home to school. For example, the school created a “Family Room,” where parents of pre-kindergarten students are able to come together to discuss school-related concerns, or to gather socially. Activities range from clipping grocery store coupons and conversing over coffee to workshops on anger management. Every Wednesday is devoted to English-speaking activities and lessons for parents. The family room is located directly near the pre-kindergarten classes and is available throughout the school day. Even though participation is relatively low, the parents involved seem to really enjoy the program. This support system was developed to help integrate parents into the school and immigrants into the community more generally.

Community support

Two of the MSAP elementary schools and one of the comparison schools emphasized the support they received from their respective communities. MSAP elementary school No. 1 may have to rely more heavily on its community partnerships to continue some of its magnet-related activities in the future. The school has partnerships with an art studio, a junior tennis league, a nearby public

Community involvement. *The school has partnerships with an art studio, a junior tennis league, a nearby public library, a civic association, a local seaport, local colleges and universities, and a foundation that supports sports and arts in schools. For example, a seaport expert facilitated fifth-grade science classes once a week for nine weeks working with students on deep-sea activities.*

library, a civic association, a local seaport, local colleges and universities, and a foundation that supports sports and arts in schools. Both administrators and teachers say that volunteers often devote a great deal of time, energy, and resources as they strive to integrate the magnet theme. For example, a seaport expert facilitated fifth-grade science classes once a week for nine weeks working with students on deep-sea

activities. At the time of the site visit, students were learning about life at sea while constructing an in-class aquarium. A group of volunteers worked with students at the school on one Saturday morning to help them artistically create geographical displays of cities, states, and countries around the world throughout the hallways and stairwells. Teachers stated that this activity was an excellent learning experience for the students and served as the beginning of a deeper understanding of geography.

MSAP elementary school No. 4 also receives additional grants and in-kind assistance from volunteers. Over the last six years comparison school No. 2 has developed and maintained partnerships with organizations based in the metropolitan area that support the goals and objectives of the school. The art instructor reported that resources unique to this school create more learning and cutting edge opportunities for students. For example, the school has one of the largest art classrooms in the district, enabling more space to house supplies and art materials. Additional resources acquired through a five-year grant called Project Arts also advance art lessons. The school also receives a local grant and participates in an arts-based instructional program sponsored by a well-known art studio.

School Instruction and Activities

The four MSAP-supported elementary schools AIR visited are focusing on integrating the magnet themes into their daily instruction. Classrooms observed in one of the comparison schools were focusing on improving reading scores. Although the other comparison school does not have a magnet theme, its focus on literacy development is linked to an arts curriculum.

At MSAP elementary school No. 1 classroom observations and student work provided evidence of curricular infusion of the various themes in the Core Knowledge curriculum. Bulletin boards displayed innovative assignments that equally focused on idiomatic expressions, stories from around the world, and important people. Special education classes also infuse magnet themes. For example, in one class they read a fairy tale and then made book covers describing the story. The teacher explained that this exercise helps the students to creatively exhibit reading comprehension. In another class, students were designing a picture about their favorite things using paint, markers, and crayons. Students in another class created storybooks of various idioms, and in doing so, they described what they thought the expression meant and connected it with the correct meanings. Teachers said that this was an especially beneficial exercise for immigrant students since connotations can be easily misconstrued.

According to some teachers in elementary school No. 1, it is difficult to incorporate geography themes into lesson plans because class periods are already assigned to particular subjects, with one class designated for theme-related or extracurricular activities. Nonetheless, during the site visit, geography appeared to be the most evident theme throughout the school. Classroom observations, student portfolios, and wall displays reflected such integration. When teachers were asked how the MSAP grant has changed the way they do their job, they stated that they tend to focus on geography or map skills and social studies. Geography is often incorporated into the social studies class as well as the mathematics class. Idiomatic expression and tales and myths, two other components of the magnet theme, can be covered during the English or writing class.

In MSAP elementary school No. 2, classrooms are organized into small communities and are composed of multiple teams in which students work together to complete assignments. Small tables with about six chairs at each table are used in the lower grades; desks are organized into small groups in the older grades. The younger grades also have lofts that tend to house a particular learning station on one level and a special area on another level that is used for activities to reward student accomplishments. There are several subject-related stations—reading, listening, manipulatives, mathematics, and language arts—that students utilize on a rotating basis. All classes

must display the weather, the alphabet, the daily schedule inside and outside of the classroom, student work (via a clothesline), and the names of daily student helpers along with their role.

In the classrooms observed in elementary school No. 2, students were utilizing technology in various ways—their reports mainly reflected the use of subject-related word processing software, and they also conducted research on the Internet. In addition, some students had learned how to create a Web page with the assistance of the computer teacher. Site visitors noted that the students' Web pages showed varying skill levels in technology and literacy, although all exhibited a high degree of creativity.

Site visitors observed how one teacher introduced technology use into her classroom instruction. Because the class was planning to go to the zoo in the near future, the teacher decided to do a lesson on rainforests. The teacher first led a discussion on what a rainforest is, which included brainstorming on animal life that exists within a rainforest. The teacher then read a story about a rainforest and led a discussion around several concepts from the story. Following the story, the teacher used the computer to show students various Web sites related to rainforests, modeling for the students how to navigate through such Web sites. The teacher then planned for students to develop five questions they wanted answered about rainforests and have them utilize Web sites, books, and encyclopedias to answer their questions. Students were to also conduct measurements of tree and animal life, study animals, and possibly adopt a rainforest.

“Expressive Arts” theme. *In a fifth-grade class, the teacher incorporated a 10-minute break into a lesson in which the students played a game and performed a dance. Students played the “concentration” game, which links hand movement with attentiveness. Afterward, students performed a Spanish dance with a class partner. Although the break in the lesson was relatively brief, it appeared to focus students’ energies on their academic work.*

“concentration” game, which links hand movement with attentiveness. Afterward, students performed a Spanish dance with a class partner. Although the break in the lesson was relatively brief, it appeared to focus students’ energies on their academic work.

The expressive arts theme is an integral part of classroom activity at MSAP elementary school No. 3. For example, in a fifth-grade class observed, the teacher incorporated into the lesson a 10-minute break in which the students played a game and performed a dance. Students played the

Most of the classes observed incorporated performance-based activities that encouraged interaction between students. For example, in several classes students were working on skits based on their reading material. Each classroom was decorated with bulletin boards and reflected activities unique to their class. The bulletin boards are revised monthly and display the most current exceptional class work.

Classroom instruction in MSAP elementary school No. 4, with a Business and Technology theme, reflects a special focus on computer technology, telecommunications, and business. The mathematics classes observed had some level of economics integrated into the lesson. For example, in one kindergarten class the teacher taught the concept of money by having students purchase toys with play money that they had to count accurately in order to make a purchase.

Where possible, teachers focus on an aspect that relates to the school's magnet theme or use some form of technology in carrying out the lesson. During the site visit, the school was reading a book about a family-run store and many classes were engaged in activities related to the book. For example, in one class visited, the teacher had divided the class into groups that were responsible for developing a business plan for a restaurant or food store. The teacher first led a discussion on what a profit is, and then students worked in groups to determine the menu or items that would be sold, how much they would pay for them, and how much they would charge their customers for such items.

As a part of the business theme, the school has a small store run by students with assistance by teachers. The store sells school supplies and is equipped with a cash register. The theme specialist has established a special account for students to bank their profits, which are used for special events.

Business theme. *The school has a small store run by students with assistance by teachers. The store sells school supplies and is equipped with a cash register. The theme specialist has established a special account for students to bank their profits, which are used for special events. In addition, students are responsible for using the money from the store to purchase more merchandise and maintain the business. All students participate in the store either as customers or entrepreneurs.*

In addition, students are responsible for using the money from the store to purchase more merchandise and maintain the business. All students participate in the store either as customers or entrepreneurs. At set times throughout the day, students visit the store and purchase goods. The school also has a student store that has magazines, books, and student-made products for sale, which is open one to two periods throughout the week. Both

the school and student stores have become resources for the school in that they provide both teachers and students with supplies on site. The theme specialist also believes that the stores help students apply the knowledge they gather in the classroom. In addition, site visitors noted that involvement in the school store helped students with their communication skills.

Comparison elementary school No. 1's primary academic objective is to improve reading scores. Unlike MSAP elementary school No. 2, the reading program is based more on phonics than whole language, and like elementary school No. 1, the lower grades use the Open Court reading series. The reading program begins in kindergarten to help the students start on solid ground. As part of their homework, students are required to read from 30 to 60 minutes each day, depending on the grade level. The school also participates in a reading program in which the goal is to have each student read 25 books of different genres. All classes visited displayed some sort of chart highlighting how far along students were in meeting the goal. Some classes displayed the names of students who had met or exceeded the goal outside the classroom door or on nearby bulletin boards. Upon completion of each book, students had to write a summary of the story or of a particular character to show that they understood the story and met the learning objective.

Literacy development is a focal element of comparison elementary school No. 2. Teachers accomplish this task through linking literacy with communication arts. Student work spans across several areas including drama, music, dance, and art. Seven of the ten cluster classes designated for specialized instruction have artistic themes. In addition, the writing and literacy specialist follows a demanding curriculum that includes focusing on accelerated language arts activities. Select classes

in the school participate in a program sponsored by a local college that involves working with small groups to better address literacy. Although this program is implemented in select classes, several teachers who were not participating in the program divided their classes into small groups and had project-oriented lessons. This practice allowed teachers to give students a considerable amount of individual attention.

The art instructor reported that cross-curriculum instruction has been one of her main foci. Not only do students review material from other classes, they also learn how all subjects relate to one another in some manner. Learning about the connections of geometry, problem-solving, and scientific measures is one example. In particular, in a classroom observed, a class assignment involved drawing and painting giraffes, and students in the class first discussed the physiology of the giraffe. This exercise was important because it reviewed material that was previously learned in science classes. Other examples of cross-curriculum instruction focused on linear measures. In fact, the art instructor considered the mastery of this skill to be the foundation of any successful artist. Students have developed three-dimensional sketches, full mask creations, and drawings and paintings on various textures, including cloth.

Summary

Most of the magnets in District H are zoned schools so students are identified to attend a particular school based on their proximity to the school. Two of the current 10 MSAP-supported schools were also funded during the 1993-1995 grant cycle, but the remainder are new magnet schools. District H's policy is to ensure that the maximum number of schools have the opportunity to become a magnet school. The MSAP project has redesigned the magnet school programs with new curricular themes and has attempted to access the resources that are available in the metropolitan area to support its efforts. One of the comparison elementary schools in District H differs from some of the other non-MSAP schools in that local and district resources enable it to have a focus on the arts and to be considered one of the most dynamic schools in the district. Outlined below are some of the benefits and challenges that District H and the magnet schools have experienced in the 1998-2001 grant cycle, some lessons they have learned along the way, and the MSAP project's plans for the future.

Benefits

It appears that in the MSAP-supported schools in District H there is substantial community support, and successful partnerships with businesses and universities are evident. The partnerships and collaborations among the magnet schools enable the partners to share human and material resources such as technology specialists and supplies for field trips. The videoconferencing capability across the magnet schools enables the schools to communicate with each other and with other places, for example the NASA space center that they would not normally be able to visit.

Challenges

District H is challenged with reducing minority group isolation schools in an overcrowded district with a high student mobility rate. Limited transportation service to area schools, and language and cultural barriers with the parents and students add to the challenges the district faces in

trying to reduce minority isolation. Because the magnet programs were new at three of the schools (the Whole Language program had already been in place at elementary school No. 2 although it was a new magnet), it was challenging for the administrators and staff to integrate the themes into the curriculum. Some of the MSAP schools also have space constraints that have an impact on implementing the theme-related activities. Like many of the other school districts visited, the emphasis on test preparation and the pressure to improve reading and mathematics scores made it a challenge to implement the themes into the curriculum.

In District H, there were differences in opinion about the utility of the technology specialists in the magnet schools, which led to their high rate of turnover. A challenge is anticipated if the district decides to hire technology specialists from within the magnet schools after the MSAP grant period is over. In elementary school No. 4 there was an emphasis on installing the technological equipment without the necessary attention to detail because the upgrade in technology occurred over a short period of time. This led to multiple network and hardware problems that created a challenge for the staff and administrators.

Lessons Learned

Many teachers and students in non-MSAP schools in the district are not aware of the MSAP program. The magnet schools have learned that a successful strategy is to promote their magnet programs and fairs in multiple languages in the non-MSAP schools. In an attempt to address language barriers, commercials were developed on the local network that were conducted in both English and Spanish.

District H is overcrowded, and many of the schools were operating with limited space; magnet schools with themes such as the arts required a lot of space. Schools learned that they needed to be creative in managing these space constraints and use classrooms, the gymnasium, and the cafeteria for multiple purposes. Because many of the magnet schools funded in the 1998-2001 grant are new, the administrators and teachers had to learn how to successfully incorporate magnet themes (e.g., Business and Technology) into their curriculum. It often took them a couple of years to fully implement the theme-related activities.

Plans for the Future

All of the magnet schools that were funded in the 1998-2001 grant cycle are still magnets. District funds and competitive grants (when obtainable) will be used to support these schools. According to the MSAP project director, innovative education programs are key to the success of procuring these funds. The schools will have less technology support and fewer resources than they had when they had federal funds. The district was planning to eliminate all itinerant technology specialists and hire from within the identified magnet schools to provide technology support to teachers. At MSAP elementary school No. 4, the partnerships will continue to exist, but there was a concern that the theme specialist position might be eliminated, leaving nobody to maintain these relationships. At elementary school No. 1 there was a concern that although there were sufficient resources to implement the theme for a few additional years, the fund depletion would soon result in a “deteriorating” program.