

SREB



We Know What Works in the Middle Grades:

*Smart District Leadership
Can Make It Happen*

Southern
Regional
Education
Board

592 10th St. N.W.
Atlanta, GA 30318
(404) 875-9211
www.sreb.org

This report was prepared by Gene Bottoms, senior vice president, Southern Regional Education Board; Sondra Cooney, consultant, School Improvement; and Allison Timberlake, coordinator of assessments, School Improvement.

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Southern Regional Education Board

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Foreword

A March 2007 *New York Times* story tells of educators across the nation who are “Trying to Find Solutions in Chaotic Middle Schools.” The story describes the “documented slumps” in middle grades performance revealed by the National Assessment of Educational Progress in classrooms across the United States. School leaders, the story says, are puzzling over the right grade configurations for schools serving young adolescents — or the right mix of academics and student support programs for youth just entering their teens.

The Times headline leaves the clear impression that we simply don’t know what to do about the middle grades. But we do. As this study documents, some schools and districts are transforming their middle grades programs and preparing their students for challenging high school work. The real question for school systems where middle grades achievement continues to slump is this: *Where is the will and the leadership to implement the solutions we already know about?*



David S. Spence
President
Southern Regional Education Board

The Middle Grades Slump

The 2005 National Assessment of Educational Progress (NAEP) revealed that 11 percent more students in the fourth grade than in the eighth grade were performing at the Basic level and above in mathematics. The percentage of students performing at the Basic level and above in reading actually declined between 2003 and 2005.

Introduction: Success in the Middle Grades Depends on Key Practices, Key Conditions and Key Leadership

The Southern Regional Education Board (SREB) launched *Making Middle Grades Work* (MMGW) in 1997 after documenting first-hand through SREB's *High Schools That Work* initiative that too many students were leaving the middle grades unprepared to meet high standards in high school. Consequently, ninth-grade failure rates were soaring, high school completion rates were declining, and too few students were meeting college-readiness standards.

The MMGW initiative invited middle grades schools across the region to join in a concerted effort to raise the achievement of all students and eliminate the performance gaps between students of various demographic and socioeconomic backgrounds. Initially, SREB partnered with 26 schools in 13 states to develop and test the school improvement model. Currently, 284 schools in 21 states are part of the MMGW school improvement network.

We Have Learned What Works in the Middle Grades.

During nearly a decade of implementation and expansion of MMGW, we have documented both what works to prepare middle grades students for success in high school, college and a career — and what conditions must exist for schools to make effective practices an integral part of the way they do business.

In reaching the conclusions in this report, SREB compared schools in the MMGW initiative that have more fully implemented the MMGW research-based design with others that we define as low-implementation schools. We found clear differences in the achievement levels and academic success of these two groups of schools. We also found that dynamic, sustainable middle grades reform is far more likely to occur when district leaders, principal leaders and teacher leaders are all committed to the same improvement goals and means of achieving them.

We read a lot about principal and teacher leadership in today's school reform literature. We hear less about leadership at the school district or central office level. But our own research makes it clear that in the absence of vision, awareness, willpower and persistence, most middle grades schools will not achieve the comprehensive reforms necessary to prepare every freshman for a rigorous and relevant high school curriculum.

Smart Actions by District Leaders Can Make the Difference

District leaders play a strategic role in improving middle grades education. Their first task is to clearly convey to the public and to school faculty and staff that the primary mission of the middle grades is to equip students for rigorous high school studies in language arts/reading, mathematics, science and social studies. Fully engaged district leaders will acknowledge achievement gaps and enlist school, teacher and community leaders in preparing all middle grades students to meet high standards in grades nine through 12.

It is not enough for district leaders to identify achievement deficits and articulate the middle grades mission. The superintendent and the local school board must develop a comprehensive vision of a middle grades experience that will prepare more students to do challenging high school work. It is essential to support the vision with policies that reflect the best research on effective middle grades teaching and learning. Districts must provide financial resources, produce data to measure progress toward target goals, and muster the human resources necessary to support large-scale reform, including the careful selection of school leaders who know how to lead change.

District leaders must resist the temptation to “dictate from on high” by designing a reform strategy flexible enough to allow for school-level creativity in making instructional decisions. Effective school improvement is a collaborative effort involving the district, its principals and its teacher leaders. As this report shows, districts that improved student achievement by using the *MMGW* Goals and Key Practices gave school leaders the flexibility to implement the design through buy-in and ownership.

A district and its schools need to work together to create a culture of high expectations for every student to leave the eighth grade ready to succeed in a college-preparatory curriculum in grade nine. Our research shows that successful districts in the *MMGW* initiative *support school leaders and teachers with professional development and common planning time to align curriculum and instruction to high school readiness standards.*

Successful partnerships between district and middle grades leaders *are characterized by a shared understanding that it is crucial for students to succeed in the first year of high school.* If they do not, graduation rates drop dramatically. When needed, these partnerships ensure that students have additional instructional time and extra help from teachers to make the transition from the middle grades to high school — and to complete Algebra I and college-preparatory English/language arts by the end of grade nine. Such partnerships may facilitate summer sessions prior to the freshman year or special classes during the ninth grade. At all times, they are ready to break with tradition to get the job done.

In successful partnerships, accountability flows in both directions. District leaders support the vision not only with words but with resources and constant attention. Each school takes ownership of its own improvement plan and understands that it will be held accountable for making significant progress. Smart districts create annual forums where principals and teams of teacher leaders can present their plans and accomplishments to the superintendent and/or the school board. The forum format provides a venue to discuss shortfalls and how they will be addressed. Such a meeting creates a culture of continuous improvement at the district and school levels.

This report reinforces the idea that true middle grades reform cannot be accomplished with a “project mentality.” Districts that move from one initiative to another without follow-through will continue to have a high percentage of students leaving the eighth grade unprepared for high school. The secret of successful reform is a sustained commitment to a comprehensive effort that prepares middle grades students to complete challenging high school work.

Summary of Findings

One of the questions asked in this study is: “Do middle grades schools that have more fully implemented the *Making Middle Grades Work* initiative have significantly higher achievement than a comparative group of schools that have not fully implemented the design?” A related question is: “What actions by district leaders are most likely to support full implementation?” The answers to both questions are addressed in this summary of findings, which includes recommendations for state leaders as they consider policies that will better support districts and schools in preparing more students for high school.

1. Schools that implement the MMGW model achieve more.

By comparing the results of two groups of *MMGW* schools on the Middle Grades Assessment (MGA) — a National Assessment of Educational Progress (NAEP)-referenced exam — it is clear that schools that more fully implemented the *MMGW* model produced significantly more students who met high school readiness standards in reading, mathematics and science.

In reading, high-implementation schools had only 18 percent of black students performing below the Basic level,¹ compared with 40 percent at low-implementation schools. High-implementation schools had 8 percent of white students performing below the Basic level, compared with 21 percent at low-implementation schools. The contrasts among groups of students at high-implementation and low-implementation schools also showed up in mathematics and science.

Schools that saw increased student achievement took certain actions to more fully implement the *MMGW* Key Practices and Conditions.²

¹ Basic, Proficient and Advanced student achievement levels are based on the levels used by the National Assessment of Educational Progress (NAEP).

² See the Appendix for the list of *MMGW* Key Practices and Key Conditions.

To prepare students for high school, more of the high-implementation schools:

- ***Provide rigorous course work in English/language arts, mathematics and science.*** At least 62 percent of students at high-implementation schools completed a more rigorous English/language arts curriculum, compared with 46 percent at low-implementation schools; 83 percent completed either Algebra I or pre-algebra, compared with 74 percent at low-implementation schools; 68 percent completed a more rigorous science curriculum, compared with 53 percent at low-implementation schools.
- ***Emphasize schoolwide literacy and higher-quality mathematics and science instruction.*** At high-implementation schools, 79 percent of students experienced a moderate or an intensive emphasis on reading and writing for learning in all courses, compared with 61 percent at low-implementation schools. In high-implementation schools, 74 percent and 81 percent, respectively, experienced rich and engaging learning in mathematics and science, respectively, compared with 52 percent and 59 percent at low-implementation schools.
- ***Have high expectations and provide assistance to help students meet course standards.*** Twelve percent more students at high-implementation schools than at low-implementation schools said teachers clearly indicated at the beginning of a project or a unit the amount and quality of work necessary to earn a grade of A or B. Fifteen percent more students at high-implementation schools said their teachers and other adults at the school were available to help them before, during and after school.
- ***Provide students with information and assistance to plan and prepare for high school.*** Seventeen percent more students at high-implementation schools than at low-implementation schools reported having a written plan for the courses they planned to take in high school.
- ***Have school leaders who create a culture of high expectations and continuous school improvement.*** Thirty-seven percent of teachers at high-implementation schools, compared with 22 percent at low-implementation schools, said the school places intensive emphasis on continuous improvement.

- ***Have teacher leaders who support high expectations and continuous school improvement.*** Nineteen percent more teachers at high-implementation schools than at low-implementation schools are in strong agreement that teachers in their schools maintain a demanding yet supportive environment that pushes students to do their best.

2. District actions make a difference in middle grades improvement.

The actions taken by school system leaders help determine whether students leave the middle grades prepared to master challenging high school work. These actions are most effective when they are developed and carried out through collaborative partnerships with principal and teacher leaders at the school level. **District actions that make a difference include:**

- Have goals and an explicit mission for middle grades schools to prepare all students for a college-preparatory program of study in high school. Most high-implementation schools had district leaders who adopted the *MMGW* framework as their vision and mission for improving middle grades education.
- Acknowledge performance gaps and define curriculum performance benchmarks for grade-level work.
- Develop a rigorous academic curriculum to challenge all students.
- Gather data on curricula, instruction and performance benchmarks and help schools use the data to make instructional decisions.
- Establish the importance of reading and writing across the curriculum and provide professional development to support implementation of literacy strategies.
- Develop a vision of effective instruction.
- Align professional development to district performance goals and improvement strategies.
- Create teams of teachers to support a culture of school improvement.

3. State actions can accelerate reform in every middle grades school.

State leaders have an important role to play in encouraging and supporting districts and schools to prepare more students for high school. **The following actions at the state level can accelerate middle grades reform:**

- Ask the state department of education to define standards for high school readiness. The standards should state what students must know and be able to do to succeed in college-preparatory courses such as English/language arts, Algebra I, science and social studies.
- Assist districts in aligning the core curriculum and classroom instructional practices — teacher assignments, student work and classroom assessments — to high school readiness standards.
- Develop or modify state tests to assess middle grades students' readiness for success in college-preparatory high school courses. Too many states have established low eighth-grade performance standards under the federal *No Child Left Behind (NCLB) Act*, leading middle grades teachers and leaders to believe that students are prepared to do rigorous high school work. States need to be clear about expected performance levels, particularly in English/reading and mathematics.
- Collect samples of teacher assignments, student work and classroom assessments from core academic subjects in grades six through nine, including a representative set of classroom data from schools that fail to meet Adequate Yearly Progress (AYP) as required by *NCLB*. The state should report its findings, indicate the degree to which the middle grades curriculum and instruction are aligned to high school readiness standards, and recommend actions to be taken by districts and schools. These actions should include any special assistance the state can provide, such as working with district and school leaders to align the curriculum and classroom instruction to high school readiness standards.

- Review and adjust the state funding formula to ensure that middle grades schools receive state funding commensurate with what is received by other grade levels. In several SREB states, it appears that the middle grades receive less funding per student than other grade levels.³

4. State actions can challenge district decision-makers to become leaders in local middle grades reform efforts.

Sustained improvements in the middle grades occur when district leaders make middle grades reform a high priority and create a systemwide approach to curriculum and instructional changes. **State leaders can challenge school districts to accept ownership of middle grades reform by setting the expectation that system leaders will:**

- **Acknowledge poor performance and create a vision** for a rigorous and meaningful middle grades curriculum supported by instructional improvement and goal-oriented leadership. The district can set goals for improved achievement and instruction and ask the school board for support. A meaningful and rigorous curriculum is measured by finding the percentages of students taking advanced courses, writing research papers, reading books and completing laboratory investigations and hands-on science experiments.
- **Align the middle grades and high school curricula and instruction to grade-level and college- and career-readiness standards.** Central office personnel in successful districts push for the implementation of the district curriculum. In an instructionally focused district, personnel at all levels devote the bulk of their time and attention to aligning teacher assignments, student work and classroom assessments to grade-level standards.
- **Develop a vision of a professional middle grades teacher who focuses on academic achievement and instructional improvement.** Successful districts agree on standard practices to be used in all classrooms and focus annually on at least one “best practice” for

³ Griffith, Michael. “State Education Funding Formulas and Grade Weighting,” from *Policy Brief: Finance Funding Formulas*. Education Commission of the States. May 2005.

intensive staff development and follow-through. Successful districts and schools realize that it is important for teachers to learn from each other, so they use professional development to develop high-functioning learning communities. Successful districts recognize that while middle grades students may require support systems tailored to the needs of young adolescents, these students and their teachers are fully capable of meeting the standards required to pursue challenging high school work.

- **Create school leadership teams committed to continuous school improvement.** Successful districts include assistant principals, teacher leaders and school board members on leadership teams that continually champion improvements in middle grades instruction. District leaders focus on student achievement and the development of future leaders who can carry forward the work of school reform.

Background: The Goal, the Challenge and the Solution

In 2002 the Southern Regional Education Board (SREB) adopted *Challenge to Lead* Goals for Education. The middle grades goal calls for the achievement of all groups of students to exceed national averages and for the performance gaps between groups of students to close.⁴ In addition, the middle grades mission is defined as “preparing students for success in a rigorous high school curriculum, followed by graduation.”

SREB recognized the issues facing middle grades education when it established *Making Middle Grades Work (MMGW)*.⁵ This school improvement design unites state, district and school leaders with teachers, students, parents and community representatives to raise student achievement in the middle grades. *MMGW* is founded on the conviction that most students can master rigorous academic studies when schools create a motivating environment and provide the academic support to help students succeed. Certain conditions will motivate students to achieve at a higher level:

- They take a rigorous academic core and understand the usefulness of those studies.
- They have adults to provide extra help and time as they endeavor to meet course standards and to make a successful transition from the middle grades to high school.
- Teacher-advisers work with parents and students to set goals and select courses that prepare students for college-preparatory classes in high school.
- School leaders focus on instruction by providing common planning time, professional development aligned with school improvement plans and the *MMGW* Key Practices, and opportunities for teachers to participate in a continuous school improvement effort and to reflect on how well various groups of students are being served.

⁴ *Goals for Education: Challenge to Lead*. Southern Regional Education Board, June 2002.

⁵ *Making Middle Grades Work: An Enhanced Design to Get All Students to Standards*. Southern Regional Education Board, 2006.

- District leaders align policies, resources and initiatives to build the capacity of school leaders and teachers to implement a shared vision of a comprehensive school improvement effort.

These conditions create an environment in which more students and their parents recognize that the middle grades do matter. In an era of rising workplace requirements, it is more important than ever before for young people to receive a good high school education. Middle grades schools have a responsibility to prepare students through a rigorous and relevant curriculum that opens rather than closes educational and career options.

A Little Progress and a Long Way to Go

In 2003 only five of the 16 SREB states had more than 70 percent of students meeting state standards in reading by the end of grade eight; only four SREB states had that percentage of students meeting mathematics standards. In 2005 the number meeting standards increased to nine states in reading and five states in mathematics. Six states increased the percentage of students meeting reading standards by more than five percentage points, while five states made similar increases in mathematics. Five states made no gains or had fewer students meeting basic standards in reading, mathematics or both from 2003 to 2005.

Clearly, too many middle grades students are failing to meet state standards for high school readiness, much less the *Challenge to Lead* goal. States have a distance to go to meet — or even come close to — the *No Child Left Behind* requirement of having 100 percent of students achieving standards by 2014.

Results from the National Assessment of Educational Progress — which compare academic progress across state lines using a common assessment — indicate that student performance data from several state eighth-grade assessments may actually understate the problem of middle grades achievement. The 2005 NAEP results revealed that seven SREB states had *significantly fewer* eighth-grade students scoring at or above the Basic level on NAEP's reading and mathematics tests than they had students meeting or exceeding *their own state standards* in those subjects.

Only five states had more than 70 percent of students performing at or above the Basic level in NAEP reading and mathematics. (NAEP defines the Basic proficiency level as *partial mastery* of prerequisite knowledge and skills that are *fundamental* for proficient work at each grade level.)⁶

Nationally, only 71 percent of eighth-graders who took the 2005 NAEP scored at or above the Basic level in reading, and 68 percent met or exceeded the Basic level in mathematics. The percentages of students scoring at or above NAEP's Proficient level totaled 29 percent in reading and 28 percent in mathematics. **This means that one-third of eighth-grade students across the nation did not demonstrate even partial mastery of the fundamental skills necessary to complete challenging high school work.** This national assessment suggests that the middle grades need to do more work in helping all students meet academic standards.

A Blueprint for Middle Grades Success

SREB'S *MMGW* design includes the practices and conditions to help schools meet academic goals and achieve the primary mission of preparing each middle grades student for a challenging high school career. *MMGW* can help schools transform teaching and learning when states, districts and schools make a commitment to fully implement the design.

As state, district and school leaders consider policies that will “put the middle grades to work,” the findings and recommendations from this report can help close the performance gaps among groups of students and can ensure that all students are ready for challenging high school work.

⁶ National Assessment of Educational Progress, www.nces.ed.gov

The *Making Middle Grades Work* Study: Design and Intent

One of the reasons SREB established *MMGW* was to inform district, school and state leaders about classroom, school and district practices to improve the readiness of middle grades students for more challenging high school studies. Keeping with that intent, this report addresses three questions:

- Do middle grades schools that have more fully implemented the *MMGW* design have significantly higher achievement than a comparative group of low-implementation schools?
- Are there differences in school and classroom practices between high- and low-implementation schools?
- What actions did school and district leaders take to support implementation of the *MMGW* framework of practices and conditions at schools that had more fully implemented the design?

To assess progress toward the middle grades *Challenge to Lead* goal, schools in the *MMGW* network participate in the biennial Middle Grades Assessment (MGA), developed by SREB and Educational Testing Service (ETS). The assessment includes a student survey, a teacher survey and NAEP-referenced tests in reading, mathematics and science.

SREB used the results of the 2004 Middle Grades Assessment to answer the first two questions about the effectiveness of the *MMGW* design. The answer to the third question is based on several structured interviews with school and district leaders who had more thoroughly implemented the design.

To analyze the test performance data, SREB selected two comparative groups of schools that it ranked as either high-implementation or low-implementation schools.⁷ High-implementation schools are those that have made the most progress in implementing the *MMGW* Key Practices and Key Conditions. These schools pay more attention to rigorous academics and high classroom expectations, effective school leadership for continuous improvement, the use of research-based classroom practices, a structured system of extra help for students, better guidance and information for students and parents, and greater support for staff.

The 25 highest- and lowest-implementation schools were matched according to the percentage of minority students and the percentage of students whose mothers had no education beyond high school. The selected schools are demographically similar. (See Table 1.) SREB uses the mother's education level as an indicator of economic status.⁸ The comparison groups are closely matched by ethnicity; however, the low-implementation group has more students who report that their mothers received no more than a high school education.

⁷ All participating schools were ranked at the high, moderate or low level of *MMGW* implementation. To identify the implementation level of schools, SREB ranked schools by the percentages of students who had intensive experiences in each of 10 indices. Schools were assigned a score of 1 to 6 for each index according to their percentage rankings in the intensive category. For instance, schools received a score of "6" if they ranked in the top 10 percent in an index. They received a "5" if they ranked between 11 and 20, and so on. Each school was assigned a combined implementation score, with 60 being the maximum and 10 the minimum.

⁸ The mother's education level, also used by NAEP, has been questioned because middle grades students may not be aware of the status of their mothers' education.

Table 1
Distribution of Students by Ethnicity and Mother's Education Level

	High-implementation Schools (2,010 students)	Low-implementation Schools (2,106 students)
White	74%	73%
Minority	26	27
Mother's Education Level	49	57*

Source: 2004 Middle Grades Assessment

*Difference is significant at the .05 level.

Comparing achievement in MMGW high- and low-implementation schools

The Middle Grades Assessment, a NAEP-referenced assessment of reading, mathematics and science, is a tool for measuring the progress schools make in improving student performance. In all three subjects, the high school readiness goal falls between the Basic and Proficient levels. These goals are 160 in reading, 160 in mathematics and 161 in science.⁹

Eighth-grade students of all ethnicities at high-implementation schools have significantly higher achievement in reading, mathematics and science than similar students at low-implementation schools. More than half of students at high-implementation schools met high school readiness goals in reading, mathematics and science, compared with under 40 percent of students at low-implementation schools. Sixty percent of students at high-implementation schools met the reading readiness goal, compared with 36 percent at low-implementation schools — a significant 24 percentage point difference in a skill that impacts success in all subject areas. (See Table 2.) The differences are 23 percentage points in mathematics and 18 percentage points in science.

⁹ Achievement goals for each of the three subject areas were established as performance targets for high school readiness for students at participating schools. The goals are 1) to raise the academic achievement of all middle grades students to a level at which the student demonstrates the fundamental knowledge and skills needed for challenging high school work and 2) to increase the percentages of students performing at the Proficient and Advanced levels.

Table 2
Summary of Student Achievement at
High- and Low-implementation Schools

	High- implementation Schools	Low- implementation Schools	Percentage Point Difference
Met Readiness Goals			
Reading	60%	36%	+24**
Mathematics	61	38	+23**
Science	51	33	+18**
Mean Scores			
Reading	163	148	+15**
Mathematics	165	148	+17**
Science	158	140	+18**

Source: 2004 Middle Grades Assessment

**Differences are significant at the .01 level.

Increased achievement at high-implementation schools holds true for all groups of students — whites, blacks and students of other ethnicities, as well as students from higher and lower parent education backgrounds. Sixty-five percent of white students, 39 percent of black students and 50 percent of students of other races and ethnicities at high-implementation schools met the reading readiness goal, compared with 41 percent, 23 percent and 24 percent, respectively, at low-implementation schools. High-implementation schools also had more black students and more students of other ethnicities meeting the mathematics and science readiness goals. (See Table 3.)

Patterns of significantly higher achievement in high-implementation schools hold true for students from higher and lower parent education backgrounds. More students with lower parent education backgrounds met the reading, mathematics and science readiness goals at high-implementation schools. More students, regardless of ethnicity or parent education levels, were likely to perform at the Basic level or above in reading, mathematics and science at high-implementation schools, compared with similar students at low-implementation schools.

Table 3
Percentages of Students Meeting the *MMGW* Performance Goals
at High- and Low-implementation Schools

	High- implementation Schools	Low- implementation Schools	Percentage Point Difference
Reading			
All Students	60%	36%	+24**
White	65	41	+24**
Black	39	23	+16**
Other	50	24	+26**
High-education Background	68	46	+22**
Low-education Background	52	29	+23**
Mathematics			
All Students	61	38	+23**
White	66	44	+22**
Black	35	16	+19**
Other	52	32	+20**
High-education Background	70	48	+22**
Low-education Background	52	31	+21**
Science			
All Students	51	33	+18**
White	57	40	+17**
Black	22	8	+14**
Other	36	23	+13**
High-education Background	60	44	+16**
Low-education Background	41	26	+15**

Source: 2004 Middle Grades Assessment

Note: Other includes all non-white, non-black students.

**Differences are significant at the .01 level.

Proficiency levels tell an even more commanding story. Using NAEP-referenced definitions of proficiency, 22 percent less black students performed below the Basic level in reading at high-implementation schools than at low-implementation schools. **When students achieve below or even at the lower end of the Basic level, they are at greater risk of failing grade nine and being unable to graduate from high school.** High-implementation schools also have significantly more students at the Proficient and Advanced levels, which indicate complete readiness for college-preparatory work in high school.

Additionally, high-implementation schools have made more progress in closing the reading achievement gap. Only 10 percent more black students than white students are below the Basic level, compared with 19 percent more at low-implementation schools. Slightly more than one out of 10 students (12 percent) from low parent education backgrounds at high-implementation schools are below the Basic level, compared with almost one out of three similar students (32 percent) at low-implementation schools. (See Table 4.)

Proficiency levels tell a similar story in mathematics. Twenty-six percent less black students performed below the Basic level at high-implementation schools than did their counterparts at low-implementation schools. Even more striking is the fact that 64 percent of black students at high-implementation schools reached the Basic level or above, compared with 86 percent of white students. High-implementation schools also outdid low-implementation schools in having more black students at the Proficient and Advanced levels.

Schools implementing the *MMGW* school improvement design are successful in narrowing the mathematics achievement gap. High-implementation schools have 25 percent less students from low parent education backgrounds performing below the Basic level, compared with low-implementation schools. Furthermore, 25 percent of students from low parent education backgrounds reached the Proficient and Advanced levels at high-implementation schools, compared with 12 percent of such students at low-implementation schools. (See Table 5.)

Table 4
Differences in Reading Proficiency Levels
by Ethnicity and Mother's Education

	High- implementation Schools	Low- implementation Schools	Percentage Point Difference
Black Students			
Below Basic	18%	40%	-22%**
Basic	65	56	+9
Proficient/Advanced	17	4	+13**
White Students			
Below Basic	8	21	-13**
Basic	52	58	-6**
Proficient/Advanced	40	21	+19**
High Parent Education			
Below Basic	6	17	-11**
Basic	50	60	-10**
Proficient/Advanced	44	23	+21**
Low Parent Education			
Below Basic	12	32	-20**
Basic	61	55	+6**
Proficient/Advanced	27	13	+14**

Source: 2004 Middle Grades Assessment

**Differences are significant at the .01 level.

Table 5
Differences in Mathematics Proficiency Levels
by Ethnicity and Mother's Education

	High- implementation Schools	Low- implementation Schools	Percentage Point Difference
Black Students			
Below Basic	36%	62%	-26%**
Basic	49	34	+15**
Proficient/Advanced	15	4	+11**
White Students			
Below Basic	13	33	-20**
Basic	50	47	+3
Proficient/Advanced	36	20	+16**
High Parent Education			
Below Basic	12	28	-16**
Basic	48	49	-1
Proficient/Advanced	40	23	+17**
Low Parent Education			
Below Basic	23	48	-25**
Basic	52	41	+11**
Proficient/Advanced	25	12	+13**

Source: 2004 Middle Grades Assessment

**Differences are significant at the .01 level.

Science achievement patterns are similar to those of reading and mathematics, but considerably less progress has been made in science. High-implementation schools continue to reduce the percentages of minority and low parent education students who perform below the Basic level, but large percentages of students remain unprepared for rigorous science work in high school. Sixty-three percent of black students and 45 percent of students from low parent education backgrounds perform below the Basic level and are unprepared to study science successfully in high school.

Unlike what high-implementation schools are doing in reading and mathematics, these schools are failing to make significant progress in closing the achievement gap in science for black students. Schools have made a special effort to raise reading and mathematics achievement, and they can do the same in science. An engaging science curriculum and science teachers who use labs and projects to enrich their instruction will help schools close science achievement gaps rapidly for all students.

Table 6
Differences in Science Proficiency Levels
by Ethnicity and Mother's Education

	High- implementation Schools	Low- implementation Schools	Percentage Point Difference
Black Students			
Below Basic	63%	80%	-17%**
Basic	30	18	+12**
Proficient/Advanced	8	2	+6**
White Students			
Below Basic	29	45	-16**
Basic	38	35	+3
Proficient/Advanced	34	21	+13**
High Parent Education			
Below Basic	25	42	-17**
Basic	39	35	+4
Proficient/Advanced	36	23	+13**
Low Parent Education			
Below Basic	45	60	-15**
Basic	36	28	+8**
Proficient/Advanced	20	12	+8**

Source: 2004 Middle Grades Assessment

**Differences are significant at the .01 level.

All groups of students at schools more fully implementing the *MMGW* design have reached a significantly higher level of academic achievement. Even students who perform below the Basic level at high-implementation schools outperform traditionally higher performing student groups in schools that have implemented less of the *MMGW* design. In reading, for example, 3 percent less black students at high-implementation schools were below Basic, compared with white students at low-implementation schools. Five percent less students from low parent education backgrounds were below Basic in reading at high-implementation schools, compared with students from higher educational backgrounds at low-implementation schools. A similar pattern exists in mathematics when comparing students from lower and higher educational backgrounds.

Students at high-implementation schools, especially historically under-performing students, have a greater chance of meeting reading, mathematics and science performance goals. By adopting the *MMGW* design, districts and schools can begin to improve the achievement of all groups of students, regardless of ethnicity or parent education.

Comparing school and classroom practices at MMGW high- and low-implementation schools and studying actions taken by school and district leaders at high-implementation schools

Studying school and classroom practices is key to understanding the differences in student achievement between high- and low-implementation middle grades schools. Schools that have more fully implemented the *MMGW* design have done more to create a culture of high expectations and student engagement in meaningful, relevant and challenging assignments. These schools and their district leaders have a clear mission of higher achievement for all students, and teachers are able to work as teams to achieve the mission. District and school leaders provide quality extra help and guidance for more students, especially underperforming students, to ensure their readiness for high school and beyond.

Students at low-implementation schools are less likely to experience classroom practices that challenge and motivate them to learn. These students are less likely to see the connection, and therefore the importance, between school and the future. They are less likely to experience literacy and numeracy across the curriculum — basic skills for learning and achieving at a higher level. They also are less apt to get the extra help they need to succeed in challenging courses.

Perhaps the greatest difference between high- and low-implementation schools is the fact that high-implementation district and school leaders can identify the actions they have purposefully taken to increase student achievement. District personnel and school leaders and teachers at high-implementation schools identified areas needing improvement, took responsibility for student achievement and worked together to make meaningful changes.

Principal applauds teachers' dedication and ownership of the district vision of higher achievement

Continental Middle School in Continental, Ohio, joined *Making Middle Grades Work* in 2001 as part of a state grant. In doing so, school and district leaders agreed to work together to implement the *MMGW* Key Practices to prepare students for rigorous high school studies. Now, the school is among the top schools in the nation in implementing *MMGW*.

The faculty readily accepted responsibility for carrying out the districtwide vision of raising student achievement. Teachers assembled data for the administration showing which students and curricular elements needed improvement, and they worked in teams to design interventions for the identified problems.

"We used the teachers' research to establish goals, plan professional development and implement and monitor solutions," Principal Larry Claypool said. Actions the teachers said were necessary received support from the district. The actions included establishing an after-school tutoring program offered from 3 p.m. to 4:30 p.m. Monday through Thursday with transportation home for students.

As successful as the *MMGW* school-by-school efforts have been, more needs to be done to reach students and schools that do not perform as well as they should. Working with states and schools is not enough. The district is a critical link in school improvement. Successful schools in the *MMGW* network receive support from district personnel, who use data and research and align policies, resources and initiatives to help schools plan effectively for schoolwide improvement.

Urban district allocates personnel, money and time to benefit six *Making Middle Grades Work* schools

The **Little Rock School District** in Arkansas committed major resources of personnel, money and time to ensure the success of students at **Mabelvale Magnet Middle School** and other schools in this urban district. Six of the district's seven middle grades schools are members of *Making Middle Grades Work*. Mabelvale was an Arkansas pilot school for *MMGW* and is in its fifth year as a participant. It was identified recently as one of the top middle grades schools in the nation in implementing the *MMGW* Key Practices for raising student achievement. Mabelvale enrolls 641 students in grades six through eight. Eighty-four percent are black, and 83 percent are economically disadvantaged.

"The *Making Middle Grades Work* Key Practices are deeply embedded in the mission of the school district," said Linda Young, *MMGW* and grants coordinator for the Little Rock district. The mission is to equip all students with the skills and knowledge needed to succeed in high school and to become independent learners. "We want our schools to know that the district supports them and that they are not working in isolation," Young said.

Young points to the team effort of district personnel in guiding and supporting improvement activities at the school level, starting with the superintendent and the deputy superintendent and including the associate superintendent for instruction, the professional development director and academic coaches assigned to the schools. The district used Title II funds to secure external consulting and technical assistance from SREB.

SREB, in partnership with the Wallace Foundation, reviewed the research on districtwide improvement efforts and developed strategies that constitute a framework of conditions for district-led school improvement. These strategies, coupled with data on the experiences of successful schools in the *MMGW* network of schools, form a powerful catalyst for collaborative district- and school-led improvement of low-performing schools.

Strategy 1: *Acknowledge poor performance and set a vision for a rigorous curriculum supported by instructional improvement.*¹⁰

A study released in 2006 by Marzano and Waters found that goal-oriented districts experience improved student performance.¹¹ The study suggests that goal-oriented leadership means setting non-negotiable goals for achievement and instruction and garnering school board support for performance objectives. Other research findings reveal that the success of district-led reform depends on a vision for improving curriculum and instruction that unites the school board and the central administration and staff with school and teacher leaders. To create a credible vision, leaders at district and school levels must acknowledge poor performance and build the will to effect change.

Middle grades schools that have more fully implemented the *MMGW* design have a clear goal to prepare more students for a rigorous college-preparatory curriculum in high school. An academic core curriculum that accelerates learning will challenge students and appeal to their interests. District and school leaders can support teachers as they align core academic courses to essential high school readiness standards to prepare middle grade students to succeed in college-preparatory language arts, mathematics, science and social studies courses. Assignments, student work and classroom assessments must be benchmarked to high school readiness standards defined as what students must know and be able to do to succeed in a college-preparatory curriculum.

Intensive experiences in a rigorous curriculum are measured by indicators that include taking advanced courses, writing research papers, reading books, completing laboratory investigations, having hands-on science experiences and successfully completing Algebra I or pre-algebra in the middle grades.

¹⁰ SREB drew heavily on the Work by Learning First Alliance summarized in *Beyond Islands of Excellence: What Districts Can Do to Improve Instruction and Achievement in All Schools — A Leadership Brief*, March 2003.

¹¹ Marzano, Robert J. and Water, J. Timothy. *School District Leadership That Works: The Effect of Superintendent Leadership on Student Achievement*, Mid-Continent Research for Education and Learning, 2006.

Indicators for a Rigorous Curriculum

English/language arts

Students reported:

- taking advanced English/language arts classes;
- writing a major research paper (with footnotes and a bibliography) on a subject they chose once a year or once a semester;
- completing short writing assignments of one to three pages for a grade in English classes weekly; and
- reading a variety of materials equivalent to 11 or more books a year both in and out of school and demonstrating comprehension of materials read.

Mathematics

Students reported:

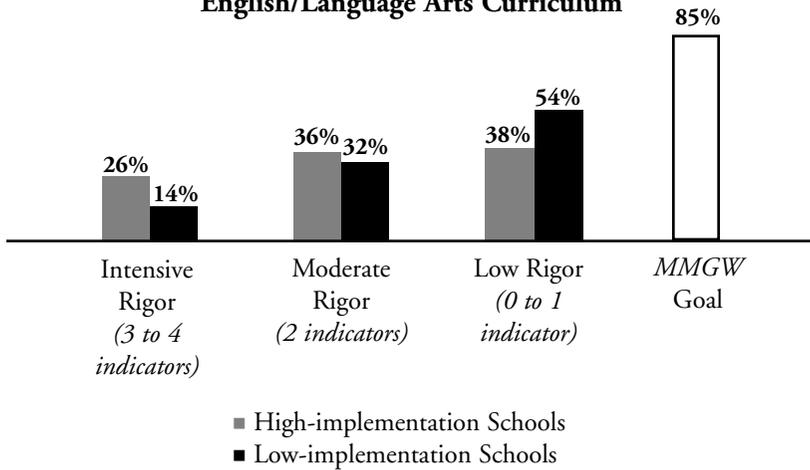
- taking a rigorous mathematics course during the year.
 - Intensive = First-year algebra or higher
 - Moderate = Pre-algebra
 - Low = Other mathematics courses

Science

Students reported:

- completing hands-on projects with living things in science;
- completing hands-on projects with chemistry in science;
- completing hands-on projects with simple machines in science;
- completing hands-on projects with the environment in science;
- using mathematics skills to solve problems in science;
- choosing a topic for laboratory investigations in science;
- designing an experiment on a topic they chose for laboratory investigations in science;
- preparing a written report on laboratory investigation results in science;
- presenting their laboratory results to the class; and
- taking integrated science during the year.

Figure 1
Percentages of Students Completing a Rigorous
English/Language Arts Curriculum

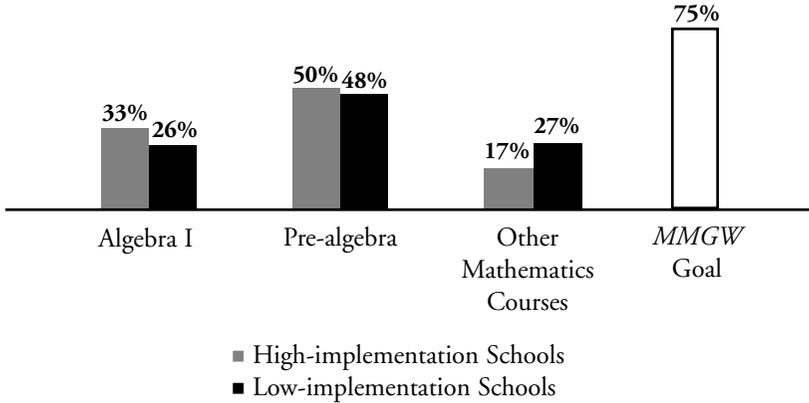


Source: 2004 Middle Grades Assessment

Comparisons of schools that have more fully implemented *MMGW* with those that have implemented fewer key practices and conditions show significant differences in curriculum rigor. More students at high-implementation schools take advanced courses, prepare major research papers, write short papers weekly and read more than 11 books during the school year. However, high-implementation schools challenge only about one-fourth of their students with the rigor necessary for proficiency in English/language arts — short of the goal of 85 percent envisioned by SREB. (See Figure 1.)

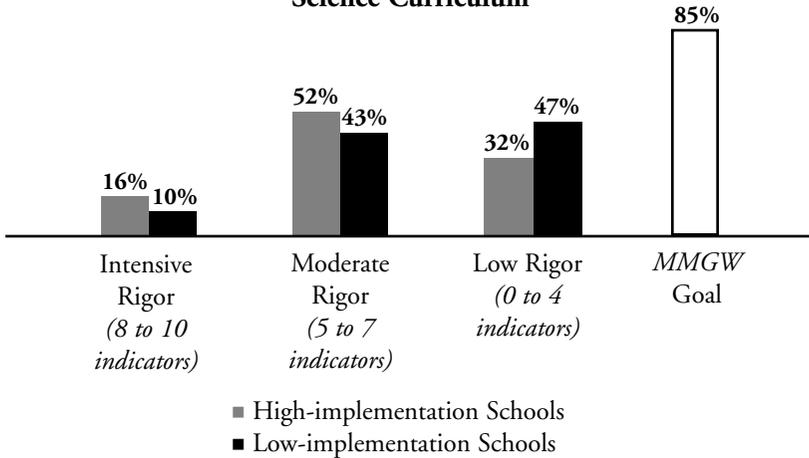
More than 25 percent of students in low-implementation schools took general mathematics courses below the pre-algebra level. The percentage taking low-level courses at high-implementation schools was 17 percent. Students who do not take challenging mathematics courses in the middle grades are much less likely to be successful in high school college-preparatory mathematics classes. (See Figure 2.)

Figure 2
Percentages of Students Completing a Rigorous Mathematics Curriculum



Source: 2004 Middle Grades Assessment

Figure 3
Percentages of Students Completing a Rigorous Science Curriculum



Source: 2004 Middle Grades Assessment

Too few students at both high- and low-implementation schools experienced a rigorous science curriculum. (See Figure 3.) Students at both sets of schools are not actively engaged in hands-on projects in their science classes and do not complete laboratory investigations in which they choose topics, complete experiments, prepare written reports and make oral presentations of the results. Too many students at both groups of schools will have difficulty completing college-preparatory biology, chemistry, physics and other science courses in high school.

District actions make a positive impact on student achievement

Superintendent Gary Jones of Continental Schools in Ohio believes gains in student achievement at **Continental Middle School** reflect positively on the district practice of setting goals for a more rigorous curriculum, keeping the school board informed and supporting the principal and staff to take ownership of school improvement. Students gained eight points in reading, four points in mathematics and eight points in science on the Middle Grades Assessment (MGA) from 2002 to 2004. The percentage of Continental students scoring at or above the Proficient level on the Ohio Sixth-grade Achievement Test in mathematics increased from 75 percent (the state requirement) in 2003 to 89 percent in 2004.

Strengthening the curriculum included making Algebra I the standard course for eighth-graders. Students not quite ready for Algebra I take pre-algebra. The school has adopted a full-inclusion model that allows special-needs teachers to co-teach Algebra I to special-needs students. The school received a special award for having more than 90 percent of students complete Algebra I or pre-algebra by the end of the eighth grade with a mean score that exceeded the *MMGW* high school readiness goal of 160 in mathematics.

An important step was to establish a direct communications link between the local board of education and the *MMGW* team heading the improvement effort. "The teachers keep me informed of things they are planning and things they have already done," board liaison Ronald Bradford said. "They look to the board for policy and financial support."

Strategy 2: *Develop a systemwide approach to curriculum and instructional improvement based on decisions supported by data.*

In successful districts, central office personnel push for implementation of the district curriculum, despite some opinion that such a focus is too prescriptive. These leaders recognize the need to change instructional practices and they systematically gather data on teaching and learning. They go beyond state test scores in their use of data and they base their instructional decisions on what works. Resnick and Glennan found that personnel at all levels in an instructionally focused district spent the bulk of their time and attention on instructional functions rather than managerial duties.¹² Successful districts develop indicators of school and district performance to ensure a coherent program of instruction. A rigorous curriculum alone will not guarantee improved student achievement. Students need engaging, relevant experiences to understand the more abstract concepts in the curriculum.

Literacy across the curriculum. Literacy skills are indispensable tools for student success in the middle grades and beyond. Reading, writing, speaking, listening and the development of vocabulary and research skills are necessary ingredients in mastering the curriculum. Indicators from the Middle Grades Assessment that measure literacy across the curriculum include students who report:

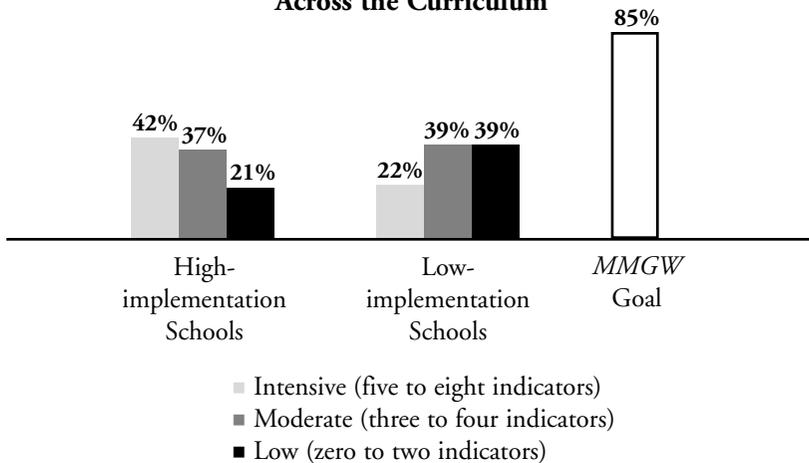
- making an oral presentation to the class on a project or an assignment to meet specific quality requirements in English/language arts classes once a semester or monthly;
- spending one hour or more reading outside of school on a typical day;
- reading 11 or more books during the year both in and out of school;
- using word processing or presentation software to complete English assignments monthly or weekly;
- developing and analyzing tables, charts and/or graphs in schoolwork often;
- using the Internet to find information for completing assignments often;

¹² Resnick, L., and Glennan, T. (2002). "Leadership for learning: A theory of action for urban school districts". In A.T. Hightower and M.S. Knapp (Eds.), *School Districts and Instructional Renewal*. New York: Teachers College Press.

- receiving samples of high-quality work to use as models monthly or weekly; and
- using a computer at school for schoolwork monthly or weekly.

Schools that more fully implement *MMGW* do a better job of engaging students in using literacy strategies in all classes. (See Figure 4.) These schools require more effort from their students in the form of meaningful homework and engaging assignments.

Figure 4
Percentages of Students Experiencing Literacy
Across the Curriculum



Source: 2004 Middle Grades Assessment

More students at high-implementation schools are engaged in the language of their subject matter. (See Table 7.) These students converse, do homework, and read and demonstrate understanding of subject-related materials through both oral and written communication. Teachers use computers and other technology to engage students in using the languages of various fields of study. All schools should incorporate more literacy skills into all subject areas for maximum improvement.

Tennessee district takes action to prepare middle grades students for high school

All six schools that teach middle grades students in the **Wilson County, Tennessee**, school district are members of *Making Middle Grades Work*. The half-dozen schools include two “classic” middle grades schools with 2,000 students in grades six through eight, three elementary/junior high schools enrolling 450 middle grades students, and one school with 200 students in grades seven and eight. In total, 2,650 middle grades students in one district are benefiting from a school improvement plan that incorporates the *MMGW* Key Practices.

“We visited *Making Middle Grades Work* schools in other states and decided the initiative was exactly what we needed,” said Felicia Duncan, K–8 curriculum supervisor and director of school improvement planning for the Wilson County Schools.

The district incorporates *MMGW* Goals, the framework of Key Practices and Conditions and data into the middle grades school improvement plan, submitted to the Tennessee Department of Education every other year. The key elements of the plan call for schools to know where they stand in raising student achievement, recognize their weaknesses and focus on using state standards to get more students ready for high school.

Each Wilson County school with middle grades students has a data team trained by the district to be responsible for collecting, interpreting and using information. The data team shares findings with teachers and parents and with the school leadership team that incorporates the data into the school improvement plan.

The district also commits funding to send 50 to 60 middle grades administrators and teachers to the national *High Schools That Work* Staff Development Conference each summer. The teachers participate in pre-conference sessions and conference workshops designed for middle grades leaders and faculty.

“All teachers who go to the conference agree to attend sessions that support their school improvement plans and to share what they learn with other teachers at the school when they return,” Duncan said. “We get more than our money’s worth in professional development from *Making Middle Grades Work*.”

Comprehensive testing is a new concept for Wilson County middle grades students. In the 2005–2006 school year, the district worked with principals and teachers to develop common midterm and final exams in mathematics. In 2006–2007, midterm and final exams are being given in English/language arts, science and social studies as well as mathematics.

“The purpose of the tests is to increase student learning by ensuring that students are being taught to grade level and to high school readiness standards,” Duncan said.

Table 7
Literacy Across the Curriculum

Indicator	High- implementation Schools	Low- implementation Schools	Percentage Point Difference
Stood before the class and made an oral presentation on a project or an assignment to meet specific quality requirements in English/ language arts classes once a semester or monthly	69%	54%	+15**
Read 11 or more books this year both in and out of school	38	25	+13**
Used word processing or presentation software to complete English assignments monthly or weekly	48	32	+16**
Developed and analyzed tables, charts and/or graphs in schoolwork often	46	31	+15**
Used the Internet to find information for completing assignments often	62	47	+15**
Received samples of high-quality work to use as models monthly or weekly	43	29	+14**

Source: 2004 Middle Grades Assessment

**Differences are significant at the .01 level.

Iowa school district's vision for student achievement includes professional development for reading and writing across the curriculum

The shared vision of **Indianola Community Schools** in Iowa is "Proud Traditions...Unlimited Possibilities." With these four inspiring words and lots of strategic planning, the school district has succeeded in bringing everyone together to focus on improving student achievement.

The Iowa Department of Education reported in 2006 that Indianola Middle School outpaced other schools statewide in the percentages of eighth-graders scoring at the proficient level on state tests of reading and mathematics from 2003 to 2005. The totals were 81 percent in reading, versus 70 percent for the state, and 88 percent in mathematics, versus 74 percent for the state.

"Indianola Middle School with the district's support adopted *Making Middle Grades Work*, and the initiative has made it possible for the school to make even more progress," Superintendent Mike Teigland said.

Reading and writing districtwide

The middle grades school improvement effort began with a district focus on teaching reading in the content areas. After receiving professional development, all teachers implemented instructional strategies designed to improve the reading skills of students in all courses.

To continue the literacy initiative, the school's leadership team and staff worked with the district to adopt a writing program. As a result, all teachers districtwide received professional development on a writing framework from the Northwest Regional Educational Laboratory to improve students' writing skills. The model is designed to provide a common vision of what "good writing" looks like.

Teachers at the middle school are creative in involving students in reading and writing across the curriculum. In one project designed to improve reading, writing and teamwork, the teacher asks students to describe actions that a blindfolded classmate must take to navigate an obstacle course. In another literacy activity, seventh-graders write and edit scripts for puppet shows that they produce.

Engaging and meaningful mathematics instruction. Mathematics skills acquired during the middle grades lay the foundation for higher-level reasoning in advanced mathematics, science and technology-related courses. Students' mathematics achievement improves when teachers emphasize reasoning and problem solving combined with cooperative grouping practices. Students succeed when they see a connection between what they are learning in mathematics and how it is used to solve everyday problems.

Specific differences exist between high- and low-implementation schools in practices related to numeracy. (See Table 8.) Significantly more students at high-implementation schools use technology in the learning process. Eight percent more students use a scientific calculator, 15 percent more use the Internet to find information, and 13 percent more use word processing software to complete assignments. Additionally, 15 percent more students at high-implementation schools develop and analyze tables, charts and graphs in their schoolwork.

More students at high-implementation schools, compared with low-implementation schools, are involved in assignments and activities that provide a connection between mathematics and the real world. Nine percent more students solve problems from a source other than the textbook. Thirteen percent more students use their mathematics skills to solve problems in other classes. Five percent more are in classrooms where teachers show how mathematics can be used to solve real-world problems, and 12 percent more are in classrooms where teachers know the subject matter and can make it interesting and useful.

Significantly more students at high-implementation schools are involved in activities that emphasize teamwork. Sixteen percent more work with other students to complete challenging mathematics assignments, 16 percent more work in groups to brainstorm how to solve mathematics problems, and 7 percent more are in classrooms where teachers encourage students to help and learn from each other.

More students at high-implementation sites experience literacy in their mathematics courses than do students at low-implementation schools. Seventeen percent more explain to the class how they solved mathematics problems. Ten percent more write explanations for how they solved problems. Sixteen percent more explain different ways to solve a mathematics problem.

Table 8
Engaging and Meaningful Mathematics Instruction

Indicator	High- implementation Schools	Low- implementation Schools	Percentage Point Difference
Use of Technology			
Use a scientific calculator to complete mathematics assignments at least weekly	58%	50%	+8**
Use the Internet to find information for completing assignments often	62	47	+15**
Use word processing software to complete an assignment or project often	49	36	+13**
Analyzing data			
Develop and analyze tables, charts and/or graphs in their schoolwork often	46	31	+15**
Real-world connections			
Solve mathematics problems other than from textbooks at least weekly	72	63	+9**
Use their mathematics skills to solve problems in other classes monthly or weekly	57	44	+13**
Mathematics teachers show them how mathematics can be used to solve problems in real life	88	83	+5**
Mathematics teachers know their subject and can make it interesting and useful often	42	30	+12**

Table 8
Engaging and Meaningful Mathematics Instruction *(continued)*

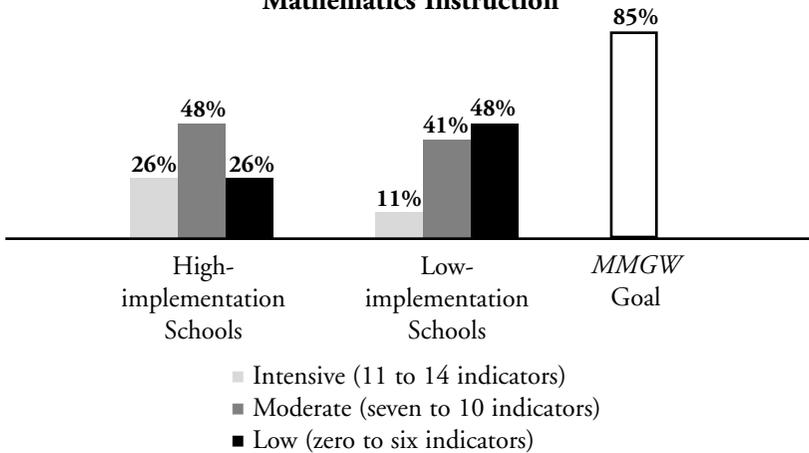
Indicator	High- implementation Schools	Low- implementation Schools	Percentage Point Difference
Teamwork			
Work with one or more students on a challenging mathematics assignment monthly or weekly	71%	55%	+16**
Work in groups to brainstorm how to solve a mathematics problem monthly or weekly	58	42	+16**
Teachers encourage students to help each other and learn from each other sometimes or often	31	24	+7**
Literacy			
Explain to the class how they solved a mathematics problem monthly or weekly	72	55	+17**
Write a few sentences about how they solved a mathematics problem monthly or weekly	59	49	+10**
Explain different ways to solve mathematics problems monthly or weekly	73	57	+16**

Source: 2004 Middle Grades Assessment

**Differences are significant at the .01 level.

Mathematics indicators highlight differences in practices related to numeracy between high- and low-implementation schools. Seventy-four percent of students at high-implementation schools had intensive to moderate rich and engaging learning experiences in mathematics classes, compared with 52 percent of students at low-implementation schools. (See Figure 5.) Certain factors point the way to higher achievement: use of technology in the learning process; assignments and activities that connect schoolwork and the real world; activities that emphasize teamwork; and use of literacy skills in mathematics courses.

Figure 5
Percentages of Students Experiencing Engaging and Meaningful Mathematics Instruction



Source: 2004 Middle Grades Assessment

Mathematics scores are on the rise in one Arkansas district

The **Little Rock School District** in Arkansas and its middle grades schools are working to improve mathematics performance. As a result, Mabelvale Magnet Middle School has shown substantial gains in mathematics achievement on the benchmark tests of the Arkansas Comprehensive Testing, Assessment and Accountability Program (ACTAAP). The percentages of students scoring at or above the Proficient level in mathematics rose for sixth-graders from 9 percent in 2004 to 35 percent in 2006, for seventh-graders from 22 percent to 31 percent and for eighth-graders from 11 percent to 27 percent.

School and classroom strategies that have contributed to higher mathematics achievement include the following:

- **Mathematics classes are double-blocked.** In an A-B block schedule, classes meet on alternate days. Sixth-graders at Mabelvale Magnet Middle School attend mathematics classes each day. Seventh- and eighth-graders taking pre-AP courses began receiving double doses of mathematics in the 2005–2006 school year. Double-blocking for all regular and special education students was instituted in fall 2006.
- **“Math Madness” is a schoolwide event.** On Mondays and Tuesdays, every student at every grade level works a mathematics problem based on benchmark test questions in every class across the curriculum.
- **Teachers are encouraged to enroll in college-level mathematics courses.** The district partnered with the College of Science and Mathematics at the University of Arkansas at Little Rock and the Mathematics Education Collaborative (MEC), a nonprofit organization founded to help schools and districts engage with their communities in support of quality mathematics instruction, to increase the mathematics content knowledge of Mabelvale teachers and other district mathematics teachers. Through this grant-funded initiative, participating teachers may receive up to nine hours of graduate-level credit in mathematics.
- **Students and teachers use technology in mathematics classes.** The district purchased graphing calculators for all students, computers and software such as the PLATO interactive learning program and hand-held PLATO devices that students can use to study at home.
- **More students are taking Algebra I.** The number of Algebra I classes grew from one class six years ago to four classes now. “Seventy-four percent of our students scored at or above the proficient level on the state Algebra I end-of-course test in 2006,” Principal Ann Blaylock said.

Scientific Literacy

Scientific knowledge is more than just theories and formulas. It is also understanding scientific processes and methods. While students learn basic facts and formulas, they need to practice scientific inquiry and methods to apply in science and other studies as well. They need to be able to make decisions about how to approach a problem, conduct an investigation, analyze data and present and defend results. Students must be engaged in doing science, not just in memorizing definitions of terms, facts and classification systems.

Specific differences exist between high-implementation and low-implementation schools in practices related to engaging students in learning science. (See Table 9.) Significantly more students at high-implementation schools perform science investigations. Fourteen percent more work on science projects that take a week or longer to complete; 8 percent more use equipment for laboratory activities; and 12 percent more are in classrooms where teachers know the subject and can make it interesting and useful.

Significantly more students at high-implementation schools experience literacy strategies in the science classroom. Nine percent more complete written laboratory reports based on their investigations; 15 percent more use computers, lab books or notebooks to keep notes and records; and 8 percent more write long answers to exam questions.

More students at high-implementation schools, compared with low-implementation schools, are involved in teamwork. Sixteen percent more students work with other students to complete challenging science assignments. Seven percent more are in classrooms where teachers encourage students to help and learn from each other.

Table 9
Engaging Science Experiences

Indicator	High- implementation Schools	Low- implementation Schools	Percentage Point Difference
Investigations			
Do science projects that take a week or more	81%	67%	+14**
Use equipment to do activities in a science laboratory with tables and sinks once a semester or monthly	52	44	+8**
Science teachers know their subject and can make it interesting and useful often	42	30	+12**
Literacy			
Complete written lab reports on scientific investigations once a semester or monthly	54	45	+9**
Complete short writing assignments of one to three pages for a grade in science classes once a semester	28	25	+3*
Use a lap-top computer, a lab book or a notebook to keep records, logs and comments when doing science experiments or investigations in school	73	58	+15**
Write long answers to questions on tests in science monthly	44	36	+8**

Table 9
Engaging Science Experiences (*continued*)

Indicator	High- implementation Schools	Low- implementation Schools	Percentage Point Difference
Teamwork			
Work with one or more students on a challenging science assignment once a semester or monthly	74%	58%	+16**
Teachers encourage students to help each other and learn from each other sometimes or often	31	24	+7**
Use of Technology			
Use word processing software to complete an assignment or project often	49	36	+13**
Use the Internet to find information for completing assignments often	62	47	+15**
Data Analysis			
Develop and analyze tables, charts and/or graphs in schoolwork often	46	31	+15**

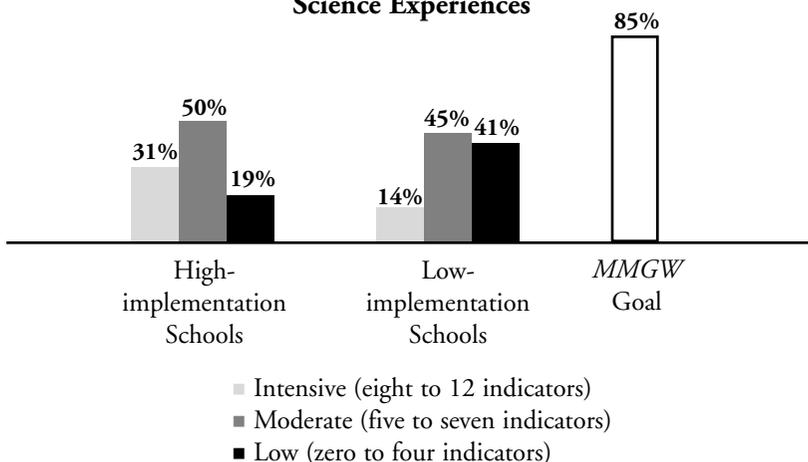
Source: 2004 Middle Grades Assessment

* Difference is significant at the .05 level.

**Differences are significant at the .01 level.

Significantly more students at schools that more fully implement *MMGW* are engaged in activities that develop not only science knowledge but also basic reasoning skills and the language of science. (See Figure 6.) Eighty-one percent of students at high-implementation schools experience engaging and challenging assignments in science classes, compared with 59 percent at low-implementation schools. As a result, students at the high-implementation schools are better prepared for high-level physics, biology and chemistry courses in high school.

Figure 6
Percentages of Students Experiencing Engaging
Science Experiences



Source: 2004 Middle Grades Assessment

Science classes benefit from support for new classroom practices

The **Paint Valley Middle School District** in Ohio supports its middle grades schools to 1) try new things; 2) align curriculum and assessment to grade-level standards; 3) obtain instructional materials and equipment; and 4) create exhibitions for students to display their science projects.

Principal Brent Taylor has high praise for his faculty, which has taken the initiative to study data and recommend ways to improve the curriculum and instruction. “Our teachers work really hard to know the standards and to help all students get where they need to be,” he said. “The district encourages teachers to try new things that they believe will be effective.”

Middle grades teachers aligned the core academic curriculum to the Ohio standards in English/language arts, mathematics, science and social studies. They also greatly increased the amount of project-based learning with real-world connections, especially in mathematics and science.

Students take tests in reading, mathematics, science and social studies at the end of each nine-week period. The district pays for the results to be analyzed and returned to the school through OASIS (Online Assessment Student Information System) as part of LCAP (the Literacy Curriculum Alignment Project) at the Ohio Center for Essential School Reform. Presented as charts

(continued)

and graphs, the data analysis allows the principal and teachers to discuss what is needed and to make plans to raise the achievement of individuals as well as groups of students.

Jenny Welch, eighth-grade science teacher, says the district has helped the science department make learning more exciting for students through donations of materials and equipment. Some examples are a wind tunnel to test aerodynamic pressure; interactive SMART boards for doing manipulatives; and probeware to measure temperature, dissolved oxygen, pressure and pH values. The district pays for a subscription to Gizmos from ExploreLearning, a virtual lab designed to raise student achievement in mathematics and science. Students who use Gizmos can become involved with online projects such as genetics and mouse breeding.

Students complete three major projects during the school year. In the school's technology-oriented science environment, students build bridges and design and race model cars. The bridges must be able to support a specified weight. The cars must hold up in competitions held in the school gymnasium. In both cases, students go back and forth to the lab as they improve their products.

"I like to assign open-ended projects that allow students to earn extra points," Welch said. "For example, if a project is worth 300 points, at least half of my students will go over and beyond to try to earn 200 additional points. It challenges them to try harder."

Students in grades six through eight participate in the annual science fair, another activity where the district lends considerable support. The district bought display tables and contributes awards for the best projects. It also pays entry fees and transportation costs for students to enter district and state science fairs. This contribution amounts to \$20 to \$45 per student, Welch said.

The investment in science is paying off in higher student achievement. The percentage of Paint Valley Middle School students scoring at or above the Basic level in science on the Middle Grades Assessment (MGA) rose from 57 percent in 2000 to 80 percent in 2002 — an increase of 23 percentage points.

When asked about their science experiences, Paint Valley eighth-graders taking the 2002 Middle Grades Assessment student survey reported having many more lab-based assignments, compared with students at other high-scoring middle grades schools. Ninety-three percent of Paint Valley eighth-graders said they completed written lab reports on science projects at least once a month, compared with 81 percent of eighth-graders at other high-scoring schools.

Strategy 3: Connect professional development to district goals, students' needs and curriculum and instructional improvement, and support schools in helping every student succeed.

Poorly performing districts often face the challenges of high teacher turnover and too many inexperienced teachers. Districts that have succeeded in overcoming these challenges have created professional development strategies that are consistent, organized, thorough and ongoing. They conduct professional development for school and teacher leaders that is linked to the actual instructional program taught to students in the classroom.¹³ Districts that raise student achievement realize the importance of knowledge and skills for principals and teachers, and they develop learning communities through professional development. Likewise, principals and teachers in improving districts understand that they have a duty to improve instructional practices.

Professional development without time to integrate the information and get follow-up feedback in the classroom from school leaders and peers does not result in improved instruction. Examples for a districtwide focus include the following:

- **Cooperative group learning** — students working in groups on different tasks to explore content, complete assignments and share knowledge.
- **Technology** — integrating various technologies into research assignments and project-based learning regularly.
- **Questioning** — requiring all students to think beyond recall, connect what they learn across content areas, defend their positions and focus attention on understanding concepts.
- **Literacy across the curriculum** — emphasis on organizing for clear and purposeful writing and speaking.
- **Lesson structure** — lessons that use visuals to illustrate a concept, include an application to a real-life problem and conclude with students' written descriptions of solutions used.

¹³ Resnick, L., and Glennan, T. (2002). "Leadership for learning: A theory of action for urban school districts". In A.T. Hightower and M.S. Knapp (Eds.), *School Districts and Instructional Renewal*. New York: Teachers College Press.

- **Comprehensive guidance** — teacher-advisers who help students set goals and develop five-year plans for high school and postsecondary careers and study.

High Expectations. All students should be taught to the same high standards. The standards should be supported by the principal and communicated by teachers so that students will know what is expected of them. Working together, principals and teachers at schools that more fully implement *MMGW* send a clear, consistent message to students about the amount and quality of work expected. Schools raise expectations through high standards, assignments that engage and challenge students, relevant homework, and school and classroom procedures.

Significantly fewer students at low-implementation schools are encouraged to do well; fewer have high standards that have been set for them or receive help in meeting high standards; fewer revise written work to improve its quality; fewer work hard to meet high standards; fewer spend quality time on homework assignments; and more never or rarely turn in assignments. High-implementation schools have a culture of high expectations in which students are expected to work hard and succeed. Students at these schools receive encouragement, support and extra help to meet those expectations. Students at low-implementation schools are less likely to experience a culture of high expectations. (See Table 10.)

Table 10
High Expectations Experiences

Indicator	High- implementation Schools	Low- implementation Schools	Percentage Point Difference
Most teachers encourage me to do well in school often.	70%	60%	+10**
Teachers set high standards and are willing to help me meet them often.	51	38	+13**
Teachers clearly indicate the amount and quality of work necessary to earn a grade of A or B at the beginning of a project or unit often.	60	48	+12**
I revise essays or other written work several times to improve the quality often.	29	22	+7**
I work hard to meet high standards on assignments often.	50	41	+9**
I spend one hour or more on homework each day.	29	23	+6**
School and classroom rules are defined and clear often.	64	53	+11**
I fail to complete or turn in assignments never or rarely.	68	58	+10**

Source: 2004 Middle Grades Assessment

**Differences are significant at the .01 level.

Maryland school district supports schools' focus on students as individuals and empowers schools to oversee professional development

St. Michaels Middle/High School in Talbot County, Maryland, joined *Making Middle Grades Work* when district and school leaders recognized that the school had benefited from implementing *High Schools That Work* in the upper grades. Middle grades and high school students at St. Michaels share the same building and the same principal. The middle grades school encompasses grades seven and eight.

The middle grades at St. Michaels were in good standing with the state but lacked a comprehensive reform framework to improve the achievement of a diverse group of students. Superintendent Karen Salmon said, "The neediest students have few or no resources for learning at home."

After joining *MMGW*, St. Michaels became one of the initiative's high-implementation schools. It raised student achievement by buying into the vision, the curriculum, the instructional practices, and the guidance and advisement services that characterize a school fully implementing the *MMGW* model.

Full attention from leaders, teachers and parents

By focusing on students as individuals rather than as groups, the Talbot County school district ensures that each student has the full attention of the principal, teachers, counselors and parents in achieving academic success.

Frank Hagen, principal and instructional leader at St. Michaels Middle/High School, keeps a list of students that he and his faculty have determined need intervention to improve their academic performance. Before school begins and every two months during the school year, he meets with the superintendent and the assistant superintendent to discuss his case load of students who have failed to reach the proficient level in the academic areas assessed by the state. They talk about how each student is performing and what the school needs to do to help the student make needed academic gains.

The district has made it possible for each middle grades school to schedule a 45-minute intervention period each day for enrichment as well as extra help. Students attend in groups that reflect their performance in reading and mathematics. As their performance changes, they move from one group to another.

Quality Extra Help. Districts and school and teacher leaders who are successful in raising student achievement understand that higher standards are not enough. Students will need extra help and support to succeed in more rigorous course work. Extra help should not just be made available but should be required of students who are not meeting expectations.

Significantly more students at high-implementation schools know that their teachers care about them and will not let them get by without doing assigned work. They also know that they can receive extra help when needed without difficulty and that their teachers are available to provide assistance before, during or after school. As a consequence of extra help, more students gain a better understanding of their schoolwork and try even harder. Fourteen percent more students at high-implementation schools than at low-implementation schools report being able to get assistance when needed without difficulty. Fifteen percent fewer students at low-implementation schools report that their teachers are available to help them with their studies. (See Table 11.)

Research shows that academic failure — a process that begins in the middle grades — is a common reason for many students to drop out of high school. Students need to know that their teachers care about their success and are available to provide extra help when needed.

Table 11
Extra-help Experiences

Indicator	High- implementation Schools	Low- implementation Schools	Percentage Point Difference
Teachers care about me enough that they will not let me get by without doing the work often.	45%	35%	+10**
I am able to get extra help when needed from teachers without much difficulty often.	51	37	+14**
My teachers and other adults at school are available before, during or after school to help me with my studies a few times a week.	60	45	+15**
The extra help I received at school helped me to understand schoolwork better sometimes or often.	68	61	+7**
I tried harder on schoolwork after receiving extra help sometimes or often.	68	62	+6**

Source: 2004 Middle Grades Assessment

**Differences are significant at the .01 level.

District listens carefully and responds to what the middle grades school needs to diagnose and address weaknesses in student achievement

North Myrtle Beach Middle School in South Carolina benefits from being in Horry County, a technology-rich school district where leaders pay careful attention to the needs of students by tailoring services such as professional development to improve instruction. “We do a lot of listening,” said Cindy Ambrose, the district’s chief academic officer.

In Little River, South Carolina, the middle grades school enrolls more than 1,000 students in grades six through eight. It ranks high nationally among schools in implementing the *Making Middle Grades Work* Key Practices.

Principal Virginia Horton points to a number of important areas where the district has provided support:

- The district invested in Measures of Academic Progress (MAP) reading, mathematics and language usage tests from the Northwest Evaluation Association (NWEA). The MAP program is a state-aligned, computerized program that provides educators with diagnostic information to improve teaching and learning. North Myrtle Beach Middle School gives the tests three times a year. Teachers have access to a Web site where they obtain MAP achievement information on individual students or an entire class.
- The school’s extra-help program receives district funding to compensate teachers staying after school two afternoons a week to assist students. Teachers distribute printouts of students’ grades every four weeks to let students and parents know where help is needed. They also contact parents to encourage them to have their students participate in extra-help sessions. When report card time rolls around, the school holds a night meeting for parents to receive the reports directly from their students’ teachers. A student that has failed a state test is immediately scheduled for a parent-teacher conference. More than 80 percent of parents participate.
- The school uses Scholastic’s *Read 180* system to assist students with identified weaknesses in reading. The district bought the initial license to implement the program, which combines technology, printed materials and professional development to help teachers confront literacy problems.

(continued)

- The district offers extensive professional development in the summer and throughout the year for principals as well as teachers. The topics are based on needs identified by data and are designed to build a professional learning community within the district.

North Myrtle Beach Middle School's extra-help efforts have paid off in higher student achievement. The percentages of students scoring at or above the proficient level on the state Palmetto Achievement Challenge Tests (PACT) increased from 32 percent in 2003 to 47 percent in 2004 in English/language arts and from 44 percent in 2003 to 56 percent in 2004 in mathematics. Almost 50 percent of students participating in the Middle Grades Assessment (MGA) reported that extra help resulted in better understanding of their schoolwork. The same percentage said they exerted more effort to do their schoolwork after receiving extra help.

Quality Guidance. District and school leaders recognize that guidance, while important to students' success now and in the future, is especially crucial during the middle grades. Students need to leave the middle grades with a clear and purposeful plan for high school studies. The chances of success increase if students understand what is expected of them and the requirements they must meet to reach their goals. Students who are encouraged to take more challenging courses, to have a written plan for their high school studies and to receive help in developing the plan will have a clearer understanding of what is expected in high school and beyond.

High-implementation schools differ from low-implementation schools in a number of ways in practices related to guidance and advisement. (See Table 12.) Significantly more students at high-implementation schools are involved in planning for high school. These schools are doing more to help students look to the future and to involve parents in the process. Seventeen percent more students at high-implementation schools than at low-implementation schools have a written plan for courses they will take in high school and had help from parents and someone at the school in developing the plan. More than 40 percent of students at low-implementation schools do not have a plan for high school studies.

Table 12
Guidance Experiences

Indicator	High- implementation Schools	Low- implementation Schools	Percentage Point Difference
Planning			
They have a written plan for courses they plan to take in high school.	61%	44%	+17**
Their parents and someone at school helped them write their plan for courses they will take in high school.	54	37	+17**
Expectations			
They expect to take notes from a lecture weekly in ninth-grade English.	59	46	+13**
They expect to use mathematics to solve real-world problems weekly in ninth-grade mathematics.	52	39	+13**
They have talked with teachers or other adults at school about what they will need to know and be able to do in the ninth grade in the seventh and eighth grades.	31	26	+5**
Course taking			
They report being encouraged by a counselor or teacher to take algebra in grades seven or eight.	29	24	+5**

Source: 2004 Middle Grades Assessment

**Differences are significant at the .01 level.

More students at high-implementation schools have a clear understanding of what will be expected in high school. Thirteen percent more students expect to take notes from lectures in English/language arts and to use mathematics in solving real-world problems in mathematics classes. There is a greater awareness at high-implementation schools that the decisions made by students in the seventh and eighth grades will impact their future success in high school and will keep career opportunities open to them.

Too few students at high- and low-implementation schools appear to have been encouraged to take an accelerated mathematics curriculum. While 5 percent more students were encouraged by a teacher or a counselor to take algebra in the middle grades, fewer than one-third of all students were encouraged to do so.

Guidance counselors stick with students

St. Michaels Middle/High School in Maryland received support from the district to retool its guidance and advisement system to allow its two counselors to stay with the same group of students in grades seven through 12, rather than have one counselor for the middle grades and one for high school. In addition, each student has a teacher-adviser. One day per year is designated as a scheduling day for students to discuss their five-year education and career plans with parents, teacher-advisers and counselors.

Barlow-Vincent Elementary School in Ohio covers kindergarten through grade eight. It launched a teacher-adviser program two years ago. To ensure its success, the district formed a committee of teachers and counselors to write an advisory curriculum of lessons and activities to help students complete education and career plans. The curriculum includes discussions of academic issues, such as grades, study habits and test-taking skills; goal setting for post-high school years; team building; and improving social skills. Teacher-advisers meet with seventh- and eighth-graders during a 40-minute advisory period once a week.

District schools train their own teachers to implement the advisory curriculum and are encouraged by the district to tweak the program as needed for their students. Barlow-Vincent Elementary School calls its advisory program B-V Connections. The relationship that develops between a student and a caring adult in these sessions is important when students need someone to help with plans and problems.

Strategy 4: *Leadership is distributed among staff and faculty with a commitment to continuous improvement over the long haul.*

Leaders in successful school districts rely on multiple sources of guidance and direction. They recognize the importance of using expertise within the system by creating teams and sharing authority and responsibility. In these districts, leaders focus on both achievement and the development of future leaders who can continue the work of school improvement. Successful districts extend leadership to assistant principals, teacher leaders, union leaders and school board members. They build a culture of shared values and goals around instructional improvement.¹⁴ In this common culture, all staff members see themselves as partners and make decisions based upon what is best for students. Without such shared decision-making, the essential work of schools cannot be accomplished.¹⁵

Teachers at high-implementation schools are committed to continuous improvement and engaged in improvement activities. Schools that have more fully implemented the *MMGW* design are much more likely than low-implementation schools to have teachers who seek new ways to improve student achievement and evaluate their efforts. Teachers at high-implementation schools are more likely to see themselves in partnership with district and school leaders to establish a demanding yet supportive environment for academic achievement. (See Table 13.)

¹⁴ Marsh, J.A. (2000, September). Connecting Districts to the Policy Dialogue: A Review of Literature on the Relationship of Districts with States, Schools, and Communities. University of Washington: Center for the Study of Teaching and Policy.

¹⁵ Walter, F. (2001, January). District Leaders' Guide to Reallocating Resources. Portland, OR: Northwest Regional Educational Laboratory.

Table 13
Continuous School Improvement

Indicator	High- implementation Schools	Low- implementation Schools	Percentage Point Difference
Teachers report an intensive emphasis on continuous improvement at their school.	37%	22%	+15**
Teachers strongly agree that teachers in this school are always learning and seeking new ideas on how to improve student achievement.	58	40	+18**
Teachers strongly agree that the staff uses data reports to continuously evaluate the school's academic and technical programs and activities.	48	36	+12**
Teachers strongly agree that teachers and administrators in this school work as a team to improve the achievement of students.	49	33	+16**
Teachers strongly agree that goals and priorities for this school are clear.	51	40	+11**
Teachers strongly agree that teachers in this school maintain a demanding yet supportive environment that pushes students to do their best.	53	34	+19**

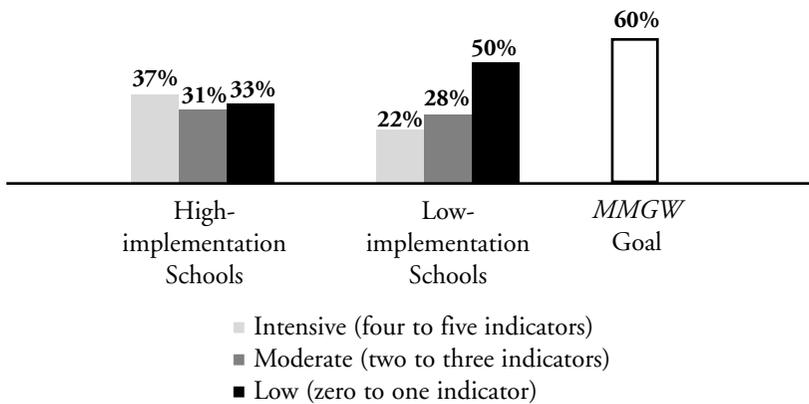
Source: 2004 Middle Grades Assessment

**Differences are significant at the .01 level.

More than half (51 percent) of teachers at high-implementation schools believe that the schools' goals are clear. This compares with only 40 percent of the faculty at low-implementation schools. When asked about individual goals, almost the same percentages (51 percent versus 41 percent) agree that it is a very important goal to prepare almost all students with the academic knowledge and skills needed in college-preparatory English, mathematics and science. However, lower percentages (30 percent at high-implementation schools and 21 percent at low-implementation schools) strongly agree that the school's primary role should be to prepare all eighth-graders to leave the middle grades with the knowledge and skills necessary to succeed without remediation in a ninth-grade college-preparatory curriculum.

Thirty-seven percent of teachers at high-implementation schools feel that their schools place an intensive emphasis on continuous improvement. This compares with only 22 percent of teachers at low-implementation schools. (See Figure 7.) A sense of urgency is absent in the majority of schools. The *MMGW* goal is for 60 percent of the faculty to perceive an intense focus on continuous improvement. Without a sense of urgency, progress on school improvement will wane considerably.

Figure 7
Percentages of Teachers Reporting an Emphasis on
Continuous School Improvement



Source: 2004 Middle Grades Assessment

Using lessons learned in working with networks of schools, SREB designed a continuous improvement process that includes a leadership team composed of the superintendent, the principal, selected teacher leaders and a guidance counselor to launch a school on the path to higher achievement. The team progresses through a three-year sequence of leadership modules focusing on data usage, teamwork, literacy and numeracy curricula, instruction and assessment, and capacity building. The team and the faculty ask and answer the following questions:

- Do all students have access to rigorous content in core subjects?
- Do all students have rich hands-on learning experiences?
- Is the goal of readiness for rigorous high school work the same for all students?
- How can teachers reteach concepts effectively to those who do not master them initially?

The leadership team also works regularly with students to find answers to the following questions:

- What assignment are you working on?
- Why do you need to know what is in these assignments?
- What have you learned in the past that will help you with these assignments?
- How do you know when your work is good enough to hand in to the teacher?
- What will happen if your work is considered not good enough?

All district actions are linked to improvement

Warren Local Schools, geographically the largest school district in Ohio, has involved all four elementary schools with grades six through eight in *Making Middle Grades Work*. **Barlow-Vincent Elementary School** in the district has been identified as one of the top schools nationally in implementing the Key Practices of *MMGW*.

The district took action on its commitment to school improvement by creating the position of district school improvement coordinator. Barbara Augustine, assigned to that post, organized a district network of principals and school improvement coordinators from all of the schools. The group also includes representatives of **Warren High School**, a member of *High Schools That Work* and the home high school for the district. The network meets at least monthly to discuss progress in implementing the district school improvement plan and school-specific improvement plans. It addresses topics such as interpreting and using data, aligning the curriculum across grade levels, adding academic rigor, organizing teacher teams, implementing adviser-advisee programs, providing extra help and evaluating site action plans.

“The frameworks of *Making Middle Grades Work* and *High Schools That Work* mesh so completely that we all have the same understanding of what is important in raising student achievement,” Augustine said. Everything the district does is connected to the school improvement plan. “We don’t do 15 different initiatives,” Augustine said. “If something doesn’t fit the plan, we don’t do it.”

A year ago, the district conducted a community meeting to invite input from parents and business leaders about how they think the schools are doing in raising student achievement. “We shared the challenges outlined in the school’s technical assistance reports from *Making Middle Grades Work* and *High Schools That Work*,” Augustine said. Two requests from the community were loud and clear: 1) Add more rigor to the curriculum so that students will be prepared for jobs and will not need to take remedial courses in college and 2) involve students in community projects so they will understand what is available to them locally and be prepared to become active citizens of the community.

As a result of the community input, the district arranged meetings with teachers from grade six through high school to address gaps in the curriculum to ensure that all students are successful in college-preparatory-level high school courses. It also incorporated community issues into the guidance curriculum for middle grades students. When these students reach high school, they will be expected to participate in a community service day assisting community members with tasks such as cleaning public buildings, landscaping churches, and painting fences and dugouts at local parks.

Districts and schools want to improve student performance, and students want to be successful. So what is happening at low-performing schools? David Spence, president of SREB, says too many schools have a “knowing-doing gap;” they profess to know what leads to high performance and continuous improvement, but they have many reasons or excuses for not doing what they know needs to be done. For instance, schools may lack the technical capacity to gather and analyze data and act upon the findings. Schools may understand the need for extra help if students perform at a low level, but they may not be able to find resources or flexibility in the schedule to accommodate an extra-help program.

In addition to knowing what should be done and how to do it, schools need the political will to do something differently. They rely upon local citizens who are knowledgeable about education issues to make informed choices about actions to improve school and student performance. In many instances, these citizens do not focus on grades six through 10.

SREB staff members met with seven local boards of education in one state. Even though the state had a system of testing and reporting on student achievement in the middle grades, no district had set a functional mission for the middle grades or had started keeping score on how well their middle grades schools were doing. In fact, they were surprised to find that significantly more eighth-graders than fourth-graders were scoring below Basic in English, mathematics and science. Even though the information was available on the state report card, local school boards had not focused on how their students were doing by the end of the eighth grade or on directing the attention of middle grades educators to the problem.

Setting a district vision of higher achievement

Each county in Maryland has a Bridge to Excellence plan that involves leaders and teachers at every school in examining data and taking action to improve student achievement. **Talbot County** provides strong support for data analysis and professional development at the building level.

Talbot County’s vision to improve schools and raise student achievement is twofold — to meet the academic needs of all students and to constantly assess each school’s progress and instructional needs. “We spend all of our time on student performance,” Superintendent Karen Salmon said.

(continued)

The district communicates its vision to educators, parents and the public through newsletters and town hall meetings that the superintendent conducts at each school. Salmon uses the meetings to tell how the schools are doing and to give parents a chance to ask questions about the master plan for raising student achievement.

New teachers receive district support through an induction program that begins 12 days before the start of school. The emphasis is on lesson planning, getting to know the curriculum and using technology. New teachers meet monthly at the district level and attend support meetings with their principals every five weeks at the building level.

Each new teacher has a two-year mentor teacher hired by the district and a “buddy” teacher in the building. Mentors are retired teachers who have had success in the classroom and know how to relate to problems and offer good advice. Building administrators and district curriculum specialists conduct formal and informal observations and provide feedback to new faculty members.

As a result of orientation, mentoring and professional development, teachers tend to want to stay in the Talbot County system. In fact, the teacher retention rate is 90 percent systemwide. Retention is high among principals also. A primary reason is that principals have been freed of administrative duties so that they can focus full-time on being the school’s instructional leader. The district created a new position of “school manager” to handle day-to-day details involving the building, the cafeteria and the school busses. The funding came from doing away with the position of “instructional facilitator” and giving the principal the responsibility for teaching and learning.

Looking ahead, Salmon said the district will continue to analyze data, including the use of an online data analysis warehouse known as Performance Matters. “Teachers have access to this sophisticated system that allows them to identify students who need extra help to meet standards,” she said.

The district will work to increase the number of students eligible for advanced studies and enrichment activities and will continue to empower principals to be the watchdogs for instructional delivery in their schools, Salmon said.

District meetings focus on instruction

Monthly meetings at the **Horry County**, South Carolina, district office focus on instructional issues and little else, according to Cindy Ambrose, the chief academic officer for the district. Each principal brings a lead teacher to participate in discussions about classroom practices. Often, those discussions are designed around lessons that have been videotaped at schools in the district. Each principal can download a copy of a video clip from the district Web site to facilitate conversations with teachers at his or her school.

The district makes it clear that an effective lesson includes strategies such as presentation of appropriate content, student engagement, guided practice and closure. “We are looking for shifts in classroom practices,” Ambrose said, “and we won’t be satisfied until one hundred percent of classrooms are offering effective lessons 100 percent of the time.”

Principals report to the district on the time they spend in the classroom. Often, district leaders accompany the principal on walk-through visits. The purpose is to strengthen the “...shared vision of what effective teaching looks like,” Ambrose said.

Summing up district strategies for success

Districts have been the forgotten link in school improvement and higher student achievement, but they can lead schools and students to better performance. Districts can lead the way to success by doing the following:

- Set the vision and mission for all middle grades schools by preparing all students for a college-preparatory program in high school followed by graduation.
- Acknowledge performance gaps and build the will to improve.
- Develop rigorous academic curricula to challenge students and appeal to their interests.
- Define benchmark indicators of grade-level achievement, gather data on teacher assignments and student work representing grade-level performance, and use the data to make instructional decisions.

- Establish the importance of literacy, numeracy and scientific reasoning across the curriculum.
- Develop a new vision of the professional teacher who:
 - sets and communicates high expectations to students and parents;
 - schedules extra time and help for students who need it and uses alternative instructional strategies to reteach curricula; and
 - acts as an adviser to help a small group of students explore careers, set goals and create five-year educational plans.
- Obtain agreement on standard practices to be used in all classrooms, and focus on professional development to assist schools and teachers to implement these practices in the classroom.
- Develop future leaders who can share leadership with staff members and teachers by distributing authority and responsibility for meeting district goals and who can create teams and a committee structure to support a culture of school improvement.
- Implement a long-range plan for continuous improvement.

Each level of organization — state, district and school — has a role to play in improving student achievement and creating effective schools. To ensure that all students are ready for college-preparatory studies in high school and are traveling the pathway to graduation, it is imperative for all three entities to commit to the same mission and to send the same message to students, parents and the community. With that commitment, the goals and dreams of all schools and all students will come true.

Making Middle Grades Work

Primary Mission and Goals

The primary mission of *MMGW* is to create a culture of high expectations and continuous improvement to prepare middle grades students for challenging high school studies. To achieve its mission, *MMGW* has several goals:

- Increase to 85 percent the percentages of students meeting the reading, mathematics and science performance goals on the Middle Grades Assessment, a NAEP-referenced exam.
- Increase the percentages of all students performing at the Proficient level to at least 50 percent in reading, mathematics and science.
- Increase annually the percentages of middle grades students entering high school prepared to succeed in college-preparatory courses such as Algebra I and English/language arts.
- Increase to 90 percent the percentages of middle grades students who transition into grade nine and complete high school four years later.
- Advance state and local policies and leadership initiatives to sustain a continuous school improvement effort.

MMGW Key Practices for Improving Student Achievement

School and classroom practices and student performance are more likely to change if they are aligned to a framework that facilitates and encourages comprehensive school improvement. The *MMGW* Key Practices are:

An academic core aligned to what students must know, understand and be able to do to succeed in mathematics, science, college-preparatory English and social studies — All students in the middle grades need an academic core curriculum that accelerates learning, challenges them and appeals to their interests.

- In *mathematics*, all students satisfactorily complete Algebra I or pass a pre-algebra test of proficiency and use algebra concepts to reason and solve problems.

- In *science*, all students use laboratory and technology experiences to learn fundamental concepts in the physical, life and earth/space sciences.
- *Reading* instruction is incorporated into the academic core curriculum through grade eight.
- The *language arts curriculum* requires students to use language correctly and effectively; to find, organize and communicate information; to read the equivalent of 10 to 12 books of various types; to write a short paper weekly; and to write one or more major research papers.
- The *social studies curriculum* engages students to learn about their heritage, their government, their world and economic principles through key issues of the past, present and future.

A belief that all students matter — Ensure that each student develops a personal relationship with a consistent mentor — an adult who takes an interest in his or her successful learning, goal setting, course selection, educational planning, review of progress and personal growth.

High expectations and a system of extra help and time — Students learn in different ways and at different rates. Schools invest the time and extra help middle grades students require to meet the rigorous, consistent standards of high expectations.

Classroom practices that engage all students — Young adolescents need varied learning activities linked to challenging academic content and opportunities to use new skills and concepts in real-world applications; middle grades teachers need to integrate reading, writing and speaking as strategies for learning into all parts of the curriculum.

Teachers working together — Provide teams of teachers from several core disciplines time and support to work together to align core academic courses to high school readiness standards and with classroom assignments, student work and assessments; integrate mathematics and literacy concepts across the curriculum; and examine student work.

Support from parents — Educate middle grades parents, school and teacher leaders, and students about the achievement level needed for challenging high school studies. Teacher-advisers play a critical role in keeping parents engaged by arranging multiple conferences with students and their parents.

Qualified teachers — Middle grades teachers must know academic content and how to teach middle grades students. To ensure that they do, teachers must have in-depth knowledge of their subject areas and of teaching strategies to engage and challenge students.

Use of data — States, districts and schools must continuously use data on student, school and teacher performance to review and revise school and classroom practices.

Use of technology for learning — Provide opportunities for middle grades students and teachers to explore and use technology, such as word processing, electronic presentations and Web design skills.

Strong leadership — Middle grades schools need strong, effective principals who encourage teachers and participate with them in planning and implementing research-based improvements, including aligning and benchmarking curricula to high school standards.

MMGW Key Conditions for Accelerating Student Achievement

MMGW believes that everyone — teachers and school, district, local and state leaders — must work together to align policies, resources, initiatives and accountability efforts to support middle grades schools as they adopt and implement comprehensive school improvement designs.

A clear, functional mission statement defines the purpose of the middle grades school: to prepare students for rigorous, college-preparatory courses in high school. The *MMGW* Key Conditions are:

- **Commitment:** State partners, the local school board, district leaders and the community commit to implement fully the comprehensive *MMGW* improvement framework.
- **Planning for continuous improvement:** District and school leaders create an organizational structure and process that ensures continuous involvement on what to teach; how to teach it; what students are expected to learn; how to assess what they have learned; and how district and school leaders support each other, the students, students' parents and the community.

- **Curriculum:** District leaders support and encourage a curriculum review and alignment process that compares all curricula to state, national and international standards.
- **Support for professional development:** District and school leaders provide leadership and financial support for professional development directly connected to academic standards and student achievement.
- **Teacher preparation:** The local school board helps teachers without majors in their subject areas upgrade their content knowledge through academic courses, and hires new teachers with subject area majors matching their teaching assignments.

Making Middle Grades Work Publications and Materials

(To order a copy of any SREB publication, visit the Web site at www.sreb.org; call (404) 875-9211, Ext. 236; or e-mail publications@sreb.org.)

Using the Middle Grades Assessment Report to More Deeply Implement School Reform (workbook)

Designed for use in conjunction with *A Guide for Using the Middle Grades Assessment Report to More Deeply Implement School Reform*, this workbook enables schools to see where they stand in their efforts to achieve continuous school improvement. (06V60w workbook); 2006; online only

A Guide for Using the Middle Grades Assessment Report to More Deeply Implement School Reform

This guide explains the 2006 Middle Grades Assessment (MGA). Included are details about the purpose and composition of the MGA, its administration and distribution of the results. (06V60w); 2006; online only

Making Middle Grades Work: An Enhanced Design to Get All Students to Standards

This brochure describes the *Making Middle Grades Work (MMGW)* enhanced design for school improvement, including the updated *MMGW* framework of Goals and Key Practices, recommended core curriculum and Key Conditions. (06V15); 2006; free

Establishing Benchmarks of Progress for Middle Grades Sites

Making Middle Grades Work (MMGW) expects schools to show continuous progress in implementing classroom practices and improving student achievement. This document helps verify improvement in student achievement and determine if 85 percent of all student groups are meeting the *MMGW* Goals in reading, mathematics and science. (06V14); 2006; free

Implementing School Reform: *Making Middle Grades Work* for All Students

The Research Triangle Institute prepared this report for SREB's *Making Middle Grades Work* initiative. It compared 28 high- and low-implementation schools and found that students at middle grades schools that more fully implement the *MMGW* design have higher student achievement than those at schools that do not fully implement the design. (06V03); 2006; \$2; \$1 each for 10 or more

Improving Reading Achievement in Middle Grades Rural Schools

This research brief addresses low reading achievement among rural middle grades students, particularly in the Southern states, and offers strategies for addressing the problem. (05V69); 2005; \$1

Making High Schools and Middle Grades Schools Work

This report discusses the findings of a five-year research project assessing the effectiveness in raising student achievement of the *High Schools That Work (HSTW)* and *Making Middle Grades Work (MMGW)* school improvement models. (05V12w); 2005; online only

Well-qualified Teachers and High Quality Teaching: Are They the Same?

Using data from SREB's Middle Grades Assessment, four factors that measure teacher quality were found to be significantly and positively related to student achievement in the middle grades. This research brief describes those factors as they relate to teacher quality and the quality of instruction. (05V06); 2005; \$2; \$1 each for 10 or more

Literacy Across the Curriculum Support Materials

This CD-ROM contains several documents and templates from *Literacy Across the Curriculum: Setting and Implementing Goals for Grades Six through 12* combined into one PDF file. (05V03); 2005; \$5

Developing Effective Leadership Teams — Implementing the *High Schools That Work* School Improvement Design

This guide explains how working in teams makes school count for all students. Five essential leadership teams and their composition, structure and duties are described. (05V01); 2005; \$2

Essential Competencies for Middle Grades Mathematics Teachers

This publication outlines the content, process and instructional competencies needed by mathematics teachers. (04V49); 2004; \$2; \$1 each for 10 or more

Paint Valley Middle and High Schools, Bainbridge, Ohio

Paint Valley Middle and High Schools, housed in a single complex with 660 students in rural southern Ohio, have implemented significant school reform since adopting the *HSTW* and *MMGW* Goals and Key Practices. (04V47); 2004; online only

Stemmers Run Middle School, Baltimore County, Maryland

This case study describes the remarkable strides in school improvement that Stemmers Run Middle School has made since joining the *Making Middle Grades Work (MMGW)* initiative in 2000. (04V46); 2004; \$1

Getting Students Ready for High School Series

The *High Schools That Work* Getting Students Ready for High School series provides examples of course syllabi, lesson plans, assignments, assessments and professional development activities for preparing middle grades students for rigorous college-preparatory high school courses in three core subject areas.

- **Getting Students Ready for College-preparatory/Honors Science: What Middle Grades Students Need to Know and Be Able to Do** (04V04); 2004; \$5; \$2.50 each for 10 or more

- **Getting Students Ready for College-preparatory/Honors English: What Middle Grades Students Need to Know and Be Able to Do**
(03V61); 2003; \$5; \$2.50 each for 10 or more
- **Getting Students Ready for Algebra I: What Middle Grades Students Need to Know and Be Able to Do**
(02V52); 2002; \$5; \$2.50 each for 10 or more

Ten Strategies for Creating a Classroom Culture of High Expectations

This guide is designed to help teachers and school administrators assess their practices and plan strategies for improvement. (04V03); 2004; \$2; \$1 each for 10 or more

Getting the Mission Right in the Middle Grades

This report, a part of SREB's *Challenge to Lead* education goals series, documents SREB states' progress in getting middle grades students ready for high school. (04E05); 2004; \$5

Making Middle Grades Work: School and Classroom Practices That Improve Student Achievement

This research brief summarizes the results of a research study of 52 middle grades schools in 16 states that revealed improvement in both reading and mathematics. (03V65); 2003; \$1.50

What Works to Improve Student Achievement in the Middle Grades: A *Making Middle Grades Work* Research Report

This research report examines the design and implementation of this comprehensive improvement effort in 52 middle grades schools in 16 states. (03V64); 2003; \$5; \$2.50 each for 10 or more

Literacy Across the Curriculum: Setting and Implementing Goals for Grades Six through 12

This volume provides concrete, research-based steps not only to raise reading and writing achievement but also to help students learn more in every class by using literacy skills. (03V63); 2003; \$10; \$6.50 each for 10 or more

Improving the Middle Grades: Actions That Can Be Taken Now

This publication describes six steps that states can take immediately to strengthen middle grades education. (03V02); 2003; \$1

A Highly Qualified Teacher in Every Middle Grades Classroom: What States, Districts and Schools Can Do

This guide provides seven key practices for increasing the number of highly qualified teachers in the middle grades. (02V56); 2002; \$2.50

Academic Achievement in the Middle Grades: What Does Research Tell Us?

This literature review surveys contemporary scholarship on academic achievement in the middle grades to assess the state of middle grades education. (02V47); 2002; \$2; \$1 each for 10 or more

Opening Doors to the Future: Preparing Low-achieving Middle Grades Students to Succeed in High School

This publication contains 15 examples of transition programs that work in raising student achievement. (02V41); 2002; \$5; \$2 each for 10 or more

Middle Grades to High School: Mending a Weak Link

This research brief shows that ninth-graders in higher-level courses have a lower failure rate than students with similar characteristics in lower-level courses. (02V08); 2002; \$2; \$1 each for 10 or more

Summer School: Unfulfilled Promise

Quality summer school has been proven to help low-performing students narrow the achievement gap between them and more successful students. (02H02); 2002; \$5

***Making Middle Grades Work*: Raising the Achievement of All Middle Grades Students**

This publication addresses the *Making Middle Grades Work* goals of raising the academic achievement of all students in the middle grades. (01V58); 2001; online only

Closing the Gaps in the Middle Grades

This guide explains how teachers, school and district leaders, and the community can work together to design improvement strategies. (01V53); 2001; \$1

A Middle Grades Message: A well-qualified teacher in every classroom matters.

This report includes a rating instrument that states and districts can use to gauge their commitment to having a well-qualified teacher in every middle grades classroom. (00V39); 2000; \$5

Education's Weak Link: Student Performance in the Middle Grades

This report paints a picture of middle schools that are not preparing students for the challenges that lie ahead in high school courses. (98E02); 1998; \$5

Raising the Bar in the Middle Grades: Readiness for Success

This report outlines effective strategies and offers suggestions for how states and schools can ease students' transitions into more challenging courses in high school. (98E05); 1998; \$5

Improving Teaching in the Middle Grades: Higher Standards for Students Aren't Enough

This publication addresses the need for states to examine their requirements for teacher certification and to review the educational backgrounds of middle grades teachers. (98E13); 1998; \$5

Leading the Way: State Actions to Improve Student Achievement in the Middle Grades

The report advises states of their responsibilities in spearheading changes in middle grades education. (99E18); 1999; \$5

