
April 4, 2005

The Effects of eMINTS Enrollment on Title I Students

Susan Tharp
Adam Bickford
Douglas Hager

Previous analyses of MAP data have consistently indicated a positive interaction between the eMINTS and Title I programs. This report examines the MAP performance of students who receive Title I-funded educational assistance and are enrolled in eMINTS classrooms, using data from the FY03 eMINTS cohort of schools. While the results were mixed, there was evidence of a smaller achievement gap between Title I and non-Title I eMINTS students. These quantitative results are supported by observations from Title I teachers regarding the ways in which eMINTS classroom enrollment supports the performance of the students with whom they work. These results suggest that a closer coordination between the Title I and eMINTS programs will have a beneficial impact on the performance of Title I students.

Background

Since 2002 the analysis of Missouri Assessment Program (MAP) test results in eMINTS schools has consistently shown a positive interaction between a school's Title I program status and student enrollment in an eMINTS classroom (see eMINTS Evaluation Project, 2003, 2004 and 2005). For example, in the FY02 eMINTS cohort, a clear interaction exists between Title I school status and eMINTS enrollment. In this cohort, students enrolled in a schoolwide Title I school and an eMINTS classroom scored nearly ten points higher on the MAP Communication Arts test than students enrolled in a targeted assistance Title I school (see eMINTS Evaluation Project, 2004:30-31). In the FY03 eMINTS cohort, students who both received Title I assistance and were enrolled in a classroom led by a second-year eMINTS teacher scored an average of eight points higher on the MAP Communication Arts test (see eMINTS Evaluation Project, 2005: 37-38).

This report analyses the relationship between the eMINTS and Title I programs to understand how they support one another. Each program has many unique features, and the analysis attempts to account for the key differences in each one. In particular, the implementation of a Title I program is extremely complex and presents multiple problems in understanding its interaction with a classroom intervention like the eMINTS program.

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

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

Understanding the Title I Program

The Title I program has three major crosscutting dimensions that inform the analysis of the interaction of the Title I and eMINTS programs. The dimensions have relevance at the school level, in the curricular area of assistance and in the methods of service delivery.

The first major dimension is relevant at the school level. The Title I program is differentiated between educational assistance provided to individual students in poverty (through the targeted assistance program) and educational assistance provided to entire schools (through the schoolwide program). Conceptually, Title I funds are supposed to be distributed so that the individual students “most at risk for educational failure” receive supplemental services and tutoring. In the majority of schools receiving Title I funds, supplemental services are targeted towards students who are both struggling academically and live in poverty, hence the term, “targeted assistance.” However, when the number of students eligible for Title I services reaches a particular threshold, ranging from 60% of students eligible for the Free and Reduced Lunch program in 1965 to 40% of students eligible for the Free and Reduced Lunch program in 2001 (U.S. Department of Education, 2002:15), the school can apply for the more comprehensive “schoolwide” program. In schoolwide programs, all students can receive Title I services to address deficits in school performance, regardless of family poverty status. Participation in the schoolwide Title I program is supposed to be accompanied by a whole-school program review, curriculum review and professional development for all teachers.

Due to the programmatic distinctions among schools receiving Title I funds, this analysis contrasts the characteristics of three groups of schools:

1. Schoolwide schools
2. Targeted Assistance schools
3. non-Title I schools.

The second dimension refers to the curriculum area in which students receive assistance. In the schools participating in the eMINTS FY03 cohort, students could receive Title I assistance in two general curriculum areas: communication arts and reading and mathematics. Students receiving Title I assistance can receive additional instruction in one subject or both subjects.

The third dimension addresses the delivery methods for Title I assistance. The Title I program funds teachers and aides that provide assistance for individual students. Students receive this assistance in two main ways: a pull-out, when students leave their regular classrooms to work with Title I teachers and/or aides; or a push-in, when Title I teachers and/or aides join students in their regular classrooms. These service-delivery methods are independent of the programmatic differences at the school level, meaning students receive Title I services in a pull-out or push-in manner regardless of whether a school is a targeted assistance or a schoolwide Title I school. As will be seen, there is no simple accounting for these different types of service delivery on student performance or development.

Research Design and Data

This report is based on data collected from the FY03 cohort of eMINTS elementary schools. The eMINTS teachers in these schools began the eMINTS professional-development program in the autumn of 2002 and completed the program in the spring of 2004. The cohort consisted of 40 schools selected through a competitive process funded by the Title IID Enhancing Education Through Technology (EETT) grant program. A grant from the Missouri Department of Elementary and Secondary Education Federal Programs Office supported the data collection and analysis of the interaction between the Title I and eMINTS programs.

The body of this report presents two analyses of the relationship between the Title I and eMINTS programs. The first one is a quantitative analysis of MAP Communication Arts and Mathematics scores for students enrolled in the participating schools. The second analysis is based on a series of 35 interviews with Title I teachers, conducted during the winter of 2004.

The quantitative data analysis relies on the identification of students in grades 3 and 4 who received Title I assistance. This information was collected from the individual schools in the FY03 eMINTS cohort. Schools listed the students who received Title I assistance, the curricular areas in which they received assistance and the delivery method for the Title I-funded assistance. This information was merged into student-level records in the FY03 eMINTS-school MAP database. This methodology addressed a limitation in the regular MAP student-information records that prevented the identification of Title I students, especially in schoolwide Title I schools¹

Plan of the Document

This report has two main sections. The first presents a detailed quantitative analysis of the MAP performance of Title I students. This section begins by summarizing the distribution of Title I students across Title I school types, eMINTS classroom types, curricular areas of Title I assistance received and methods of Title I service delivery.

The second section considers the comments of Title I teachers. These comments describe the ways in which the educational environment of an eMINTS classroom helps Title I students achieve academically. The comments of Title I teachers also describe the roles that the eMINTS teacher and the method of service delivery play in creating an environment where Title I students are motivated to work in ways that improve their performance.

The results of the quantitative analysis show that Title I students benefit from enrollment in eMINTS classrooms, particularly by narrowing the performance gap between Title I

¹ The MAP Student Information Form (SIF) includes a variable identifying Title I students. However, this variable is coded differently depending on the type of school. In targeted assistance schools, only students receiving Title I assistance have this variable marked. In schoolwide schools all student have this variable marked. This prevents the reliable identification of students receiving Title I assistance.

and non-Title I students.. On the MAP Communication Arts test, Title I students enrolled in eMINTS classrooms scored higher than Title I students enrolled in non-eMINTS classrooms. On the MAP Mathematics test, Title I students enrolled in eMINTS classrooms scored closer to the level of students enrolled in non-eMINTS classrooms than did their non-eMINTS peers. These differences vary by school type, eMINTS classroom type, curricular area of Title I assistance and method of service delivery.

The qualitative results suggest that an eMINTS classroom represents a learning environment that gives Title I students the confidence to work to the level of their non-Title I peers. The Title I teachers interviewed maintained that this environment can be seen most clearly in classrooms led by second-year eMINTS teachers. Title I teachers described the ways inquiry-based instruction, cooperative grouping and the use of technology helped motivate Title I students to master new skills and to become fully integrated in their classroom communities. These teachers also described the ways a push-in method of service delivery helped Title I students maintain their membership in the work communities in eMINTS classrooms.

Together, these results suggest that the Title I program could help more students if it were more clearly supportive of the eMINTS program. The concluding section of this report will address the issue at greater length.

Finally, the report discusses the implications of these results and findings in relation to the ways the Title I and eMINTS programs support one another and highlights the ways this support could be expanded to help more Title I students.

Table 1
Distribution of Students by Title I Status and School Type

	Grade 3	Grade 4	All Grades	Number of Students
<i>All Title I Schools</i>				
Title I Student				
Yes	26.5	28.0	27.4	995
No	73.5	72.0	72.6	2643
All Students	100.0	100.0	100.0	
Number of Students	1586	2052	3638	
<i>Schoolwide Schools</i>				
Title I Student				
Yes	35.6	49.3	42.2	491
No	64.4	50.7	57.8	673
All Students	100.0	100.0	100.0	
Number of Students	604	560	1164	
<i>Targeted Assistance Schools</i>				
Title I Student				
Yes	20.9	20.0	20.4	504
No	79.1	80.0	79.6	1970
All Students	100.0	100.0	100.0	
Number of Students	982	1492	2474	

Title I Schools and Students in the FY03 eMINTS Cohort

Of the 40 schools in the FY03 cohort, DESE listed 39 of them as Title I schools. Of the 39 schools, 14 had implemented schoolwide Title I programs. The other 26 were targeted assistance schools. As seen in Table 1, 27.4% of the third- and fourth-grade students in the Title I schools received Title I assistance of some kind. Looking at these figures by type of school, 42.2% of students in schoolwide schools received assistance compared to 20.4% of students in targeted assistance schools.

The distribution of Title I students by grade shows that 49.3% of fourth-grade students in schoolwide schools received assistance, compared to 35.6% of third-grade students. In contrast, almost no difference exists by grade in the percentage of students receiving aid in targeted assistance schools: 20.9% of third-grade students received assistance as did 20.0% of fourth-grade students.

Table 2 introduces the variable of student enrollment in an eMINTS classroom to the analysis of Title I student status. Due to the structure of the EETT grant, schools in the FY03 eMINTS cohort were able to add additional classrooms at the midpoint of the two-year eMINTS professional-development program. Participating schools added a total of 17 eMINTS classrooms at the beginning of the 2003-2004 school year (see eMINTS

Evaluation Project, 2005). Consequently, Table 2 shows three types of eMINTS classrooms: non-eMINTS classrooms, which identify classrooms whose teachers did not participate in the eMINTS professional-development program; first-year eMINTS classrooms, which identify classrooms whose teachers began the eMINTS professional-development program in the 2003-2004 school year; and second-year eMINTS classrooms, which identify classrooms whose teachers began the eMINTS professional-development program in the 2002-2003 school year. The teachers in second-year eMINTS classrooms had completed the majority of the eMINTS professional-development program by the administration of the 2004 MAP tests.

The percentages in Table 2 show a considerable disparity in the distribution of Title I students across grade levels, types of Title I schools and types of classrooms. In both grades these percentages suggest that Title I students are more likely to have been enrolled in eMINTS classrooms. In third grade, 24.6% of students enrolled in non-eMINTS classrooms received Title I assistance, compared to 36.1% of students enrolled in first-year eMINTS classrooms and 27.2% of students in second-year eMINTS classrooms. A similar pattern exists in the fourth grade: 19.9% of students enrolled in non-eMINTS classrooms received Title I assistance, compared to 32.5% of students enrolled in first-year eMINTS classrooms and 37.5% of students enrolled in second-year eMINTS classrooms.

Differences exist by Title I school type as well. In the third grade, 42.5% of students in first-year eMINTS classrooms in schoolwide schools received Title I services, compared to 9.5% of students enrolled in first-year eMINTS classrooms in targeted assistance schools. Similar differences exist in second-year eMINTS classrooms. In schoolwide schools, 40.8% of students in second-year eMINTS classrooms received Title I assistance, compared to 20.1% of second-year eMINTS students in targeted assistance schools.

In the fourth grade, the percentage differences for students enrolled in first-year eMINTS classrooms are smaller. In schoolwide schools, 36.4% of students received Title I assistance, compared to 28.6% of students in targeted assistance schools. The differences are larger for students enrolled in second-year eMINTS classrooms. In schoolwide schools, 67.7% of students received Title I assistance, compared to 24.3% of students enrolled in targeted assistance schools.

Table 2
Distribution of Students by Title I Status, eMINTS Classroom Enrollment and Title I School Type

	Non-eMINTS Classroom	First-Year eMINTS Classroom	Second-Year eMINTS Classroom	All classrooms	Number of Students
<i>Grade 3</i>					
<i>All Title I Schools</i>					
Title I Student					
Yes	24.6	36.1	27.2	26.5	420
No	75.4	63.9	72.8	73.5	1166
All Students	100.0	100.0	100.0	100.0	
Number of Students	808	108	670	1586	
<i>Schoolwide Schools</i>					
Title I Student					
Yes	29.4	42.5	40.8	35.6	215
No	70.6	57.5	59.2	64.4	389
All Students	100.0	100.0	100.0	100.0	
Number of Students	289	87	228	604	
<i>Targeted Assistance Schools</i>					
Title I Student					
Yes	22.0	9.5	20.1	20.9	205
No	78.0	90.5	79.9	79.1	777
All Students	100.0	100.0	100.0	100.0	
Number of Students	519	21	442	982	
<i>Grade 4</i>					
<i>All Title I Schools</i>					
Title I Student					
Yes	19.9	32.5	37.5	28.0	575
No	80.1	67.5	62.5	72.0	1477
All Students	100.0	100.0	100.0	100.0	
Number of Students	1064	154	834	2052	
<i>Schoolwide Schools</i>					
Title I Student					
Yes	33.2	36.4	67.7	49.3	276
No	66.8	63.6	32.3	50.7	284
All Students	100.0	100.0	100.0	100.0	
Number of Students	229	77	254	560	
<i>Targeted Assistance Schools</i>					
Title I Student					
Yes	16.3	28.6	24.3	20.0	299
No	83.7	71.4	75.7	80.0	1193
All Students	100.0	100.0	100.0	100.0	
Number of Students	835	77	580	1492	

Differences in Curricular Area of Title I Assistance

Tables 3 through 5 present percentage differences by the types of assistance Title I students received. The Title I program is substantially different in different schools. Individual schools have discretion over several factors: the number of subjects in which students receive assistance; whether to provide assistance in communication arts and reading, in mathematics or in both subjects; and how to deliver these services to students (assistance via pull-out or push-in). Table 3 presents the distribution of students by the number of subjects in which they received Title I assistance. Table 4 presents the distribution of students by the subjects in which they received Title I assistance. Table 5 presents the distribution of students by whether they received Title I services in a pull-out or push-in manner. Each of these tables are limited to students listed by their schools as receiving Title I assistance.

As seen in Table 3, approximately 75% of all Title I students received assistance in one subject. Differences do exist by classroom type. Generally, the percentage of Title I students who received assistance in two subjects was higher in the eMINTS classrooms. In the third grade, 18.6% of Title I students enrolled in non-eMINTS classrooms received assistance in two subjects, compared to 31.9% of Title I students enrolled in second-year eMINTS classrooms. This pattern is visible in each grade and in each school type.

The distribution of Title I students, as seen in Table 3, suggests that the students who needed the most assistance were more likely to be enrolled in second-year eMINTS classrooms than their peers. This information has relevance for the statistical models that follow.

The results in Table 4 present the subjects (communication arts and reading and/or mathematics) in which Title I students received assistance. As seen in Table 3, students may have received assistance in one or both of these subjects. Table 4 confirms the results in Table 3: as many as one-third of the Title I students enrolled in second-year eMINTS classrooms received assistance in both communication arts and reading and mathematics.

Table 3
Distribution of Students by Number of Title I Subjects, eMINTS Classroom
Enrollment and Title I School Type

	Non-eMINTS Classroom	First-Year eMINTS Classroom	Second-Year eMINTS Classroom	All classrooms	Number of Students
<i>Grade 3</i>					
<i>All Title I Schools</i>					
Number of Subjects in which Students Receive Assistance					
1	81.4	82.1	68.1	75.7	318
2	18.6	17.9	31.9	24.3	102
All Students	100.0	100.0	100.0	100.0	
Number of Students	199	39	182	420	
<i>Schoolwide Schools</i>					
Number of Subjects in which Students Receive Assistance					
1	89.4	81.1	69.9	79.5	171
2	10.6	18.9	30.1	20.5	44
All Students	100.0	100.0	100.0	100.0	
Number of Students	85	37	93	215	
<i>Targeted Assistance Schools</i>					
Number of Subjects in which Students Receive Assistance					
1	75.4	100.0	66.3	71.7	147
2	24.6	0.0	33.7	28.3	58
All Students	100.0	100.0	100.0	100.0	
Number of Students	114	2	89	205	
<i>Grade 4</i>					
<i>All Title I Schools</i>					
Number of Subjects in which Students Receive Assistance					
1	87.3	82.0	58.8	71.3	410
2	12.7	18.0	41.2	28.7	165
All Students	100.0	100.0	100.0	100.0	
Number of Students	212	50	313	575	
<i>Schoolwide Schools</i>					
Number of Subjects in which Students Receive Assistance					
1	89.5	78.6	53.5	65.9	182
2	10.5	21.4	46.5	34.1	94
All Students	100.0	100.0	100.0	100.0	
Number of Students	76	28	172	276	
<i>Targeted Assistance Schools</i>					
Number of Subjects in which Students Receive Assistance					
1	86.0	86.4	65.2	76.3	228
2	14.0	13.6	34.8	23.7	71
All Students	100.0	100.0	100.0	100.0	
Number of Students	136	22	141	299	

Table 4
Distribution of Students by Type of Title I Subjects, eMINTS Classroom
Enrollment and Title I School Type

	Non-eMINTS Classroom	First-Year eMINTS Classroom	Second-Year eMINTS Classroom	All classrooms	Number of Students
<i>Grade 3</i>					
<i>All Title I Schools</i>					
Subject in which Students Receive Title I Assistance					
Communication Arts/Reading	45.2	38.5	52.2	47.6	200
Mathematics	38.2	43.6	15.9	29.0	122
Both	16.6	17.9	31.9	23.3	98
All Students	100.0	100.0	100.0	100.0	
Number of Students	199	39	182	420	
<i>Schoolwide Schools</i>					
Subject in which Students Receive Title I Assistance					
Communication Arts/Reading	27.1	35.1	50.5	38.6	83
Mathematics	62.4	45.9	19.4	40.9	88
Both	10.6	18.9	30.1	20.5	44
All Students	100.0	100.0	100.0	100.0	
Number of Students	85	37	93	215	
<i>Targeted Assistance Schools</i>					
Subject in which Students Receive Title I Assistance					
Communication Arts/Reading	58.8	100.0	53.9	57.1	117
Mathematics	20.2	0.0	12.4	16.6	34
Both	21.1	0.0	33.7	26.3	54
All Students	100.0	100.0	100.0	100.0	
Number of Students	114	2	89	205	

(Continued on the following page.)

The last important dimension in the analysis of the experience of Title I students is the delivery method for the Title I assistance: pull-out or push-in. Pull-out service delivery indicates that students leave their regular classrooms to work with Title I teachers. Push-in service delivery indicates that Title I teachers work with students in their classrooms.²

² In the data collected from the FY03 schools, a small number of students were listed as receiving Title I services in a combination of pull-out and push-in modes. In the analysis of this paper, these students are coded as receiving Title I services in a push-in manner. This determination was made based on the fact that these students receive part of their assistance and tutoring in their regular classrooms. The comments of Title I teachers support the visibly positive impacts of push-in service delivery in integrating students into their classroom communities.

Table 4 (Continued)

	Non-eMINTS Classroom	First-Year eMINTS Classroom	Second-Year eMINTS Classroom	All classrooms	Number of Students
<i>Grade 4</i>					
<i>All Title I Schools</i>					
Subject in which Students Receive Title I Assistance					
Communication Arts/Reading	65.1	22.0	33.2	44.0	253
Mathematics	23.6	60.0	25.6	27.8	160
Both	11.3	18.0	41.2	28.2	162
All Students	100.0	100.0	100.0	100.0	
Number of Students	212	50	313	575	
<i>Schoolwide Schools</i>					
Subject in which Students Receive Title I Assistance					
Communication Arts/Reading	65.8	10.7	32.0	39.1	108
Mathematics	27.6	67.9	21.5	27.9	77
Both	6.6	21.4	46.5	33.0	91
All Students	100.0	100.0	100.0	100.0	
Number of Students	76	28	172	276	
<i>Targeted Assistance Schools</i>					
Subject in which Students Receive Title I Assistance					
Communication Arts/Reading	64.7	36.4	34.8	48.5	145
Mathematics	21.3	50.0	30.5	27.8	83
Both	14.0	13.6	34.8	23.7	71
All Students	100.0	100.0	100.0	100.0	
Number of Students	136	22	141	299	

One important difference between these methods of service delivery is the way they impact the integration of students into their classrooms. Being pulled out of a class to receive Title I assistance removes a student from the regular flow of classroom work and can have a stigmatizing effect by identifying a student as being in need of assistance. On the other hand, receiving pull-out services allows for the delivery of specialized, one-on-one tutoring.

The use of push-in services alleviates certain problems with the pull-out method of student assistance. Having Title I students receive assistance in their classrooms can be less disruptive and such assistance can easily be integrated with the activities of the regular classroom. However, this type of support can become less focused on the needs of particular Title I students, as the assigned Title I teacher is often attempts to help all students who need assistance.

Table 5 presents the distribution of Title I students by the type of service delivery. In the third grade, 52.6% of all Title I students received Title I services in a pull-out manner. However, the majority of Title I students enrolled in second-year eMINTS classrooms (52.2%) received services in a push-in manner, compared to 36.7% of students enrolled in non-eMINTS classrooms. Title I students enrolled in first-year eMINTS classrooms

were most likely to receive push-in assistance. However, only 39 Title I students were enrolled in these classrooms, so this percentage is not particularly reliable.

Most of the students who received push-in Title I services were enrolled in schoolwide schools. Of the 199 students who received push-in services, 131 (65.8%) were enrolled in schoolwide schools. This difference has relevance for the examination of the following MAP test-score results.

Table 5
Distribution of Students by Type of Service Delivery, eMINTS Classroom
Enrollment and Title I School Type

	Non-eMINTS Classroom	First-Year eMINTS Classroom	Second-Year eMINTS Classroom	All classrooms	Number of Students
<i>Grade 3</i>					
<i>All Title I Schools</i>					
Type of Service Delivery					
Pull-out	63.3	20.5	47.8	52.6	221
Push-in	36.7	79.5	52.2	47.4	199
All Students	100.0	100.0	100.0	100.0	
Number of Students	199	39	182	420	
<i>Schoolwide Schools</i>					
Type of Service Delivery					
Pull-out	42.4	16.2	45.2	39.1	84
Push-in	57.6	83.8	54.8	60.9	131
All Students	100.0	100.0	100.0	100.0	
Number of Students	85	37	93	215	
<i>Targeted Assistance Schools</i>					
Type of Service Delivery					
Pull-out	78.9	100.0	50.6	66.8	137
Push-in	21.1	0.0	49.4	33.2	68
All Students	100.0	100.0	100.0	100.0	
Number of Students	114	2	89	205	
<i>Grade 4</i>					
<i>All Title I Schools</i>					
Type of Service Delivery					
Pull-out	77.8	54.0	37.7	53.9	310
Push-in	22.2	46.0	62.3	46.1	265
All Students	100.0	100.0	100.0	100.0	
Number of Students	212	50	313	575	
<i>Schoolwide Schools</i>					
Type of Service Delivery					
Pull-out	86.8	35.7	33.7	48.6	134
Push-in	13.2	64.3	66.3	51.4	142
All Students	100.0	100.0	100.0	100.0	
Number of Students	76	28	172	276	
<i>Targeted Assistance Schools</i>					
Type of Service Delivery					
Pull-out	72.8	77.3	42.6	58.9	176
Push-in	27.2	22.7	57.4	41.1	123
All Students	100.0	100.0	100.0	100.0	
Number of Students	136	22	141	299	

Analysis of Communication Arts and Mathematics MAP Test Results for Title I Students

This section of the report focuses on differences in MAP test performance by the categories of variables previously discussed (for example, Title I school type, Title I student status, eMINTS classroom type, curricular area of Title I assistance and method of Title I assistance). Statistical models were estimated to compare the effects of these variables on student performance on the third- and fourth-grade MAP tests. These results show that students enrolled in eMINTS classrooms score higher than other students in some contexts, but not in others. This difference can be seen when controlling for both the type of Title I school in which a student is enrolled and whether or not a student is receiving Title I services. It can also be seen when controlling for the curricular area in which a Title I student receives assistance and when controlling for the type of Title I service delivery.

The complexity of the current data, which combines at least three distinct levels of information, requires an analytical approach that can isolate the interactions between and among the three levels. The following presentation utilizes models that control for school-level differences as randomized blocks in a mixed-model ANOVA framework (see eMINTS Evaluation Project, 2005).

These analyses use the MAP scale score as the dependent variable. This test result is a continuous, weighted measure of test outcome. For the Title I schools in the FY03 eMINTS cohort, the MAP scale score ranged between 529 and 735 for the Communication Arts test and 481 and 786 for the Mathematics test.

The following tables estimate the mean level of performance on the MAP Communication Arts (for students in third grade) and Mathematics (for students in fourth grade) tests for students enrolled in different types of Title I schools, different types of eMINTS classrooms and different classes of students. In considering these results, it is important to note that some of the estimated mean values are based on small numbers of students. In addition, in some cases there were no observations. This distribution reflects the patterns of enrollment in the participating schools. However, while the statistical modeling procedures used to produce these results can accommodate unbalanced designs (for example, datasets that have unequal numbers of students in each cell, with some of the cells containing as few as two students), having no observations in some of those cells requires additional analysis. Consequently, the differences in the following tables require interpretation in light of the number of students in each cell, as some of them may not reliably reflect differences in the population, and future research should explore this further.

As these analyses include differences for as many as 12 unique cell means (for two types of schools, three types of classrooms and two statuses of students), the main analysis will focus on bi-plots showing the mean differences and variations among different cells. The selection of bi-plots illustrates the overall differences among Title I students. Where appropriate, the full tables present results for non-Title I students as well. Appendix A presents results for the full models.

Differences in the Third-Grade MAP Communication Arts Test

Figures 1 through 4 and Tables A.1 to A.4 present the analyses of the MAP Communication Arts test. These figures and tables outline some basic differences among types of schools and student statuses as well as looking at the full models in some detail.

Figure 1 and Table A.1 show the basic differences for Title I school type and Title I student status. This figure and table confirm that, on average, Title I students scored as many as 26.55 points lower than other students in the same schools. However, at the school level, students enrolled in the schoolwide Title I schools in the FY03 eMINTS cohort scored an average of 3.36 points higher than students enrolled in targeted assistance schools. In schoolwide schools, the average difference between Title I students and other students is 25.54 points, compared to 27.55 points for students in targeted assistance schools.

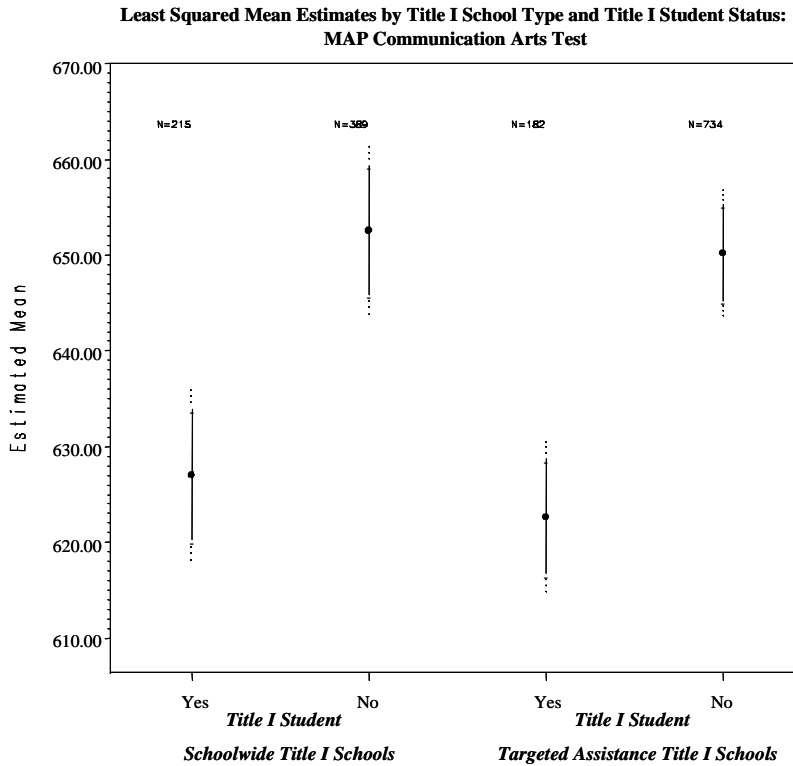
Figure 2 and Table A.2 show results from the full model, comparing the effects of student enrollment in an eMINTS classroom, controlling for student enrollment by Title I school type and student receipt of Title I services. Figure 2 shows the results for Title I students. Table A.2 shows the full set of differences.

These results indicate different patterns by Title I school type, but in every case, students enrolled in second-year eMINTS classrooms scored higher than students enrolled in non-eMINTS classrooms. The group of students showing the greatest difference are Title I students enrolled in targeted assistance schools. Title I students enrolled in second-year eMINTS classrooms scored an average of 12.88 points higher than students enrolled in non-eMINTS classrooms. For non-Title I students enrolled in targeted assistance schools, this difference is 1.14 points.

For Title I students enrolled in schoolwide schools, the average difference for Title I students enrolled in second-year eMINTS classrooms is 2.15 points. For non-Title I students, this difference is 8.93 points.

With regard to the gap in performance between Title I and non-Title I students, Table A.2 shows that the smallest gap (20.57 points on average) was found in second-year eMINTS classrooms in targeted assistance schools, while the largest gap (32.31 points on average) between Title I and non-Title I students was in non-eMINTS classrooms in targeted assistance schools. It is worth noting that in schoolwide schools, the gap was larger in second-year eMINTS classrooms (28.86 points on average) than it was in non-eMINTS classrooms (22.08 points on average).

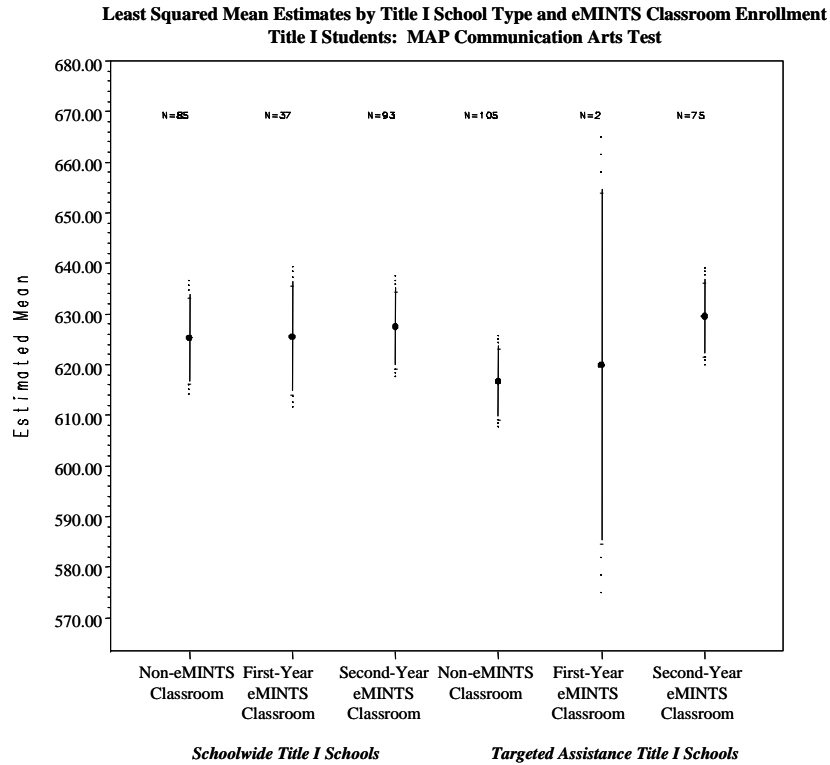
Figure 1
MAP Communication Arts Results by Title I School Type and Title I Student Status



For Title I students the differences seen in schoolwide Title I schools between non-eMINTS classrooms and second-year eMINTS classrooms are smaller than the difference seen in targeted assistance schools. Given the differences in the ways students receive Title I assistance in schoolwide versus targeted assistance schools, these results suggest that schoolwide Title I programs do benefit all Title I students in about the same way. If this assertion is true, then these results support the overall purposes of schoolwide programs, namely to support the learning of all students in a school.

However, the results of communication arts performance for students enrolled in targeted assistance schools suggest that the focused, often one-on-one, tutoring and support that Title I students receive and the inquiry-based instructional methods employed in many second-year eMINTS classrooms support one another and thus helped with producing high scores for these Title I students. This may help explain why the smallest gap between Title I and non-Title I students was found in second-year eMINTS classrooms in targeted assistance schools.

Figure 2
MAP Communication Arts Results, Controlling for Title I School Type, Title I Student Status and eMINTS Classroom Enrollment

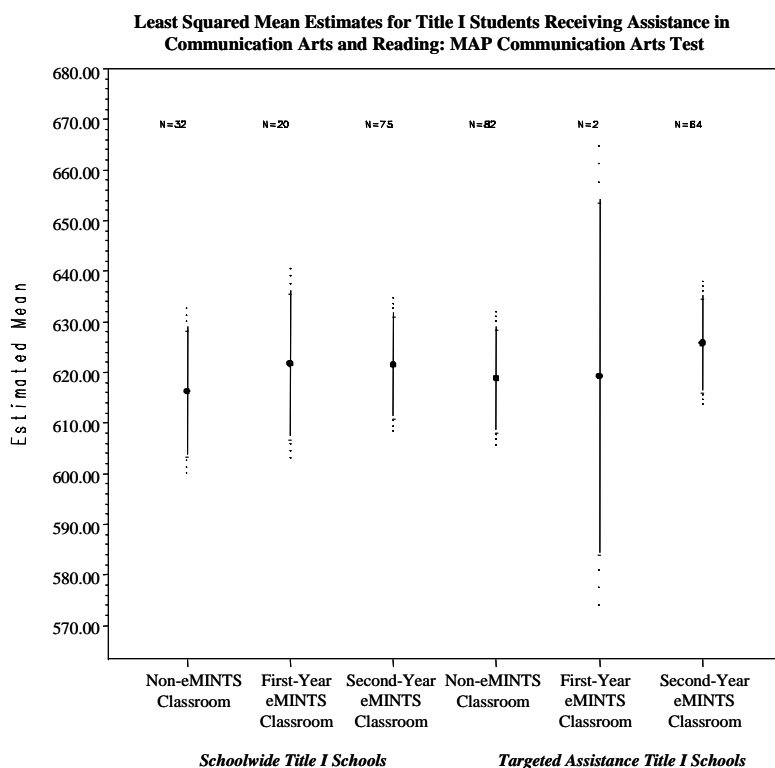


The results of Figure 2 and Table A.2 suggest that student enrollment in an eMINTS classroom and receipt of Title I services may support one another and reduce the gap between Title I and non-Title I students. This relationship differs by the type of Title I school. However, in all cases, these results indicate that enrollment in a second-year eMINTS classroom helps Title I students, indeed, all students, score higher on the MAP Communication Arts test.

Differences for Title I Students: Curricular Area and Type of Service Delivery

The next set of figures and tables contain results for two important details of the Title I program itself, the curricular area in which Title I students receive assistance and the method of service delivery for that assistance (pull-out or push-in). Figure 3 and Table A.3 present results for students receiving Title I assistance in communication arts and reading. Figure 4 and Table A.4 present results for students by the type of service delivery.

Figure 3
MAP Communication Arts Results for Title I Students Receiving Assistance in
Communication Arts and Reading, by Title I School Type and eMINTS Classroom
Enrollment



Assistance in Communication Arts and Reading

The results in Figure 3 and Table A.3 suggest that students who received Title I assistance in communication arts and reading benefited from enrollment in eMINTS classrooms. This figure and table account for any student listed as receiving Title I assistance in communication arts and reading; this data includes the students listed as receiving assistance in both subjects in Table 4. It is important to note that some of these cells are small and in one case empty. Accordingly, interpretations of the results are cautious and should be followed by future analysis.

In schoolwide schools, students enrolled in any type of eMINTS classroom scored an average of 5 points higher than students enrolled in non-eMINTS classrooms. In targeted assistance schools, students enrolled in second-year eMINTS classrooms scored an average of 7 points higher than students enrolled in non-eMINTS classrooms.

In contrast, the results indicate that students who received Title I assistance in mathematics and were enrolled in schoolwide schools experienced smaller differences due to eMINTS classroom enrollment while students enrolled in targeted assistance schools experienced larger differences. Students enrolled in schoolwide schools and second-year eMINTS classrooms scored an average of 3.63 points higher than students enrolled in non-eMINTS classrooms. Students enrolled in targeted assistance schools and second-year eMINTS classrooms scored an average of 13.44 points higher than students enrolled in non-eMINTS classrooms.

Results by Type of Service Delivery

Figure 4 and Table A.4 contain results by the type of service delivery students received. As previously discussed, students typically receive Title I services in one of two ways: by pulling a student out of the classroom to receive assistance or by pushing a Title I teacher into the classroom to work with a student.

The results suggest that students enrolled in second-year eMINTS classrooms who were pulled out for one-on-one Title I assistance scored higher on average than students who received Title I assistance in a push-in manner. For Title I students enrolled in schoolwide schools, those students enrolled in second-year eMINTS classrooms and pulled out for Title I assistance scored an average of 6.91 points higher than non-eMINTS students. In contrast, Title I students enrolled in second-year eMINTS classrooms who received push-in Title I assistance scored an average of 2.88 points lower than non-eMINTS students.

A similar set of differences is visible in the results from targeted assistance schools. In targeted assistance schools, Title I students enrolled in second-year eMINTS classrooms and pulled out for Title I assistance scored an average of 10.75 points higher than non-eMINTS students. Title I students enrolled in second-year eMINTS classrooms who received push-in Title I assistance scored an average of 2.29 points higher than non-eMINTS students.

Again, the interpretation of these results requires some caution since they are based on a relatively small number of students, and one cell contained no observations. With that in mind, the results suggest that enrollment in a second-year eMINTS classroom makes a positive difference in student performance, especially when the service delivery is pull-out. Accordingly, the combination of eMINTS enrollment and the intensive assistance provided by pulling students out of their regular classrooms for individualized tutoring by a Title I teacher appears to help third-grade Title I students score higher on the MAP Communication Arts test.

Figure 4
MAP Communication Arts Results for Title I Students by Type of Service Delivery

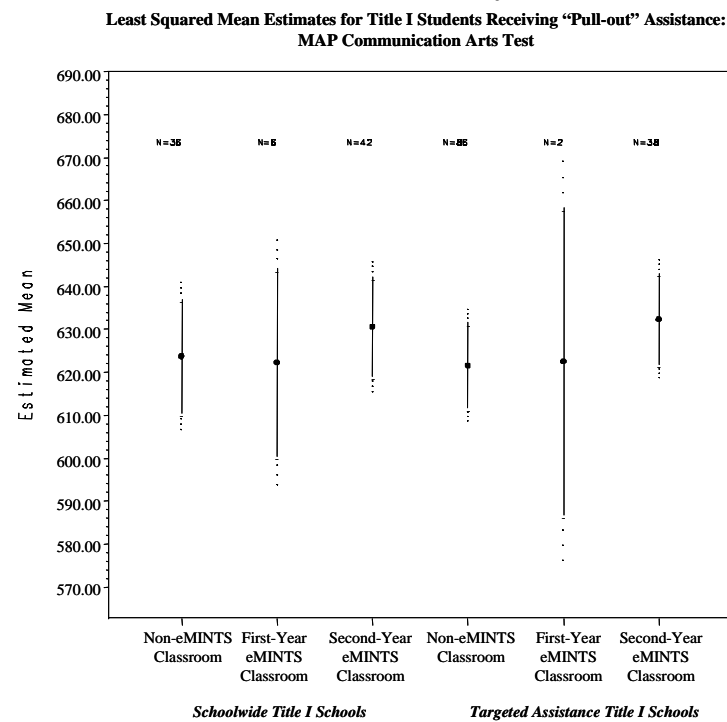
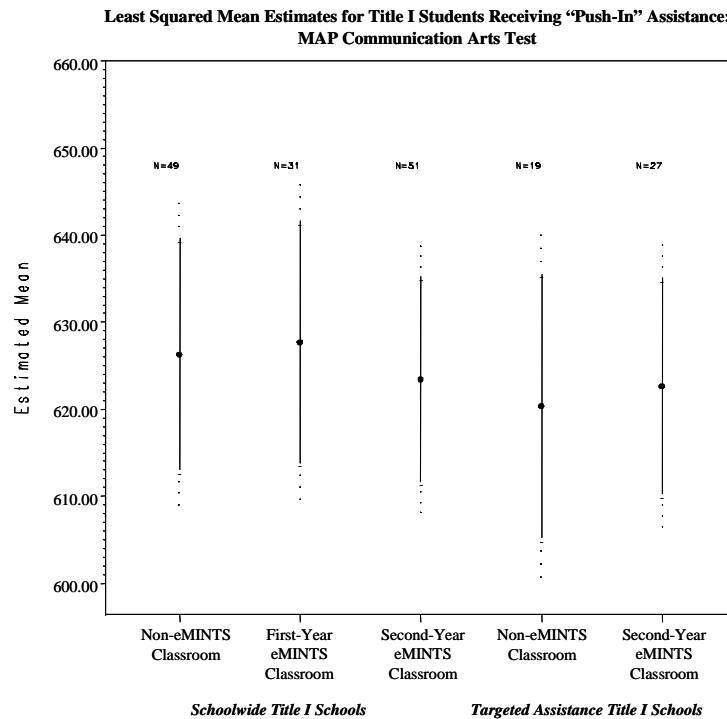
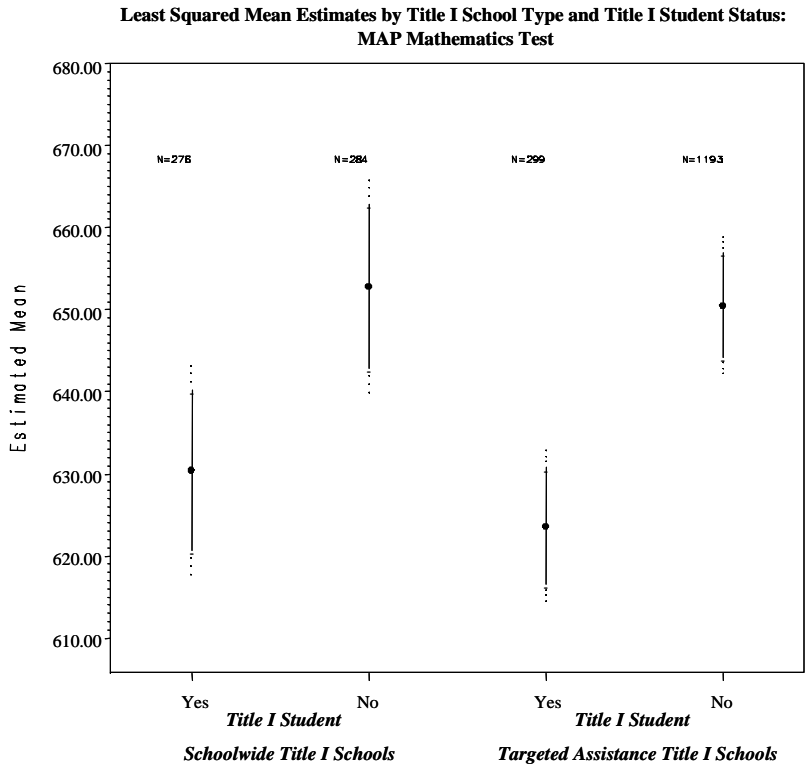


Figure 5
MAP Mathematics Results by Title I School Type and Title I Student Status



Differences on the Fourth-Grade Mathematics Test

Figures 5 through 8 and Tables A.5 through A.8 contain results for the fourth-grade MAP Mathematics test. These results differ in magnitude from the results of the Communication Arts test. However, the general conclusion still holds: student enrollment in an eMINTS classroom supports the efforts of the Title I program to raise student performance in some contexts.

Figure 5 and Table A.5 show the basic differences in the MAP Mathematics scores. The overall magnitude of difference is similar to the difference on the MAP Communication Arts test. Title I students scored an average of 24.65 points lower than other students. Students in schoolwide schools scored an average of 4.55 points higher than students in targeted assistance schools. On average, among schoolwide schools, Title I students scored 22.40 points lower than non-Title I students. Among targeted assistance schools, Title I students scored 26.89 points lower than non-Title I students.

Figure 6 and Table A.6 present the full model. Students enrolled in schoolwide schools and enrolled in eMINTS classrooms scored lower than students enrolled in non-eMINTS classrooms in those schools. In both cases, students in non-eMINTS classrooms scored higher than students in second-year eMINTS classrooms. However, the difference for Title I students is much smaller than the difference for non-Title I students. Title I

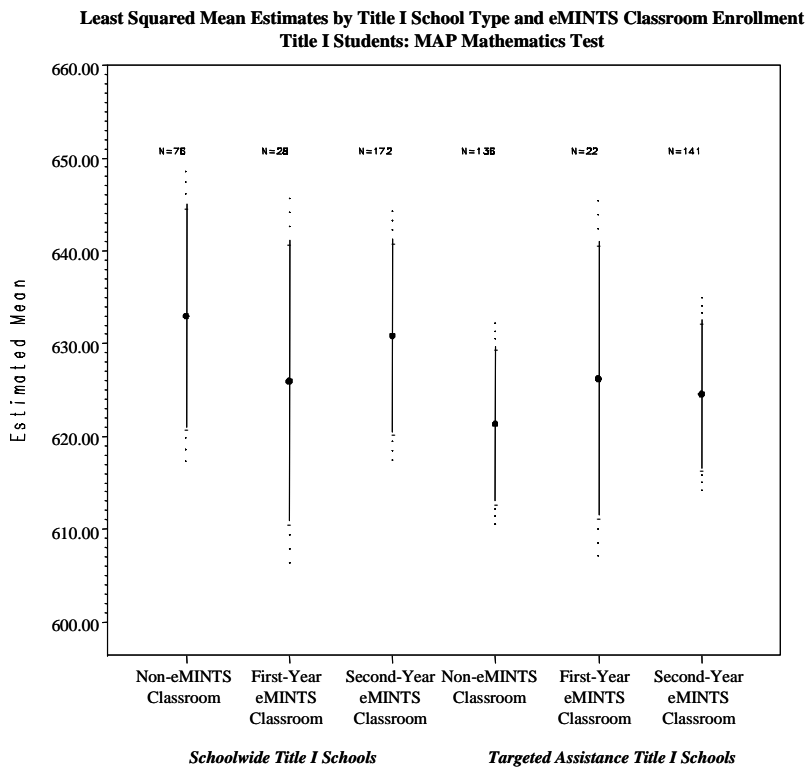
students enrolled in eMINTS classrooms scored 2.13 points lower than students in non-eMINTS classrooms. On the other hand, the difference for non-Title I students is 7.51 points.

The differences for students enrolled in targeted assistance schools showed that Title I students in second-year eMINTS classrooms scored an average of 3.22 points higher than Title I students enrolled in non-eMINTS classrooms. This difference is 5.20 points for non-Title I students.

With regard to the gap in performance between Title I and non-Title I students, Table A.6 showed that the smallest gap (18.5 points on average) was in second-year eMINTS classrooms in schoolwide schools. Conversely, the largest gap (27.35 points on average) was found in second-year eMINTS programs in targeted assistance schools.

These mixed results suggest important differences in outcomes regarding the relationship between Title I school type and eMINTS classroom enrollment for Title I and non-Title I students. While they show that eMINTS enrollment in schoolwide schools is associated with a smaller gap in performance between Title I students and non-Title I students in schoolwide schools, they also show that performance on average in those schools was lower in eMINTS classrooms than in non-eMINTS classrooms. Moreover, the difference between non-eMINTS classroom enrollment and second-year classroom enrollment was consistently smaller for Title I students than for non-Title I students. Accordingly, these outcomes suggest that while eMINTS support for Title I students varies, the strongest support appears to be in schoolwide schools because: (1) the Title I/non-Title I performance gap was smallest in second-year eMINTS classrooms in schoolwide schools and (2) students in second-year eMINTS classrooms in schoolwide schools performed higher on average than Title I students in targeted assistance schools (although the highest performance was in non-eMINTS classrooms in schoolwide schools).

Figure 6
MAP Mathematics Results, Controlling for Title I School Type, Title I Student Status and eMINTS Classroom Enrollment



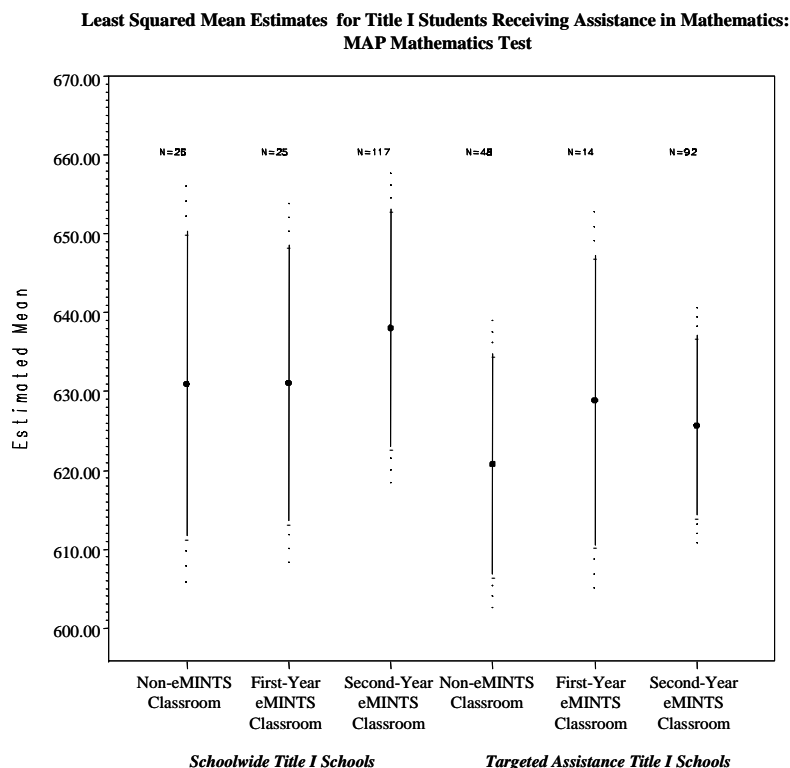
Differences for Title I Students: Curricular Area and Type of Service Delivery

The results for Title I students receiving assistance in mathematics and for Title I students by type of service delivery highlight the positive impact of the eMINTS program. These models show that enrollment in eMINTS classrooms helps Title I students receiving assistance in mathematics score higher than students enrolled in non-eMINTS classrooms and that Title I students in schoolwide schools benefit from a push-in approach to Title I service delivery.

Assistance in Mathematics

Figure 7 and Table A.7 contain results for an analysis of the effects of receiving Title I assistance in mathematics. The results indicate that the combination of enrollment in a second-year eMINTS classroom and the receipt of Title I assistance in mathematics produced a net gain in MAP Mathematics scores for students enrolled in both types of Title I schools. For students enrolled in schoolwide schools, enrollment in a second-year eMINTS classroom produced scores an average of 7.09 points higher than the scores of students enrolled in non-eMINTS classrooms. For students enrolled in targeted assistance schools this difference is 4.89 points. In contrast students, enrolled in schoolwide schools and second-year eMINTS classrooms, who did not receive assistance in mathematics scored 8.76 points lower than students enrolled in non-eMINTS classrooms. For students enrolled in targeted assistance schools this difference is -3.18 points.

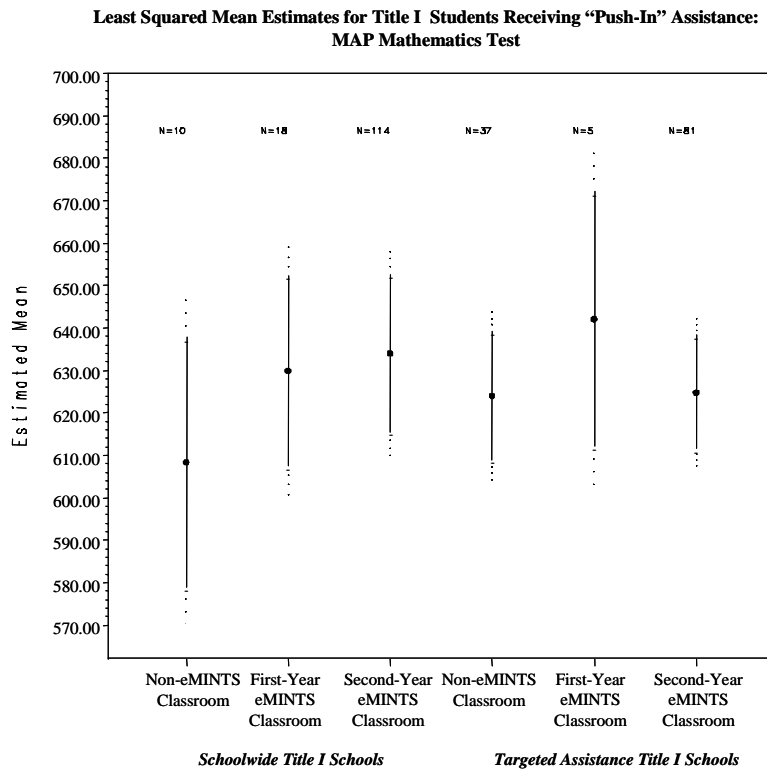
Figure 7
MAP Mathematics Results for Title I Students Receiving Assistance in Mathematics, by Title I School Type and eMINTS Classroom Enrollment



Results by Type of Service Delivery

Figure 8 and Table A.8 contain results by the type of delivery of Title I services. An uncharacteristically large difference exists for students enrolled in schoolwide schools who received Title I services on a push-in basis. Among those students, students enrolled in second-year eMINTS classrooms scored an average of 25.64 points higher than those students enrolled in non-eMINTS classrooms. This finding is the largest difference in the set of models presented in this report, and was one of the highest performances for Title I students in mathematics. The other high performance by Title I students was in non-eMINTS classrooms with pull-out services in schoolwide schools. The lowest performance on average (608.39) for Title I students was for those students who received push-in services in non-eMINTS classrooms in schoolwide schools.

Figure 8
MAP Mathematics Results for Title I Students by Type of Service Delivery



Summary

The results of the models for the MAP Communication Arts and Mathematics tests show mixed results associated with student enrollment in second-year eMINTS classrooms for Title I students. While Title I students in these classrooms, taught by teachers who have completed the eMINTS professional-development program, often scored higher than students enrolled in non-eMINTS classrooms, in some contexts they did not.

Some of the larger differences are visible for students enrolled in targeted assistance schools. This tendency does not suggest that targeted assistance schools are superior to schoolwide schools. Schoolwide schools scored higher than targeted assistance schools (see Figures 1 and 5 and Tables A.1 and A.5). Students in targeted assistance schools showed greater variance among eMINTS classroom types than students in schoolwide schools. This finding suggests that the schoolwide programs are somewhat more successful in working with students in all types of classrooms.

Within these school-level differences, the impact of eMINTS classroom enrollment varied across subject area, Title I school type, and delivery of service. Title I students enrolled in second-year eMINTS classrooms scored higher on the MAP Communication Arts test than students enrolled in non-eMINTS classrooms. In mathematics, however, Title I students in eMINTS classrooms scored lower in schoolwide schools, but higher in targeted assistance schools.

When focusing on the curricular area of Title I assistance, those students who received Title I assistance in the same curricular area as the MAP test scored higher than those students who received Title I assistance in another subject. In other words, those students who received assistance in communication arts and reading and were enrolled in second-year eMINTS classrooms scored higher on the MAP Communication Arts test than those students who received assistance in mathematics. A similar result is visible on the MAP Mathematics test for students who received assistance in mathematics and were enrolled in second-year eMINTS classrooms.

The role of the type of service delivery (pull-out or push-in) also varied. For third-grade students, the highest score on average was found to be for Title I students enrolled in a second-year eMINTS classroom and who received pull-out services in targeted assistance schools. Moreover, Title I students who were enrolled in second-year eMINTS classrooms and received pull-out services scored higher on average on the MAP Communication Arts test than students receiving push-in services across school type. However, the situation for fourth-grade students was different. The highest scores on average were found to be for Title I students in a first-year eMINTS classroom with push-in services in targeted assistance schools.

With regard to the gap in performance between Title I and non-Title I students, the smallest gap was found in second-year eMINTS classrooms in mathematics. The next smallest gap was in second-year eMINTS classrooms in communication arts.

The analysis of the types of service delivery is complicated by the number of students in each school. In the third grade, the analysis is based on scores from approximately 200 students; in the fourth grade, the analysis based on fewer than 130 students. The smallness of these numbers prevents the formulation of a definitive statement on the interactions among service delivery, Title I school type and enrollment in an eMINTS classroom. Interpretation is also complicated by cells with no observations. Further analysis should be done to clarify the results.

Despite some of these difficulties, the findings suggest that enrollment in eMINTS classrooms benefits Title I students in some contexts. To understand some of the ways that eMINTS enrollment supports the performance of Title I students, the eMINTS evaluation project spoke with Title I teachers in the FY03 eMINTS schools. The comments of these teachers help to illustrate the ways the eMINTS program helps Title I students achieve academically.

How eMINTS Supports the Educational Achievement of Title I Students

In addition to the quantitative analysis, the eMINTS evaluation team conducted interviews with Title I teachers in 35 of the 40 FY03 eMINTS schools. These interviews asked Title I teachers to reflect on the difference that enrollment in an eMINTS classroom made for the students with whom they worked.

Of the 35 Title I teachers, 4 were skeptical about the effectiveness of eMINTS enrollment in improving the work of Title I students. One teacher commented on the progress observed among the Title I students enrolled in the school's eMINTS classrooms, but were not comfortable attributing progress to the program:

Their reading has improved dramatically, but I'm not sure whether it's improved dramatically because of the drill and repetition they've been getting over here... maybe the mother made them read every book in the library...I don't know how eMINTS is going to be able to prove this connection to Title I and eMINTS...based on the MAP. I can't see using the MAP only.

Another teacher wanted to reserve judgment because of the newness of the program:

It is a neat program. I know the excitement is there. I can see the knowledge coming out of those kids...I can just see they have this wealth of knowledge of how to look up something or how to research something. But, I think it's so new that I'm not sure how much overall it's really helping them.

However, these views were in the minority. Most of the Title I teachers related compelling stories of increased motivation and greater self-confidence among the Title I students enrolled in eMINTS classrooms. This increase in motivation and self-confidence led to students working harder, producing more and achieving greater competency in their basic skills. When asked to elaborate about the factors that had the greatest impact on the performance of Title I students, most Title I teachers cited two items: first, having a skilled eMINTS teacher in the classroom, one capable of conducting the inquiry-based lessons that are at the center of the eMINTS professional-development program; and second, having the Title I teachers work with students on a push-in basis.

Improving Student Motivation and Building Student Confidence

The Title I teachers interviewed said that many of their students come to them with little confidence in their ability to do anything well. One teacher expressed concern, saying, "Lack of ability translates into lack of confidence." Another teacher, noting that students judge their abilities in relation to their classmates, said, "Title I students tend to get pretty down on themselves in the world." A third teacher said, "Some of them need a morale boost." The teachers also referred to the students as being "potential drop-outs."

Title I teachers were aware that their students made social comparisons. The Title I teachers gave credit to the eMINTS program for more positive social interactions for their students. Teacher said that Title I students' social skills were hindered by their lack of confidence and that eMINTS "gives them a lot of confidence because they learn." Agreement on this improved confidence was widely voiced: "It opens them up and gives them some ideas that maybe they didn't think that they were good at...I'm seeing it to be very positive, the area of self-esteem." Other teachers related how Title I students, many for the first time, were getting a chance to be leaders in their classes. "[The Title I

students] can get on those computers and all of a sudden their skills are at the top of the class, while their gifted peers, who are verbal to no end, they look at their peers that have been in Title I and they are like, ‘Wait a minute, I’m learning from you now.’” One teacher was direct in saying that the Title I students get easily frustrated when they are not successful and that eMINTS was something “to get excited about” because it is providing education “in a way that’s motivational and focusing on success.” Another teacher echoed this sentiment by saying that the Title I students experienced “a sense of accomplishment when they find out they can come up with something on their own and do their own research.” The following comments are typical examples of what Title I teachers had to say about their students’ successful eMINTS experiences:

You can find that students that are considered on the low side can actually be winners, and they can create things that are beyond what they’re normally expected....They can create.

We just had a demonstration to the board....I saw some students read some things on the projector, that they wouldn’t have done in a single situation. But, they had a chance to learn this; they learned the words. They knew those words. I couldn’t differentiate between what I would have considered special students and the better students....And it makes the student feel good while they’re doing it and so they want to do a little more.

There was one student who has some pretty moderate articulation errors and he stood right up and read. I know he had practiced that a lot....He did it, he did his part; he stood up there. Those kind of kids who have sound disorders, a lot of times, feel so badly about it, they wouldn’t get up in front of a room and read anything, but he made a presentation.

It appears that the changed social context of the classroom improved confidence and in turn led to increased motivation. Title I teachers reacted to this paradigm shift with the following comments: “I loved it when I saw it happen,” and “It’s really amazing.”

The Title I teachers credited the positive change seen in the confidence level of Title I students to the transformed learning environment of the classroom.

Transformed Learning Environment of Classroom

Title I teachers used terms such as “higher level thinking,” “cooperative learning,” “the use of graphic organizers,” “the zone of proximal development, and “scaffolding” to describe what was going on in the eMINTS classrooms. One teacher said, “It’s added a lot of valuable enrichment to the curriculum.” The much different learning environment of the eMINTS classrooms was praised by the Title I teachers as giving benefit to the Title I students. They felt the students were challenged but not overwhelmed because they had support from their classroom teachers, push-in Title I teachers, peers and the technology-rich, inquiry-based curriculum. One Title I teacher put it this way:

Having eMINTS gives the teachers the courage and gives us all some supports that we need for those kids to stay in those classrooms instead of being pulled out ...We who work with special needs kids are wonderful at dummifying kids down. I mean you think they had troubles before they started, by the time we pull them out, we've really contributed [to the problem]....Keeping them in the classroom is good wisdom....And, these kinds of programs are what make that possible.

The teacher went on to say that before eMINTS, “teachers didn’t have the support that they needed to do it, we didn’t have the technology we needed or even along with the technology comes people who come in and give you the training...it’s just been that perfect thing.”

The Importance of a Skilled eMINTS Classroom Teacher

Title I teachers attributed the creation of a positive classroom environment to the ability of eMINTS teachers to apply the constructivist and inquiry-based instructional principles they learned in the eMINTS professional-development program. They noted that the teachers most able to apply these principles were second-year eMINTS teachers. The Title I teachers felt that classroom teachers in their second eMINTS year were more skilled at the adoption of the new practices necessary to create fully functioning eMINTS classrooms. Serving students in three different rooms, one Title I teacher saw the value that a teaching style can contribute: “I think the teaching styles still make the impact on the students and not necessarily the computers.” This teacher went on to say that the students experiencing the greatest gains had a dynamic classroom teacher and that “computers only enhance what she does and her students are doing very well.” The Title I teacher felt the ability of the classroom teacher to meet the needs of all the learning styles in the classroom was praiseworthy. Some Title I teachers credited the training the eMINTS teachers receive. One said, “I think the training that goes with that really lets teachers see better ways to do things and they’re really more open to learning how to accomplish growth in Title I students.” A teacher noted the achievement in one classroom:

[The students] are much quicker; they don’t ask us as many questions....Year after year of the past three years, they really seem to make higher gains...and I think it’s because of the teaching methods that [teacher] is using through the eMINTS program.

Skilled teachers included Title I students as part of their class communities. Title I teachers approved of this inclusion. Two examples follow:

For lack of better words, it’s just a wonderful, wonderful program. I don’t think it’s too much for Title kids. I think it’s just as exciting for them and just as challenging for them as the next person.

We're for the eMINTS-based program. You're not just listening to somebody lecture; you actually get to find things. And you can visualize it....The learning-disabled person is really going to benefit as far as pulling up that bottom end.

The Title I teachers interviewed noted the skill level of second-year eMINTS teachers with regard to the use of cooperative-learning activities and the ability to use multimedia tools in a technology-rich, inquiry-based curriculum.

Likewise, Title I teachers thought that skilled eMINTS classroom teachers engaged students in cooperative-learning groups in technology-rich, inquiry-based classrooms.

Cooperative-Learning Groups

In an eMINTS classroom, students team together to study an essential question or construct a meaningful product. Each student is accountable for individual work and the work of the group. The Title I teachers were mindful that for their students, learning was supported by modeling and by being accountable for interactions with their peers. The Title I teachers recognized that the eMINTS students were enjoying true collaboration. One teacher said, "It is not just a computer and you tell [the students] to work together." Students shared strengths and the Title I students were stretched. In speaking about cooperative learning, a Title I teacher observed, "A lot of times kids really respond to other kids. It's been good for them, too." The teacher went on to recount that before eMINTS, Title I students only interacted with other Title I students. That teacher thought the classroom interaction was valuable because the Title I students worked with "the high achievers in there and they get to see how this other student does it. And, it has really pushed them immensely." Another Title I teacher expressing support of cooperative learning said the following:

If you pair them with someone—if you have someone that will coach them and not give them the answer—I think it works well, because then they get to watch another kid.

Learning to foster peer collaboration among students is an essential aspect of the eMINTS training for teachers. In the eMINTS classroom, the Title I students were not solely reliant on the classroom and Title I teachers. They also relied on their fellow students.

Peer collaboration coupled with a technology-rich, inquiry-based curriculum expands the options for student learning. The teacher who said that technology enhanced the way students were being taught noted that this resource was essential: "I don't think that if you just did the cooperative learning only, I don't believe that would provide [students] with the tools that would...enhance their learning so much."

Technology-rich, Inquiry-based Curriculum

According to the teachers interviewed, the technology-rich, inquiry-based curriculum at the center of the eMINTS professional-development program accelerated learning for

Title I students in eMINTS classrooms. One of the most powerful confirmations of this acceleration was shared by the Title I teacher who said that Title I students have been conditioned to “sit and wait for an answer. eMINTS helps them discover an answer.”

Title I teachers noted that technology impacted the way that content was presented and helped accommodate the learning styles of students. Some teachers said the biggest learning gains were made by at-risk students because of the ability the eMINTS classrooms has to meet the needs of all of the learning styles. Many teachers called the technology an asset. One teacher said, “I think it’s a real asset to those kids who are in the eMINTS program. I think they’re seeing a different way of learning through the use of technology.”

The Title I teachers felt the eMINTS technology changed the how, when and where students could access information. Teachers found that their Title I students were able to learn a lot on their own, rather than asking for a lot of help. One teacher remarked, “They’ve got a choice to click whenever they want....They don’t need the teacher...they do a really good job; they can find information.” The teachers emphasized the ability students had to research on their own, pleased that students could navigate for sources: “They can find that information and get it out. They don’t have to always necessarily be a memorizer.”

The teachers cited the Smart Board as something that made learning “come alive” because the students could interact with it. A teacher remarked, “It’s just exciting to see the kids enjoy learning and not feel like it all has to be paper and pencil and drudgery.”

Title I teachers were pleased that eMINTS helped close the technology gap imposed by economic disparity:

As many of our records show, [students] are from low economic class. They can’t afford a computer, much less a computer on line. So that helps them stay up with the rest, gives them a sense of pride when they are around other kids...especially for those children, it really is big. They have a lot of interest in school.

The positive role technology plays in a discovery- or inquiry-based curriculum was reported by the majority of Title I teachers. One teacher said, “I feel pretty comfortable saying that would be an advantage for [Title I] students.” Another teacher said the following:

You are so limited when you have textbooks. When you have this, it’s endless and you can get what you need. A child is able to work faster and they can get more in-depth about what they are learning.

Title I teachers accepted that the eMINTS technology was a tool and would not have the benefit it has for the students without being tied to a discovery- or inquiry-based curriculum. One teacher said, “I think if the technology tools are used correctly, I think

[the students] definitely benefit.” As this quote suggests, Title I teachers are convinced that inquiry-based instruction is appropriate for their students:

I think that the constructivist lesson plans and the constructivist process...I think it helps a lot of the Title I students with processing. First step, second step, problem solving, this didn't work, what went wrong, trying to fix it. I've seen it help in papers, students try to figure out, 'What could I have done?'

The Role of the Inquiry-based Learning

The notion of discovery or inquiry-based learning for Title I students generated a number of reflective comments from Title I teachers. They have seen their disadvantaged students succeed using project-based instructional techniques. The teachers saw this approach to learning, one that nurtures inquiring attitudes, as appropriate and stimulating for the students. eMINTS teachers, using the inquiry-based curriculum as the program intends, act as facilitators of learning. All students are actively involved in problem-solving and critical thinking. The Title I teachers appreciated that their students could be active learners in the eMINTS classrooms. Praising this type of learning, a teacher said, “It really encouraged them to do critical thinking and you know that's a skill that a lot of kids have lost...Inquiry-based learning, that's going to foster [critical thinking].” Another teacher liked the fact that the students could not only find information but also evaluate it. Title I Teachers across grade levels thought it bolstered student achievement. Title I teachers reported the following:

If students are interested in the topic, they're going to want to learn. It's a good idea to let the students learn their way. It gives them a strategy to use other than the ones they're already using.

It lets students take off a little bit on their own, while still keeping within the context of the assignment. It's valuable for all students including Title I.

It's a benefit putting them in charge of their learning. They might need a little bit more direction than some students but they are more motivated. You're talking about kids in Title I that often aren't motivated. They're often the kids who don't write well and of course they're the ones that don't read as well and so they're getting an extra reinforcement through their eMINTS projects. I just can't help but think that helps Title I students.

Title I teachers witnessed the skill of eMINTS teachers when fostering collaboration among students in cooperative-learning groups and using multimedia technology in a constructivist manner. The Title I teachers reported that instructional goals were accomplished for students with differing abilities when the Title I teachers and the eMINTS teachers were working together. They thought the eMINTS teachers' skills were complemented by the support of the push-in Title I teachers.

The Importance of a Push-in Title I Teacher

The Title I teachers made the case that since one of the challenges with the Title I students is reading, having a push-in instructional approach affords students immediate help. One teacher argued the following:

With eMINTS it gets them more excited about [reading]. We can guarantee that they're going to say 'Come here and help me with this real quick,' because they are so excited about getting to do that kind of stuff with the technology. I think it's a great program; I wish it could be in every grade.

According to the Title I teachers, a general ratcheting up in reading and writing skills seemed to be the effect of having a push-in Title I teacher in an eMINTS classroom. The in-class instructional approach was the preferred method of delivery for many Title I teachers. It was agreed that being engaged in reading improved reading. Teachers verified this consensus with statements like, "The ones that read are going to be the ones that progress a lot and make improvements." Another teacher said she thought Title I students read more in eMINTS: "They are more inquisitive, more inquiring and more apt to dig into what it is they are looking for, and therefore [the students] read more." During another interview, the teacher said that the students in the eMINTS classrooms were reading more because they were "reading with a purpose." The teachers also saw setting the bar a little higher in the eMINTS classrooms as an advantage:

I actually see [setting the bar higher] as good, because these students actually see what is out there. They may not be able to read every word, but most cases they can get an understanding of what is being said....They keep working upward....A lot of times we give them materials to read there's not an interest, where on the Internet it may be a little bit above them, but they are engaged because they have that interest.

In comparing eMINTS classes with non-eMINTS classes, a teacher said, "hands-down" eMINTS helps. The teachers thought the reading level and the comprehension was higher in eMINTS. One teacher said, "I note that direct correlation with...eMINTS, much more engaged in reading activities through the program." In a related comment, another teacher had the following reaction:

I can't tell you enough how amazed we are at this building with their test scores and their writing skills. They just, they don't seem to complain of writing activities and they do a lot of research...You can tell a difference, you really can....They are writing better.

This teacher went on to say that for the non-eMINTS classrooms she serves it is "like pulling teeth" to get students engaged in writing activities. The teachers who pushed-in to eMINTS classrooms observed reading and writing gains in their students.

Summary

The comments of the Title I teachers reveal how the differences between eMINTS classrooms and traditional classrooms helped to motivate Title I students and improve their sense of themselves as learners. They directly attributed these changes in Title I students to the constructivist, inquiry-based instructional practices of experienced eMINTS teachers. Within eMINTS classrooms, Title I teachers felt they were most effective when Title I assistance was delivered in a push-in manner.

Conclusions

This report has examined the role of the eMINTS program in supporting the goals of the Title I program, especially as those goals relate to the academic performance and social development of the students who receive Title I assistance. A series of statistical models presented in the first part of this report describe the interactions among student enrollment in a Title I school, student enrollment in an eMINTS classroom, the curricular area in which a student receives Title I assistance and the method of Title I service delivery. These models show that, while results were mixed across Title I school type, classroom type, and delivery of service, there was evidence to suggest that the gap in performance between Title 1 and non-Title I students was the smallest in second-year eMINTS classrooms in both communication arts and mathematics. Moreover, the highest score on average in communication arts for Title I students was in a second-year eMINTS classroom with pull-out services, and in mathematics the highest average score was found in a first-year eMINTS classroom with push-in services.

Comments about the positive effects of the eMINTS program on both the academic performance and the social development of Title I students came from the Title I teachers themselves. These teachers saw their students become more motivated to complete their work and become more confident in their ability to be successful in their work. Title I teachers attributed this change to the inquiry-based instructional practices that are part of the eMINTS professional-development program.

The Title I teachers observed that they were most effective when they provided assistance on a push-in basis. They observed that they were better able to provide students with immediate assistance and help keep students focused on their learning tasks. The quantitative analysis of the interaction between the type of service delivery and eMINTS classroom enrollment was ambiguous, however. For the MAP Communication Arts test it appeared that students who were pulled out of their classrooms saw a greater benefit than did those students who received push-in assistance. The results for the MAP Mathematics test suggest that students who received assistance on a push-in basis scored higher than those who were pulled out. Unfortunately, the current analysis cannot resolve this contradiction. Further analysis should be done to clarify the results.

In summary, the findings suggest that the eMINTS program provides Title I schools, Title I teachers and Title I students with the resources they need to realize the overall goal of the Title I program, which is to provide assistance to the students most at risk of academic failure, in some contexts; in other contexts, the findings suggest otherwise. On average, however, the gap in performance between Title I and non-Title I students is the

smallest in second-year eMINTS classrooms. The eMINTS program supports the goal of Title I by creating a positive, inquiry-based learning environment that uses technology to improve the performance of all students. Given these findings, it would seem that a closer integration of the two programs would help benefit more Title I students statewide. For example, Title I funds could be used to support the installation of eMINTS classrooms and the training of eMINTS teachers, exposing more Title I students to the benefits of the eMINTS program. This investment would help Missouri to realize the overall goals of the Title I program, namely, helping those students most at risk of educational failure develop into motivated and competent learners.

Appendix A

Table A.1
MAP Communication Arts Results by Title I School Type and Title I Student Status

Title I Student Status	Number of Students	Mean Estimate	Standard Deviation	Lower 95% Confidence Interval	Upper 95% Confidence Interval
Yes	397	624.90	2.32	620.35	629.44
No	1123	651.45	2.14	647.25	655.64

Difference in Estimates -26.55

Title I School Type	Number of Students	Mean Estimate	Standard Deviation	Lower 95% Confidence Interval	Upper 95% Confidence Interval
Schoolwide	604	639.85	3.23	633.52	646.18
Targeted Assistance	916	636.49	2.61	631.37	641.62

Difference in Estimates 3.36

Title I School Type	Title I Student Status	Number of Students	Mean Estimate	Standard Deviation	Lower 95% Confidence Interval	Upper 95% Confidence Interval
Schoolwide	Yes	215	627.08	3.48	620.25	633.91
	No	389	652.62	3.42	645.90	659.34
Targeted Assistance	Yes	182	622.72	3.06	616.72	628.72
	No	734	650.27	2.56	645.24	655.30

Differences in Estimates

Schoolwide -25.54
 Targeted Assistance -27.55

Variance Components

	Estimate	Standard Error	Z-Value	P-Value
School	84.02	31.72	2.65	0.0040
Residual	609.53	22.34	27.29	<0.0001
Total	693.55			

Tests for Fixed Effects

	Df Numerator	Df Denominator	F-Value	P-Value
Title I School Type	1	1492	0.65	0.4195
Title I Student Status	1	1492	267.07	<0.0001
Interaction	1	1492	0.38	0.5356

Table A.2
MAP Communication Arts Results, Controlling for Title I School Type, Title I Student Status and eMINTS Classroom Enrollment

Title I School Type	Title I Student	eMINTS Classroom Type	Number of Students	Mean Estimate	Standard Deviation	Lower 95% Confidence Interval	Upper 95% Confidence Interval
Schoolwide	Yes	Non-eMINTS	85	625.43	4.35	616.89	633.97
		First-Year eMINTS	37	625.59	5.46	614.88	636.30
		Second-Year eMINTS	93	627.58	3.88	619.97	635.20
	No	Non-eMINTS	204	647.51	3.77	640.13	654.90
		First-Year eMINTS	50	651.35	4.89	641.75	660.95
		Second-Year eMINTS	135	656.44	3.62	649.34	663.54
Targeted Assistance	Yes	Non-eMINTS	105	616.77	3.54	609.82	623.71
		First-Year eMINTS	2	620.01	17.66	585.36	654.65
		Second-Year eMINTS	75	629.65	3.74	622.32	636.97
	No	Non-eMINTS	394	649.08	2.82	643.54	654.61
		First-Year eMINTS	19	643.16	6.42	630.58	655.75
		Second-Year eMINTS	321	650.22	2.63	645.07	655.37
<i>Differences in Estimates</i>							
Schoolwide	Yes	Non-eMINTS					
		First-Year eMINTS	0.16				
		Second-Year eMINTS	2.15	1.99			
	No	Non-eMINTS					
		First-Year eMINTS	3.84				
		Second-Year eMINTS	8.93	5.09			
Targeted Assistance	Yes	Non-eMINTS					
		First-Year eMINTS	3.24				
		Second-Year eMINTS	12.88	9.64			
	No	Non-eMINTS					
		First-Year eMINTS	-5.92				
		Second-Year eMINTS	1.14	7.06			

(Continued.)

Table A.2 (Continued)

Variance Components

	Estimate	Standard Error	Z-Value	P-Value
School	77.86	30.00	2.60	0.0047
Residual	605.42	22.25	27.21	<0.0001
Total	683.28			

Tests for Fixed Effects

	Df Numerator	Df Denominator	F-Value	P-Value
Title I School Type	1	1484	0.66	0.4177
Title I Student Status	1	1484	55.32	<.0001
eMINTS Classroom Type	2	1484	5.58	0.0038
Interaction	7	1484	1.68	0.1097

Table A.3
MAP Communication Arts Results for Title I Students Receiving Assistance in
Communication Arts and Reading, by Title I School Type and eMINTS Classroom
Enrollment

Title I School Type	Student Received Assistance in Communication Arts and Reading	eMINTS Classroom Type	Number of Students	Mean Estimate	Standard Deviation	Lower 95% Confidence Interval	Upper 95% Confidence Interval
Schoolwide	Yes	Non-eMINTS	32	616.41	6.3599	603.9	628.92
		First-Year eMINTS	20	621.83	7.3182	607.44	636.22
		Second-Year eMINTS	75	621.61	5.1354	611.52	631.71
	No	Non-eMINTS	53	639.78	6.4706	627.05	652.5
		First-Year eMINTS	17	640.10	8.2254	623.93	656.28
		Second-Year eMINTS	18	643.41	7.7139	628.24	658.58
Targeted Assistance	Yes	Non-eMINTS	82	618.93	5.1504	608.81	629.06
		First-Year eMINTS	2	619.40	17.7235	584.54	654.25
		Second-Year eMINTS	64	625.94	4.7602	616.58	635.3
	No	Non-eMINTS	23	631.81	7.1732	617.71	645.92
		First-Year eMINTS	0				
		Second-Year eMINTS	11	645.25	9.8263	625.93	664.57
<i>Differences in Estimates</i>							
Schoolwide	Yes	Non-eMINTS					
		First-Year eMINTS		5.42			
		Second-Year eMINTS		5.20	-0.22		
	No	Non-eMINTS					
		First-Year eMINTS		0.32			
		Second-Year eMINTS		3.63	3.31		
Targeted Assistance	Yes	Non-eMINTS					
		First-Year eMINTS		0.47			
		Second-Year eMINTS		7.01	6.54		
	No	Non-eMINTS					
		First-Year eMINTS					
		Second-Year eMINTS		13.44			

(Continued.)

Table A.3(Continued)
Variance Components

	Estimate	Standard Error	Z-Value	P-Value
School	150.52	70.33	2.14	0.0162
Residual	560.73	41.60	13.48	<0.0001
Total	711.25			

Tests for Fixed Effects

	Df Numerator	Df Denominator	F-Value	P-Value
Title I School Type	1	365	0.00	0.9648
Student Received Assistance in Communication Arts and Reading	1	365	18.28	<0.0001
eMINTS Classroom	2	365	1.96	0.1427
Interaction	6	365	0.34	0.9158

Table A.4
MAP Communication Arts Results for Title I Students by Type of Service Delivery

Title I School Type	Type of Service Delivery	eMINTS Classroom Type	Number of Students	Mean Estimate	Standard Deviation	Lower 95% Confidence Interval	Upper 95% Confidence Interval
Schoolwide	Push-in	Non-eMINTS	49	626.33	6.76	613.04	639.61
		First-Year eMINTS	31	627.73	7.06	613.84	641.61
		Second-Year eMINTS	51	623.45	5.98	611.68	635.21
	Pull-out	Non-eMINTS	36	623.78	6.73	610.54	637.02
		First-Year eMINTS	6	622.34	11.10	600.50	644.17
		Second-Year eMINTS	42	630.69	5.90	619.08	642.30
Targeted Assistance	Push-in	Non-eMINTS	19	620.37	7.69	605.24	635.50
		First-Year eMINTS	0				
		Second-Year eMINTS	37	622.66	6.32	610.23	635.08
	Pull-out	Non-eMINTS	86	621.65	5.05	611.73	631.58
		First-Year eMINTS	2	622.60	18.15	586.90	658.30
		Second-Year eMINTS	38	632.40	5.38	621.82	642.97
<i>Differences in Estimates</i>			Non-eMINTS	First-Year eMINTS			
Schoolwide	Push-in	Non-eMINTS					
		First-Year eMINTS	1.40				
		Second-Year eMINTS	-2.88	-4.28			
	Pull-out	Non-eMINTS					
		First-Year eMINTS	-1.44				
		Second-Year eMINTS	6.91	8.35			
Targeted Assistance	Push-in	Non-eMINTS					
		First-Year eMINTS					
		Second-Year eMINTS	2.29				
	Pull-out	Non-eMINTS					
		First-Year eMINTS	0.95				
		Second-Year eMINTS	10.75	9.80			

(Continued.)

Table A.4 (Continued)

Variance Components

	Estimate	Standard Error	Z-Value	P-Value
School	130.71	61.37	2.13	0.0166
Residual	594.58	43.90	13.54	<0.0001
Total	725.29			

Tests for Fixed Effects

	Df Numerator	Df Denominator	F-Value	P-Value
Title I School Type	1	365	0.09	0.7652
Type of Service Delivery	1	365	0.17	0.6765
eMINTS Classroom	2	365	0.72	0.4859
Interaction	6	365	0.49	0.8146

Table A.5
MAP Mathematics Results by Title I School Type and Title I Student Status

Title I Student Status	Number of Students	Mean Estimate	Standard Deviation	Lower 95% Confidence Interval	Upper 95% Confidence Interval
Yes	575	627.08	3.08	621.04	633.12
No	1477	651.73	3.02	645.81	657.64
<i>Difference in Estimates</i>		-24.65			

Title I School Type	Number of Students	Mean Estimate	Standard Deviation	Lower 95% Confidence Interval	Upper 95% Confidence Interval
Schoolwide	560	641.68	4.63	632.6	650.76
Targeted Assistance	1492	637.13	3.28	630.7	643.56
<i>Difference in Estimates</i>		4.55			

Title I School Type	Title I Student Status	Number of Students	Mean Estimate	Standard Deviation	Lower 95% Confidence Interval	Upper 95% Confidence Interval
Schoolwide	Yes	276	630.48	4.98	620.7	640.25
	No	284	652.88	5.08	642.93	662.84
Targeted Assistance	Yes	299	623.68	3.61	616.59	630.77
	No	1193	650.57	3.26	644.18	656.96
<i>Differences in Estimates</i>						
Schoolwide			-22.40			
Targeted Assistance			-26.89			

<i>Variance Components</i>					
	Estimate	Standard Error	Z-Value	P-Value	
School	205.72	61.47	3.35	0.0004	
Residual	933.47	29.41	31.74	<0.0001	
Total	1139.19				

<i>Tests for Fixed Effects</i>					
	Df Numerator	Df Denominator	F-Value	P-Value	
Title I School Type	1	2017	0.64	0.4223	
Title I Student Status	1	2017	122.5	<0.0001	
Interaction	1	2017	1.01	0.3148	

Table A.6
MAP Mathematics Results, Controlling for Title I School Type, Title I Student Status and eMINTS Classroom Enrollment

Title I School Type	Title I Student	eMINTS Classroom Type	Number of Students	Mean Estimate	Standard Deviation	Lower 95% Confidence Interval	Upper 95% Confidence Interval
Schoolwide	Yes	Non-eMINTS	76	633.00	6.12	621.00	645.00
		First-Year eMINTS	28	625.98	7.70	610.88	641.07
		Second-Year eMINTS	172	630.87	5.27	620.53	641.21
	No	Non-eMINTS	153	656.88	5.91	645.29	668.47
		First-Year eMINTS	49	652.53	6.81	639.16	665.89
		Second-Year eMINTS	82	649.37	6.02	637.56	661.18
Targeted Assistance	Yes	Non-eMINTS	136	621.36	4.25	613.02	629.70
		First-Year eMINTS	22	626.23	7.51	611.51	640.95
		Second-Year eMINTS	141	624.58	4.06	616.63	632.54
	No	Non-eMINTS	699	646.73	3.52	639.83	653.63
		First-Year eMINTS	55	657.92	5.65	646.84	669.01
		Second-Year eMINTS	439	651.93	3.37	645.32	658.53
<i>Differences in Estimates</i>							
Schoolwide	Yes	Non-eMINTS					
		First-Year eMINTS	-7.02				
		Second-Year eMINTS	-2.13	4.89			
	No	Non-eMINTS					
		First-Year eMINTS	-4.35				
		Second-Year eMINTS	-7.51	-3.16			
Targeted Assistance	Yes	Non-eMINTS					
		First-Year eMINTS	4.87				
		Second-Year eMINTS	3.22	-1.65			
	No	Non-eMINTS					
		First-Year eMINTS	11.19				
		Second-Year eMINTS	5.20	-5.99			

(Continued.)

Table A.6 (Continue)

Variance Components

	Estimate	Standard Error	Z-Value	P-Value
School	194.90	59.86	3.26	0.0006
Residual	933.49	29.48	31.67	<0.0001
Total	1128.39			

Tests for Fixed Effects

	Df Numerator	Df Denominator	F-Value	P-Value
Title I School Type	1	2009	0.33	0.5667
Title I Student Status	1	2009	99.49	<.0001
eMINTS Classroom Type	2	2009	0.09	0.9155
Interaction	7	2009	1.26	0.2688

Table A.7
MAP Mathematics Results for Title I Students Receiving Assistance in
Mathematics, by Title I School Type and eMINTS Classroom Enrollment

Title I School Type	Student Received Assistance in Mathematics	eMINTS Classroom Type	Number of Students	Mean Estimate	Standard Deviation	Lower 95% Confidence Interval	Upper 95% Confidence Interval
Schoolwide	Yes	Non-eMINTS	26	630.99	9.83	611.68	650.31
		First-Year eMINTS	25	631.11	8.92	613.57	648.64
		Second-Year eMINTS	117	638.08	7.67	623.02	653.14
	No	Non-eMINTS	50	626.98	8.43	610.42	643.53
		First-Year eMINTS	3	629.48	18.09	593.95	665.02
		Second-Year eMINTS	55	618.22	8.23	602.06	634.38
Targeted Assistance	Yes	Non-eMINTS	48	620.83	7.11	606.85	634.81
		First-Year eMINTS	14	628.94	9.34	610.59	647.29
		Second-Year eMINTS	92	625.72	5.82	614.29	637.16
	No	Non-eMINTS	88	630.28	6.70	617.11	643.45
		First-Year eMINTS	8	616.51	12.77	591.42	641.61
		Second-Year eMINTS	49	627.10	6.34	614.65	639.56
<i>Differences in Estimates</i>				Non-eMINTS	First-Year eMINTS		
Schoolwide	Yes	Non-eMINTS					
		First-Year eMINTS		0.12			
		Second-Year eMINTS		7.09	6.97		
	No	Non-eMINTS					
		First-Year eMINTS		2.50			
		Second-Year eMINTS		-8.76	-11.26		
Targeted Assistance	Yes	Non-eMINTS					
		First-Year eMINTS		8.11			
		Second-Year eMINTS		4.89	-3.22		
	No	Non-eMINTS					
		First-Year eMINTS		-13.77			
		Second-Year eMINTS		-3.18	10.59		

(Continued.)

Table A.7 (Continued)

Variance Components

	Estimate	Standard Error	Z-Value	P-Value
School	291.32	111.39	2.62	0.0045
Residual	753.72	46.06	16.36	<0.0001
Total	1045.04			

Tests for Fixed Effects

	Df Numerator	Df Denominator	F-Value	P-Value
Title I School Type	1	538	0.26	0.6089
Student Received Assistance in Mathematics	1	538	0.69	0.4073
eMINTS Classroom Type	2	538	0.01	0.9922
Interaction	7	538	1.02	0.4148

Table A.8
MAP Mathematics Results for Title I Students by Type of Service Delivery

Title I School Type	Type of Service Delivery	eMINTS Classroom Type	Number of Students	Mean Estimate	Standard Deviation	Lower 95% Confidence Interval	Upper 95% Confidence Interval
Schoolwide	Push-in	Non-eMINTS	10	608.39	14.94	579.05	637.74
		First-Year eMINTS	18	629.92	11.40	607.53	652.31
		Second-Year eMINTS	114	634.03	9.44	615.48	652.58
	Pull-out	Non-eMINTS	66	634.55	9.04	616.78	652.31
		First-Year eMINTS	10	627.19	12.10	603.43	650.96
		Second-Year eMINTS	58	627.05	8.92	609.53	644.56
Targeted Assistance	Push-in	Non-eMINTS	37	624.07	7.71	608.92	639.21
		First-Year eMINTS	5	642.17	15.26	612.19	672.15
		Second-Year eMINTS	81	624.89	6.81	611.52	638.26
	Pull-out	Non-eMINTS	99	627.57	6.88	614.05	641.09
		First-Year eMINTS	17	620.98	9.15	603.00	638.96
		Second-Year eMINTS	60	628.60	6.71	615.43	641.78
<i>Differences in Estimates</i>							
Schoolwide	Push-in	Non-eMINTS					
		First-Year eMINTS	21.53				
		Second-Year eMINTS	25.64	4.11			
	Pull-out	Non-eMINTS					
		First-Year eMINTS	-7.36				
		Second-Year eMINTS	-7.50	-0.14			
Targeted Assistance	Push-in	Non-eMINTS					
		First-Year eMINTS	18.10				
		Second-Year eMINTS	0.82	-17.28			
	Pull-out	Non-eMINTS					
		First-Year eMINTS	-6.59				
		Second-Year eMINTS	1.03	7.62			

(Continued.)

Table A.8 (Continued)
Variance Components

	Estimate	Standard Error	Z-Value	P-Value
School	374.82	134.58	2.79	0.0027
Residual	746.19	45.53	16.39	<0.0001
Total	1121.01			

Tests for Fixed Effects

	Df Numerator	Df Denominator	F-Value	P-Value
Title I School Type	1	538	0.02	0.8935
Type of Service Delivery	1	538	0.00	0.9470
eMINTS Classroom Type	2	538	0.49	0.6153
Interaction	7	538	0.97	0.4511

References

- U.S. Department of Education. 2002. *No Child Left Behind: A desktop reference*: 13.
<http://www.ed.gov/offices/OESE/reference.pdf>
- eMINTS Evaluation Project. 2003. *Analysis of 2002 MAP Results for eMINTS Students*.
Columbia, Missouri: Office of Social and Economic Data Analysis.
- eMINTS Evaluation Project. 2004. *Analysis of 2003 MAP Results for eMINTS Students*.
Columbia, Missouri: Office of Social and Economic Data Analysis.
- eMINTS Evaluation Project. 2005. *Analysis of 2004 MAP Results for eMINTS Students*.
Columbia, Missouri: Office of Social and Economic Data Analysis.