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Minnesota Reading Corps Impact on Reducing the Costs of Special Education

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Purpose of this study:

The Minnesota Reading Corps (MRC) is a project of ServeMinnesota which is the organization in Minnesota that is responsible for the AmeriCorps program. The Minnesota Reading Corps consists of AmeriCorps members working in schools to improve student performance in early literacy/reading. This study addresses the impact of students reading performance. The MRC has served children in both prek and k-3 program since 2005.

The purpose of this paper is to estimate the difference in special education eligibility for students that have had the benefit of the Minnesota Reading Corps program for one year and those that have not. Differential rates of special education eligibility are estimated using a matched sample design that controls for prior achievement and demographic characteristics of students. Through a cost analysis process, the cost impact of this difference in special education services for a site having the MRC program is demonstrated. The study does not attempt to analyze other reasons which may contribute to the student differences such as if a new or different curriculum being initiated at the sites, improved staff development, change in the special education criteria used, etc.

The Minnesota Reading Corps Model:

The instructional model used with the MRC is organized around a Response to Intervention (RtI) model. Students are benchmarked fall, winter and spring using AIMSweb. Any student that is below the target for the students' grade is eligible for assistance from the Minnesota Reading Corps except for students needing alternative programs in what would be Tier 3. The AmeriCorps members are provided intensive training in 10 specific literacy interventions. To aid the member at the site, an internal coach, usually a Title I teacher, reading specialist, learning disabilities teacher or school psychologist is assigned to facilitate the decision-making with students and assist the AmeriCorps member with the implementation of the MRC model. In addition, the site is assigned a master coach with expertise in literacy that works with the internal coach and member during the year and assures the fidelity of the program. The grade-level team that decides which students will be assisted by the member usually consists of the classroom teacher, the internal coach and likely the school psychologist. The member uses AIMSweb to do weekly progress



monitoring which is shared with the classroom teacher. The team decides when to change interventions based on the data.

The MRC has a number of goals but the two which are applicable to this study are:

- All students at the sites being served by the MRC will be on target by the end of 3rd grade.
- Because of the success of the MRC, the site will modify its past practice and adopt the model of the MRC. ServeMinnesota refers to this as “systems change.”

Regarding the first goal, the MRC is having a significant impact on students’ literacy. In FY 10, 68.9% of the students receiving the assistance of the Minnesota Reading Corps met the 3rd grade proficiency targets as measured by the Minnesota Comprehensive Assessment (MCA) which is the state managed test. In FY 11 that increased to 79.9%. All of the students served were below proficiency prior to being served by the MRC.

The “systems change” goal is the aspect of the model which is encouraging. If sites actually modify the methodologies used to ones that are more effective for students, not only will this be of significant assistance for the students receiving the tutoring but the performance of all students will be raised as well. A by-product of this “systems change” should be cost savings.

Overview of the Study

Seven hundred fifty-three students who were served by the Minnesota Reading Corps in the Minneapolis schools during the 2010-11 school year were matched with 753 Minneapolis students who attended sites not served by the MRC for that same year. The 1,506 students were matched on 11 similar demographic characteristics.

Matching Criteria

The criteria used for matching students were the following:

1. Literacy/reading scale scores on the MAP test in fall 2010
2. Special education disability category data from fall 2010
3. English Language Learner status from the 2009-2010 end of year
4. Home language status from the 2009-2010 end of year
5. Free or reduced priced lunch from the 2009-2010 end of year
6. Racial/ethnic category
7. Prior year attendance
8. Gender
9. Homeless/highly mobile status from the 2009-10 end of year
10. Date of birth (used only if needed to break ties)

Matching Procedures



Students in both groups were matched on at least seven of nine “matching criteria” variables. The best matches were computer selected after sorting the data files of students with fall literacy/reading scores and no missing demographic codes. Following this sorting, the matched student selected was the student record directly above or below the MRC served student who had the most matches with the MRC student. In the event of a tie, e.g. the student above and below in the file had a match on all nine variables, the student with a birth date closest to the MRC student was selected. Tables 1 and 2 provide the information as to how many variables were matched by students in both groups in grades K-3.

Table 1. Matching Results for Kindergarten

Matching between the MRC students and the non-MRC students were as follows:

- 80 pairs (85 percent) had 7 out of 7 variables matched identically.
- 14 pairs (15 percent) had 6 out of 7 variables matched.

Note: In kindergarten, the two variables not present are prior year attendance and prior year special education status. Also, it is not known if the kindergarten students also had been in a prek program which was served by Minnesota Reading Corps.

Most of the students in the study were in Grades 1, 2 and 3. It is important to note that all of the students receiving services from the Minnesota Reading Corps were performing at below proficiency targets as measured by the MAP test which is given to all students in the Minneapolis district. In other words, all of the students were currently not on track to be proficient readers by the end of third grade as measured by the Minnesota Comprehensive Assessment (MCA).

Table 2. Matching Results for Students in Grades 1, 2 and 3

Grade	8 of 8 variables matched	7 of 8 variables matched	6 of 8 variables matched
Grade 1	107 pairs (51%)	73 pairs (35%)	28 pairs (14%)
Grade 2	151 pairs (73%)	51 pairs (25%)	6 pairs (2%)
Grade 3	180 pairs (74%)	60 pairs (25%)	3 pairs (1%)

Note: 30 MRC students in Grade 1 could not be matched and were therefore removed from the analysis

Table 3. Matching results of Racial/Ethnic background of the study participants in K-3.

<i>Racial/Ethnic Category</i>	<i>Minnesota Reading Corps Students</i>	<i>Non-MRC Corps Students</i>
American Indian	51 (6.8%)	50 (6.6%)
African American	360 (47.8%)	359 (47.7%)
Asian/Pacific Islander	73 (9.7%)	75 (10.0%)
Hispanic	160 (21.2%)	162 (21.5%)
White	109 (14.5%)	107 (14.2%)
Total	753 (100%)	753 (100%)

While the majority of the students in both the MRC and the matched sample spoke English as their home language, other languages are spoken as the home language as well. However, because language is such an important variable, the home language match is nearly 100 percent. This is provided in Table 4.

Table 4. Home Language background of the study participants.

<i>Home Language</i>	<i>Minnesota Reading Corps Students</i>	<i>Non-MRC Corps Students</i>
English	496 (65.9%)	495 (65.7%)
Hmong	54 (7.2%)	54 (7.2%)
Spanish	153 (20.3%)	153 (20.3%)
Somali/Amharic	38 (5.0%)	38 (5.0%)
Other	12 (1.6%)	13 (1.7%)
Total	753 (100%)	753 (100%)

Table 5. identifies the matching on the other four variables on which students were matched for this study. A key variable for student learning is attendance. Both of the groups had excellent attendance records the prior year. Note that this variable is not used for current kindergarten students.

Table 5. Other demographic characteristics of the students in this study.

<i>Variable</i>	<i>Minnesota Reading Corps Students</i>	<i>Non-MRC Corps Students</i>
Prior Year Attendance	93.7%	93.7%
Free or Reduced Price Meals	84.6%	81.3%
Male Participants	50.1%	47.0%
Homeless/Highly Mobile	8.4%	6.1%



Tables 6. Provides both the status of the students in the evaluation process to determine whether students are eligible for special education services and also students actually receiving special education assistance. These are the data which demonstrate the impact of the instruction provided students including the impact which the Minnesota Reading Corps is having on the need for students to access special education support in order for them to be proficient in reading.

Table 6. End of year status regarding special education.

Grade	Regular Education		Evaluated for special ed. but not eligible		Eligible for special ed. but not served		Receiving special ed. Instruction	
	MRC	Non-MRC	MRC	Non-MRC	MRC	Non-MRC	MRC	Non-MRC
Kindergarten	91	85	1	1			2	8*
Grade 1	201	197	3	1	1	1	3	9
Grade 2	204	197	2	1	0	1	2	10
Grade 3	231	224	3	3	3	1	6**	15***
Totals	727	703	9	6	4	3	13	42

*Includes two students who were eligible because s/he was in a treatment center and being served under the auspices of P.L. 89-750.

**Includes two students who were eligible to receive special education services but the parent refused to provide consent for those services.

*** Includes one student who was receiving special education services but who met the objectives of the Individual Education Plan (IEP) and services were terminated as a result.

Statistical analysis of the special education comparison

At the end of the year, of the 753 students receiving the services of the MRC, 17 or 2.3 percent were eligible for special education services which included four students who were eligible but not receiving services and 13 who were receiving services. In the matched sample of 753 students for that same time period, 45 or 6.0 percent of the students were eligible for special education services which included three who were eligible but not receiving services, one student who had been receiving services but whose service was terminated because the IEP goals were met and three who were eligible for services but were not receiving them.



Table 7. Students in K-3 as reported in a 2 x 2 contingency table: MRC participation (yes/no) by special education eligibility (yes/no).

Category	Minnesota Reading Corps Participant	Matched Sample Student
Not eligible for special education	636 (97.7%)	608 (94.0%)
Eligible for special education	17 (2.3%)	45 (6.0%)
Total	753 (100%)	753 (100%)

The Chi-square statistic was used to determine whether differences in special education eligibility at the end of the school year were statistically significant meaning that they were a greater than chance occurrence. A Fisher exact test of the association between binary categorical variables yielded a “p value” = .0004. This analysis can be interpreted that the probability of finding such differences in special education eligibility just by chance are approximately four in 10,000.

Study of the cost implications

The study concludes that at sites not being served by the MRC program, 43 students are being served in special education. At sites being served by the MRC, 17 students are being served in special education, were eligible to be served or the child was being served by the services were terminated because the IEP goals were attained. This is a difference of 26 students.

In order to determine the cost of serving students in special education in Minneapolis the cost of individual professionals was determined. The following are the actual average hourly salary costs of these professionals including fringe benefits. The costs do not include office space, cost of tests or instructional materials, etc. Dr. Christina Sheran, a school psychologist and early intervention specialist at Bethune Elementary School in Minneapolis worked with the professional staff at that school to make the time estimates provided for in Table 8.

Table 8 includes time and cost estimates only for evaluation and instruction for children determined to have academic disabilities. These students do not have other significant disabilities. The cost estimates do not include any costs for materials, supplies, technology, facilities, etc. Regarding the special education teacher, it is assumed this professional is providing instruction for 24 students in groups of four. Therefore, one-fourth of this person’s time is attributed to this study per student. Also, the evaluation costs are for the initial evaluation of the students. Special education law requires that re-evaluations be conducted every three years but the re-evaluations are considerably less costly than is the initial evaluation. Regardless, those costs are not included here.

Table 8. Costs of professional staff to provide special education evaluation and special instruction in Minneapolis For one student with academic needs/disabilities.



<i>Position Title</i>	<i>Cost per hour including fringe</i>	<i>Number of hours for evaluation</i>	<i>Cost for evaluation</i>	<i>Number of hrs of instruction/year</i>	<i>Cost of instruction/yr</i>
Classroom Teacher	\$61.30	3	\$ 183.90	9	\$ 551.70
Special Education Tchr	\$61.30	18	\$1,103.40	58	\$3,555.62
School Psychologist:	\$66.33	15	\$ 994.95	9	\$ 596.97
School Social Worker:	\$66.00	4	\$ 264.00	9	\$ 594.00
Elementary Principal:	\$79.96	1	\$ 79.96	1	\$ 79.96
Due Process Clerk	\$30.88	1.5	\$ 46.32	4.5	\$ 138.96
Other	\$61.30	1	\$ 61.30	4.5	\$ 275.85
Total		43.5	\$2,733.83	95	\$5,793.66

The cost estimates in Minneapolis were compared with national data. In 1999-2000, Jay G. Chambers, Jamie Shkolnik and Mania Perez did an analysis of special education costs for the National Center on Special Education Finance. The report published in 2003 was titled, "Total Expenditures for Students with Disabilities Variation by Disability." It concluded that the national average costs for serving children with learning disabilities was \$6,489 of which \$4,071 was special education costs and \$2,418 regular education support.

In 2006, Thomas B. Parrish, Director of the Center on Special Education Finance replicated the Chambers, Shkolnik and Perez study in a report titled, "National and State Overview of Special Education Funding." In this study, Parrish reports the total cost of providing special education instruction and services for children with a learning disability ranged from \$9,807 to \$11,309 with an average of \$10,558 when both regular education support and special education services were included. To make the Parrish study data comparable to the 2010 Minneapolis data, if 2 percent inflation was added for each of five years since the study was published, using \$10,558 as the base, the average cost would be \$11,428.

In the reports reviewed for this study, a complete description of what constituted a "special education cost" or a "regular education cost" was not included. To arrive at amounts in the these studies, it is likely that either the students had significantly greater needs than the students in this Minneapolis study or costs for services were included which are not included in this study. Therefore, the Minneapolis cost estimate of \$8,527.49 for both initial evaluation and instruction in 2010 is well within the national average and in fact is a low estimate. When removing the initial evaluation costs, the special education instruction only cost is \$5,397.66



As provided in Tables 6 and 7, there were 28 more students receiving special education services in non MRC schools than in schools that had MRC services. The cost of evaluating and serving these 28 students for one year is calculated as follows:

$$\begin{array}{r r r r r} (28 \text{ students} \times \$2,734) & + & (28 \times \$5,794) & = & \text{Cost of Evaluation and Instruction} \\ \$76,552 & + & \$162,232 & = & \$238,784 \end{array}$$

For children in need of special education services beyond one year, the cost of evaluation would not be included for each year. Therefore the \$76,552 cost can only be used one time.

Conclusions

1. As stated in the opening of this paper, we are comparing data where the single variable which is different between the two groups is the Minnesota Reading Corps services. However we have not done any kind of review as to whether other aspects at the school sites might account for these differences of students in need of instruction provided by special education.
2. Because this cost study was done in Minneapolis, it does not include an analysis of cost savings from other remedial programs such as Title I of the Elementary and Secondary Education Act frequently referred to as “No Child Left Behind (NCLB).” Minneapolis, as are most urban districts, is a “whole school Title I district” and is not required to identify specific children who are served with the revenue received through the auspices of NCLB. In districts where specific children receive remedial instruction provided using revenue from Title I or other categorical programs it is probable that cost savings from these programs would result if MRC served these sites. This would likely impact the special education costs as well.
3. One factor that may impact the lower Minneapolis cost data is that Bethune Elementary is a “Response to Intervention (RtI)” site. Not included in the time estimates in Table 8 are the costs associated with RtI Tier 1 intervention services which are provided students in need of assistance but prior to a referral being made for special education evaluation. These Tier 1 (and also Tier 2) services are most often provided by members of the Minnesota Reading Corps. Tier 1 and 2 data are of great value as part of the special education evaluation and this information would likely be gathered in a non-RtI school therefore contributing to the costs of evaluating students for special education eligibility.
4. Clearly the cost differences exemplified in this study are significant. The costs of special education are high and clearly include more than the special education teacher. While the costs are expressed in the time not needing to be spent by



professionals and are not “bottom line” cost savings. However, by freeing up the time of these professionals, it enables them to work with other students which is indeed significant. In fact, this is one of the tangible benefits to having the services of the MRC. The professionals at these sites are able to provide services to other children who are likely in the greatest need because the MRC is serving students so well. In many cases, the MRC is the primary “prevention” service.

5. The Minnesota Reading Corps is having a significant impact on education in Minnesota. A key reason for this impact is that from the very beginning, the Minnesota Reading Corps was specifically designed not to be an independent program with its own goals and objectives as is the case with many “projects.” Rather, it was designed to address the same objective which has been adopted by every site in the state which is to have children reading on target by the end of third grade. The MRC has created itself to be a resource to sites to accomplish that objective by providing full time competently trained AmeriCorps members to address the needs of specific children using sound instructional practices which have a scientific research base. Because the MRC follows the RtI model, it is able to clearly identify the students it can best serve and with progress monitoring and close collaboration with the classroom teacher(s) can bring children to proficiency rather than have them fall further behind and end up needing costly special education services as demonstrated in this study.

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