

## **Service-Learning May Influence Some Students' Attendance and Academic Performance**

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In 2010, the National Center for Learning and Civic Engagement (NCLCE) established the Schools of Success, a national network of 19 schools that use service-learning as an instructional strategy.<sup>1</sup> The schools were part of a three-year project to examine how the elements of service-learning might enhance key student outcomes, such as academic performance and civic engagement. In this brief, we report on the relationships observed between students' participation in service-learning and academic performance and school attendance.

### **Key Findings**

- In several instances, the attendance of students who participated in service-learning activities was statistically higher than their peers who did not participate in service-learning.
- Overall, the academic performance of students who participated in service-learning was not statistically better than their peers who did not participate in service-learning.
- Our findings show, however, that in some instances, service-learning may help improve students' reading performance. This is particularly the case when:
  - Service-learning is high-quality, as determined by students' evaluation of their service-learning experience
  - Students' reading performance is in the bottom quartile.

## Background

The NCLCE selected participating schools for the Schools of Success network based on their support of five elements critical to the successful, school-based integration of service-learning. Research suggests that student achievement and success through service-learning result from these elements:

- 1) Vision and leadership
- 2) Curriculum and assessment
- 3) Professional development
- 4) Community-school partnerships
- 5) Continuous improvement.<sup>2</sup>

Each school received funding over three years (\$5,000 per year), on- and off-site professional development opportunities and ongoing technical assistance to expand and deepen existing service-learning initiatives and build greater capacity for service-learning within their school and district. In return, the NCLCE asked schools to test and learn from leadership strategies that integrate and sustain quality service-learning for all students to succeed in school and their communities.

The Schools of Success network was funded by the State Farm Companies Foundation and the Corporation for National and Community Service/Learn and Serve America. Because both funders required their own evaluation, each year the NCLCE completed two separate evaluations of the participating schools in the program (see Exhibit 1). State Farm-funded schools included 10 schools that ranged from preschool to high school. These schools could implement service-learning in any subject area. Learn and Serve-funded schools included nine middle schools, all of which were designated as Title I schools (high poverty) during this program. In addition, service-learning projects in the Learn and Serve-funded schools required a STEM (Science, Technology, Engineering and Mathematics) focus.

**Exhibit 1: Schools of Success Network Participating Schools, by Funder**

State Farm Funded (service-learning in any subject area)			Learn and Serve Funded (STEM-focused service-learning)		
duPont Manual High School	Louisville, KY	9-12 Magnet High School	Christian County Middle School	Hopkinsville, KY	6-8 Middle School
Grant's Lick Elementary School	Alexandria, KY	K-5 Elementary School	Detroit Edison Public School Academy	Detroit, MI	P-10 Public Charter School (only grades 6-8 participated)
Greendale Middle School	Greendale, WI	6-8 Middle School	Hopkinsville Middle School	Hopkinsville, KY	6-8 Middle School
Liberty High School	Louisville, KY	9-12 Alternative High School	MS 442	Brooklyn, NY	6-8 Middle School
Malcolm Shabazz City High School	Madison, WI	9-12 Alternative High School	New Foundations Charter School	Philadelphia, PA	P-10 Public Charter School (only grades 6-8 participated)
Montpelier High School	Montpelier, VT	9-12 High School	North Drive Middle School	Hopkinsville, KY	6-8 Middle School
Park Forest Elementary School	State College, PA	K-5 Elementary School	School for Global Leaders	New York, NY	6-8 Middle School
Patriot Academy	Madison, AL	9-12 Alternative High School	Sutter Middle School	Fowler, CA	6-8 Middle School
Raymond School District	Franksville, WI	K-8 School	Tupelo Middle School	Tupelo, MS	6-8 Middle School
Waterford High School	Waterford, CT	9-12 High School			

## Research Methods

The NCLCE contracted with RMC Research Denver<sup>3</sup> to examine the Schools of Success program’s effects on schools, community conditions and students’ academic and civic engagement. While the evaluation was wide ranging, this issue brief presents a subset of attendance and academic performance data, as well as data gathered through surveys completed by students who took part in service-learning activities and comparison students. The results reported below are based on data collected for the 2009-10, 2010-11 and 2011-12 school years.

Initial analysis of data began with conversion of reading and mathematics achievement data within schools and within grade levels to z-scores.<sup>4</sup> The evaluation team tested whether students who participated in service-learning showed higher attendance levels and more growth in reading and mathematics than comparison students through the use of independent groups *t*-tests.<sup>5</sup> The evaluation team then conducted additional analyses to examine other relationships between student survey outcome data (academic engagement, school attachment and 21st Century skills) and achievement data.

## Attendance

Overall, with a few exceptions, students who participated in service-learning did not have higher attendance levels than comparison students who did not participate in service-learning. We show two such instances in Exhibit 2. In both instances, although the attendance rates of students who participated in service-learning were only slightly higher than comparison students, this difference was statistically significant.

**Exhibit 2: Average Attendance by Group, 2010-11 Learn and Serve Grades 6-8 and 2011-12 State Farm Grades 6-12.**

Grade Level Year, Funder	Service-Learning		Comparison		Significance
	N	Mean Attendance	N	Mean Attendance	
<b>Grades 6-8 2010-11, Learn &amp; Serve</b>	292	.96	44	.93	.001***
<b>Grades 6-12 2011-12, State Farm</b>	135	.96	25	.90	.001***

\*\*\*  $p \leq .001$

As was the case for other analyses of Schools of Success data, RMC used student ratings of service-learning quality to separate the participating students into a group that participated in “higher-quality” service-learning and a group that participated in “lower-quality” service-learning.<sup>6</sup> As shown in Exhibit 3, in two instances students who participated in higher-quality service-learning had attendance rates that were higher than their peers who participated in lower-quality service-learning. While one of these instances only approached statistical significance at the  $p \leq .05$  level, the other was at a high level of statistical significance.

**Exhibit 3: Average Attendance by Higher-Quality and Lower-Quality Groups, 2010-11 State Farm Grades 3-5 and 2011-12 State Farm Grades 6-12.**

Grade Level Year, Funder	Higher-Quality		Lower Quality		Significance
	N	Mean Attendance	N	Mean Attendance	
Grades 3-5 2010-11, State Farm	111	.972	149	.965	.060
Grades 6-12 2011-12, State Farm	135	.96	25	.90	.001***

\*\*\*  $p \leq .001$

As a final step in their data analysis, evaluators from RMC Research compared the attendance rates of participating students from Learn and Serve-funded schools across time. In this instance, evaluators compared students' attendance rates from 2010-11, prior to their participation in service-learning, with their attendance rates from 2011-12, the year in which they participated in service-learning. Though students' attendance rates increased only slightly from 2010-11 to 2011-12, this increase met the threshold for a high level of statistical significance.

**Exhibit 4: Average Attendance Over Time, 2010-11 and 2011-12, Learn and Serve Grades 6-8.**

Grade Level Funder	2010-2011		2011-2012		Significance
	N	Mean Attendance	N	Mean Attendance	
Grades 6-8 Learn & Serve	429	.95	429	.96	.007**

\*\*  $p \leq .01$

## Academic Performance

Overall, students who participated in service-learning did not exhibit higher levels of academic performance than comparison students. Analysis showed three instances, however, that suggest high-quality service-learning may have a positive relationship with students' academic performance, particularly in reading. First, as shown in Exhibit 5, during the 2010-11 school year, students in Learn and Serve-funded schools who participated in higher-quality service-learning had levels of reading proficiency that were higher than reading proficiency scores for students that participated in lower-quality service-learning at statistically significant levels.

**Exhibit 5: Average Reading Proficiency by Higher-Quality and Lower-Quality Groups, 2010-11 Learn and Serve Grades 6-8.**

Grade Level Year, Funder	Higher-Quality Service-Learning		Lower-Quality Service-Learning		Significance
	N	Mean Reading Proficiency	N	Mean Reading Proficiency	
Grades 6-8 2010-11, Learn & Serve	66	3.53	36	3.25	.042*

\* $p \leq .05$

Second, students in Learn and Serve-funded schools showed higher levels of reading achievement in 2011-12, when they were participating in service-learning, than in 2010-11, prior to their involvement in service-learning. As shown in Exhibit 5, this difference was at a high level of statistical significance.

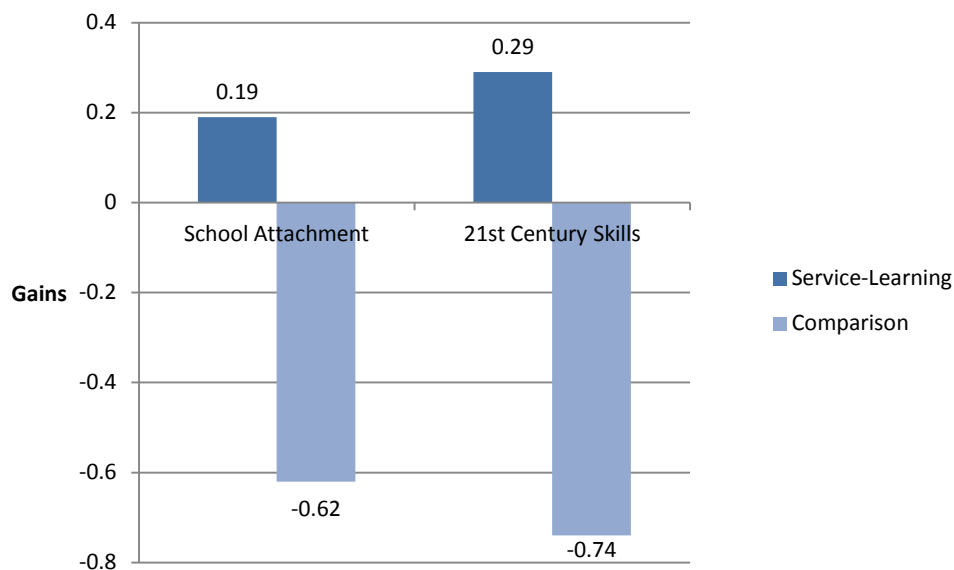
**Exhibit 6: Average Reading Proficiency Over Time, 2010-11 and 2011-12, Learn and Serve Grades 6-8.**

Grade Level Funder	2010-11		2011-12		Significance
	N	Mean Reading Proficiency	N	Mean Reading Proficiency	
Grades 6-8 Learn & Serve	429	2.52	472	2.73	.005**

\*\*  $p \leq .01$

Finally, data from State Farm-funded schools in 2009-10 suggests that service-learning may help to improve levels of school attachment and 21st century skills acquisition for students who are at the lower end of the academic performance spectrum. When the research team grouped students into four equal quartiles, the largest consistent and significant difference between service-learning and comparison groups were found for those students with the lowest reading scores. As shown in Exhibit 6, students in service-learning who had the lowest reading scores showed gains in their ratings of school attachment and acquisition of 21st century skills, while students in the comparison group showed decreases in these same areas.

**Exhibit 7: Gains in Outcome Measures for Students with the Lowest Scores in Reading, 2009-10, State Farm Grades 3-5.**



## Conclusions and Next Steps

The evaluation findings presented in this analysis do not show that service-learning has a clear, positive and statistically significant relationship with students' school attendance and academic performance. This (non) finding may be for two reasons.

First, we saw much variation in the quality of service-learning implementation across sites. Service-learning is a complex pedagogical approach that helps to guide instruction, not a standardized, one-size-fits-all, scripted instructional method. Teacher judgment and expertise, as well as local resources, constraints and conditions all play a role in how well teachers are able to align their implementation of service-learning with quality standards. Because many of the teachers in participating schools were relatively new to service-learning, the service-learning these teachers implemented was of mixed quality. Rather than being indicative of the failures of service-learning to impact student outcomes, this finding likely points to the steep learning curve for teachers that accompanies any complex pedagogy, including service-learning.

Second, a ceiling effect likely limited any observable change in attendance rates. Average attendance rates for all groups and years were 90 percent, at a minimum, and most hovered around 95 percent. Because the schools in the program already had high attendance rates, the amount of improvement possible was rather limited. The fact that we found any statistically significant findings for attendance rates suggest that service-learning may have a positive impact on students' school attendance.

The findings of this evaluation do suggest, however, that a positive relationship between service-learning and school attendance and academic performance might exist (1) when service-learning meets standards for high-quality practice and (2) for the lowest-achieving students. When RMC divided site-level implementation of service-learning into "higher quality" and "lower quality," those students who indicated that they participated in higher-quality service-learning showed higher levels of attendance and reading achievement at higher levels of statistical significance on most key outcomes than did students who participated in lower-quality service-learning.

Because RMC used the National Youth Leadership Council's *K-12 Service-Learning Standards for Quality Practice*<sup>7</sup> as the basis for its construction of student survey items related to assessment of quality, these results suggest that teachers, administrators and policymakers need to pay close attention to the quality standards when creating and implementing service-learning programs. These standards appear to offer critical guidance in the "how to" of service-learning, particularly when student outcomes are a key concern. With regard to the lowest-achieving students, the findings here suggest some positive impact for service-learning, though further research is necessary to confirm and fully capture the nature and breadth of this impact.

The benefits from service-learning may appear to be minor given the small increases service-learning students gained on the outcome measures considered in this brief. In interpreting these apparently small increases, consideration of the length of the evaluation period (one academic year, or approximately nine months) and how increases may accumulate over time is necessary. For example, a student who participates in several consecutive school years of service-learning may very well accumulate these increases over time (e.g., a .12 gain for a single year may be a much larger gain over four years). As a next step in this line of research, longitudinal studies will be necessary to confirm whether or not this is the case. In addition, analysis of aggregated data from across similar service-learning programs is necessary to further solidify the findings of NCLCE's own evaluations.

## Acknowledgements

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State Farm  
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## Endnotes

<sup>1</sup> The Schools of Success network was part of a larger evaluation study conducted by RMC Research Denver that used a set of common measures across a cluster of Learn and Serve states (Arizona, Hawaii, Louisiana, Michigan, Minnesota, Missouri, Ohio and Wisconsin) and national programs (e.g., Youth Service America's STEMester of Service).

<sup>2</sup> Terry Pickeral, Tiffani Lennon and Jennifer Piscatelli, [Service-Learning Policies and Practices: A Research-Based Advocacy Paper](#), 2008 (Denver: Education Commission of the States).

<sup>3</sup> RMC also conducted evaluations of other states and national programs in our Learn and Serve cluster.

<sup>4</sup> The z-score transformation standardizes variables to the same scale, producing new variables with a mean of 0 and a standard deviation of 1.

<sup>5</sup> A t test is a statistical procedure that is commonly used to examine differences in mean values over time or across two groups.

<sup>6</sup> A median split was conducted on the student-rated service-learning program quality subscale. Two categories were created from the split (higher-quality and lower-quality programs).

<sup>7</sup> [K-12 Service-Learning Standards for Quality Practice](#), 2008 (Saint Paul: National Youth Leadership Council).

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