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Shortchanging New Jersey Students:

How Inadequate Funding Has Led to Reduced Staff and Growing Disparities in the State's Public Schools

Education Law Center
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Summary

New Jersey's school funding formula, the School Funding Reform Act (SFRA), has been consistently underfunded since 2010, and has resulted in school districts moving further away from "adequacy," or the level of funding that is required to deliver State academic standards to all students. This report analyzes the impact of underfunding on school level personnel using staffing data from the New Jersey Department of Education (NJDOE).

The report's key findings are outlined below:

- The most deeply "inadequate" districts are those that serve the state's least affluent students. Under the SFRA, most of these districts were positioned to receive an influx of state aid, but failed implementation of the funding formula means many are far below the resource levels required to deliver State academic standards.
- Between 2009 and 2012, school districts across the state saw workforce reductions that resulted in lower staff to student ratios, likely producing larger class sizes, greater workloads for teachers, and a reduction in course offerings for students.
- The most inadequately funded districts experienced the highest levels of workforce reduction. Schools in these districts operate with budgets far below the levels the SFRA defines as necessary to deliver State academic standards to all students. As of 2012, the overall student-to-staff ratio was nearly 20 percent higher in deeply inadequate districts than in adequately funded districts. As a result, the student load for many teachers and support staff in deeply inadequately funded districts is significantly higher, for example:
 - each counselor is responsible for 55 percent more students;
 - each nurse is responsible for 21 percent more students;
 - there are 18 percent fewer STEM (Science Technology, Engineering and Math) teachers available to instruct students;
 - there are 47 percent fewer world language teachers;
 - there are 21 percent fewer health/physical education teachers;
 - there are 34 percent fewer art teachers; and
 - there are 44 percent fewer music teachers.

- The gap in resources between adequately and inadequately funded districts has grown. The goal of the SFRA was to reverse this disparity, but consistent underfunding of the formula has exacerbated it. The most inadequately funded districts, which are more likely to serve low-income students, have staffing levels far below their adequately funded peers, and the staffing gap was larger in 2012 than it was in 2009.

Background

New Jersey's Retreat from Funding Adequacy: 2009-2013

In 2008, the New Jersey Legislature enacted a statewide, weighted, school funding formula: the School Funding Reform Act (SFRA).¹ The formula is driven by determinations of the cost of resources for all students to achieve the state's academic standards, with the understanding that some students, including those who are economically disadvantaged or who are learning English, are costlier to educate. A central premise of the SFRA is that schools that serve larger populations of these students require a greater level of resources in order to achieve State standards. The formula delivers extra funding to school districts based on the number of students living in economic disadvantage, limited-English proficient (LEP) students, and students with disabilities enrolled in the district. If properly implemented, the SFRA would serve as a unitary system of school funding that is equitable and predictable.

The formula establishes an "adequacy budget" for each school district that reflects the size, grade configuration, and demographic characteristics of the student population based on weighted enrollment. The adequacy budget is the cost of delivering academic standards to all district students based on the formula's parameters. The adequacy budget is funded through a combination of local revenue and state aid, based on calculations of a municipality's ability to pay.

Unfortunately, the SFRA has been consistently underfunded. In 2010, the New Jersey Legislature adopted a budget for FY11 that cut over \$1.1 billion, or almost 15%, in state aid from the SFRA formula. Subsequent budgets have failed to properly implement the school funding formula, providing minimal and unpredictable state aid increases that do not comply with the law. The Education Law Center (ELC) estimates that New Jersey's schools suffered an accumulated funding deficit of almost \$4.5 billion from 2010 through 2013.²

Due to consistent underfunding of the formula since 2010, many of New Jersey's school districts have funding levels that are further below adequacy than in 2008, when the formula became law. This is the opposite trajectory of what the SFRA promised. School districts are also facing rising costs, and many are experiencing enrollment growth. These factors have left many district budgets well below what is needed to deliver State academic standards.

¹ <http://www.edlawcenter.org/issues/school-funding.html>

² <http://www.edlawcenter.org/news/archives/other-issues/governor-christie-wants-longer-school-day-and-year-amid-massive-underfunding-of-nj-public-schools.html>

The Effect of Funding Inadequacy on Staff and Curriculum

Until now, it has been difficult to determine what effect chronic underfunding has had on New Jersey's students and their schools. Districts that should have benefitted the most from the SFRA are found in all parts of the state,³ making comparisons difficult. And while underfunded districts tend to have larger concentrations of poverty, their student populations do not fit a uniform profile – schools serving larger and smaller populations of at-risk students have all been affected.

To determine some of the effects of inadequate funding since 2010, the analysis presented here uses school staffing files requested by ELC from the New Jersey Department of Education (NJDOE). The files show the deployment of certificated staff – teachers, administrators, and support service providers – at the district level and compare how the numbers and types of human resources have varied across districts as funding has changed.

Staffing files include specific job codes, which allow for a more precise description of the curricular impacts of the years of underfunding of the SFRA. By comparing the changes in student populations, staff assignments, and school district funding, we are able to gain a view of how different districts have changed over the past several years.

³ <http://www.edlawcenter.org/news/archives/school-funding/top-25-most-underfunded-nj-school-districts.html>

Findings

District Funding: Adequate, Inadequate, and Deeply Inadequate

In this report, New Jersey school districts are classified by “adequacy” using three levels:

- **Adequate:** These districts are funded at or above their adequacy target levels as determined by the SFRA formula and other types of aid (see the Appendix for a complete discussion).
- **Inadequate:** These districts are funded below their target levels by no more than 20 percent.
- **Deeply Inadequate:** These districts are underfunded by more than 20 percent of their adequacy target. A list of these 32 districts is found in the Appendix.

Table 1 shows the spread of these three levels of adequacy across District Factor Groups. DFGs denote a district’s relative socio-economic status (SES): DFG-A districts are classified as low-SES, while DFG-J districts are considered to be at the highest SES levels.

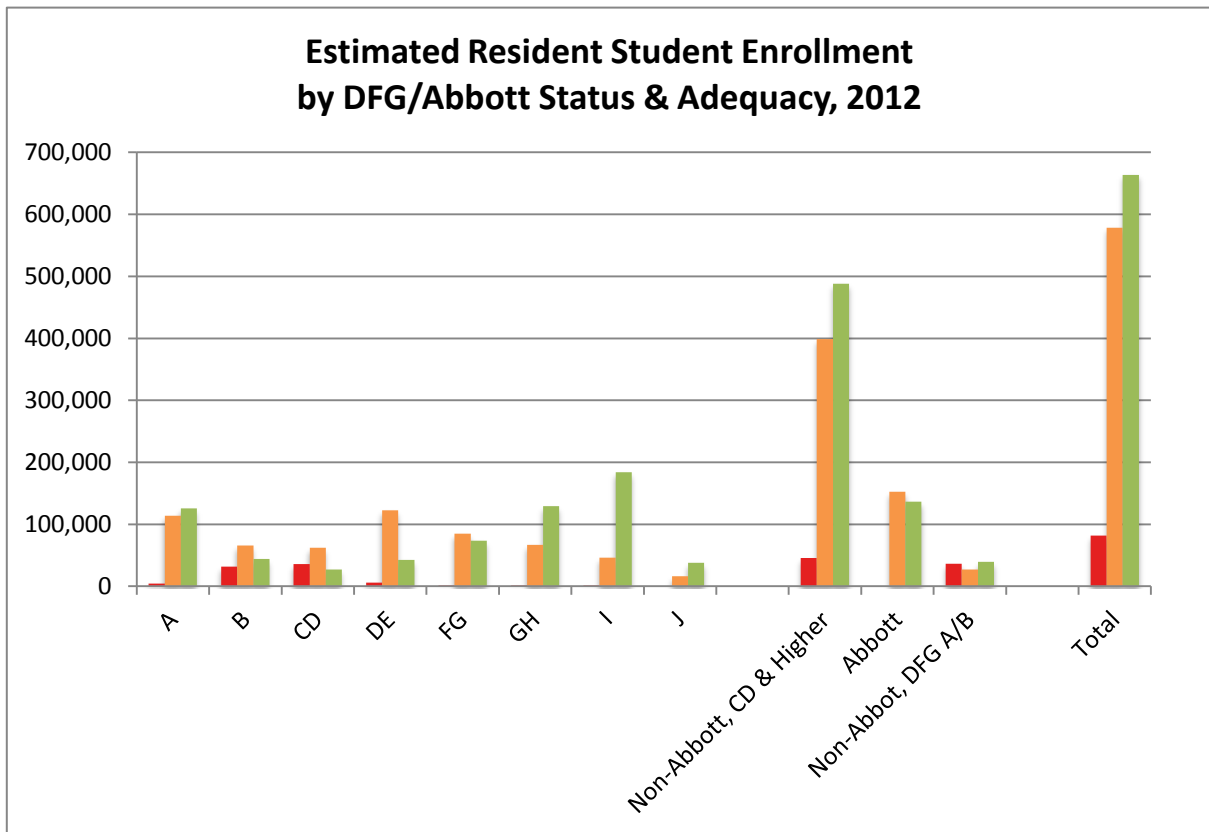
Table 1 – Adequacy Levels of Districts and DFGs, 2013

DFG	Deeply Inadequate	Inadequate	Adequate	Total
A	3	16	20	39
B	14	21	32	67
CD	11	28	28	67
DE	1	43	39	83
FG	1	33	53	87
GH	1	16	59	76
I	1	17	85	103
J	0	5	20	25
Total	32	179	336	547

In general, deeply inadequate school districts tend to be in the least affluent DFGs. The most affluent DFGs have proportionately fewer inadequately funded districts; however, there are inadequately funded districts at all SES levels.

Given the unequal sizes of these districts, it is difficult to get a sense of how many students are affected by different levels of inadequacy. Figure 1 shows the resident student enrollment for each level of adequacy, disaggregated by DFG and by Abbott status.

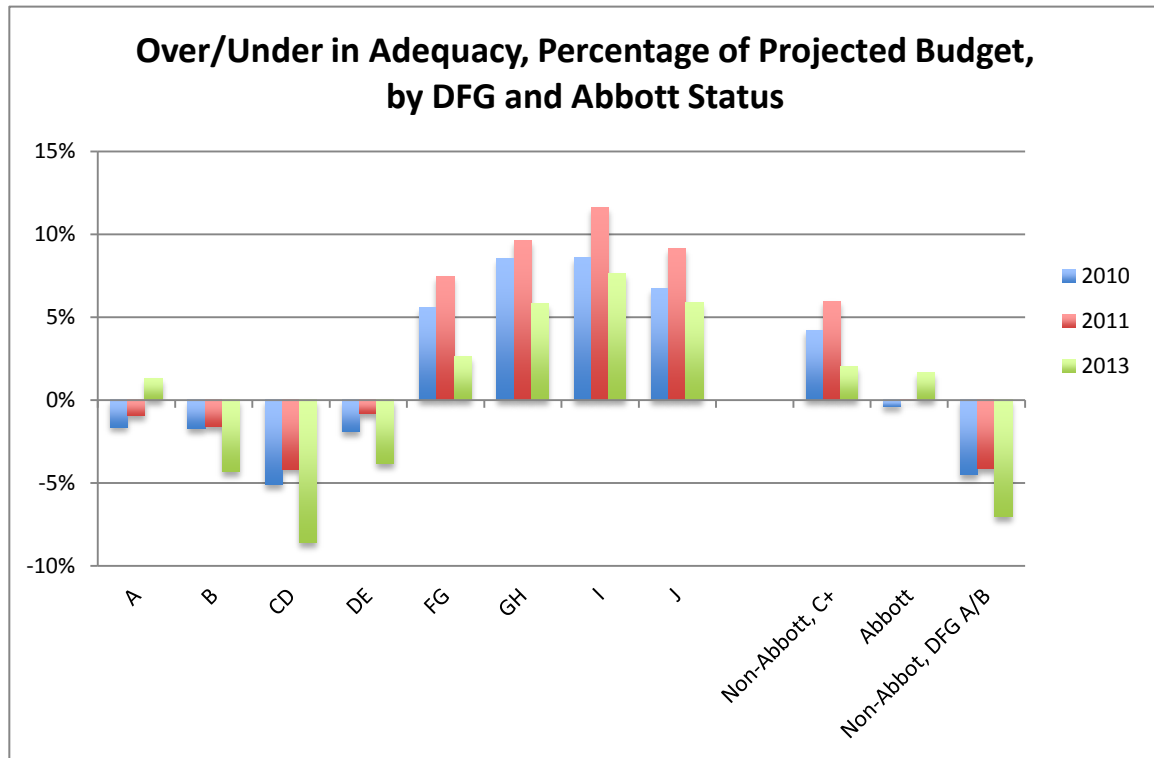
Figure 1



Statewide, nearly half of all students are in inadequately funded districts. While these districts are found in all DFGs, the largest numbers of students in deeply inadequately funded districts are in some of the lowest-SES districts: DFG-Bs and -CDs. Many students in inadequately funded districts are in the “middle of the pack” in DFGs from DE to GH, which denote neither the highest nor the lowest levels of SES.

Trends from 2010 through 2013 are shown in Figure 2. While all districts have seen decreases in spending relative to their adequacy targets, DFG-B, -CD, and -DE districts have fallen further below adequacy.

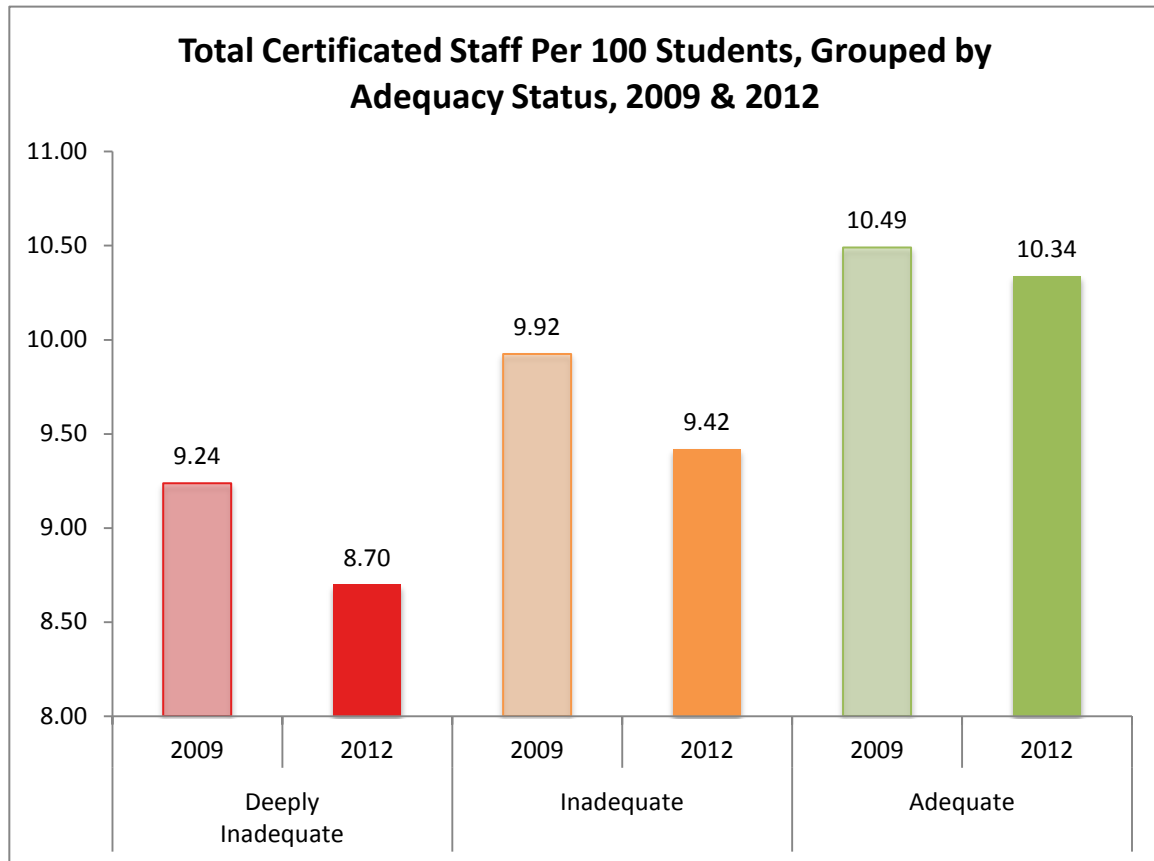
Figure 2



How Adequacy Affects Student-Staff Ratios

As districts move to deeper levels of inadequacy, one of the changes we might expect to see is a shift to fewer staff members per student. As Figure 3 shows, all districts have seen a loss in the number of certificated staff available to educate students, though inadequately funded districts have the fewest number of staff members per pupil. Additionally, between 2009 and 2012, the gap between adequately and inadequately funded districts has *increased*.

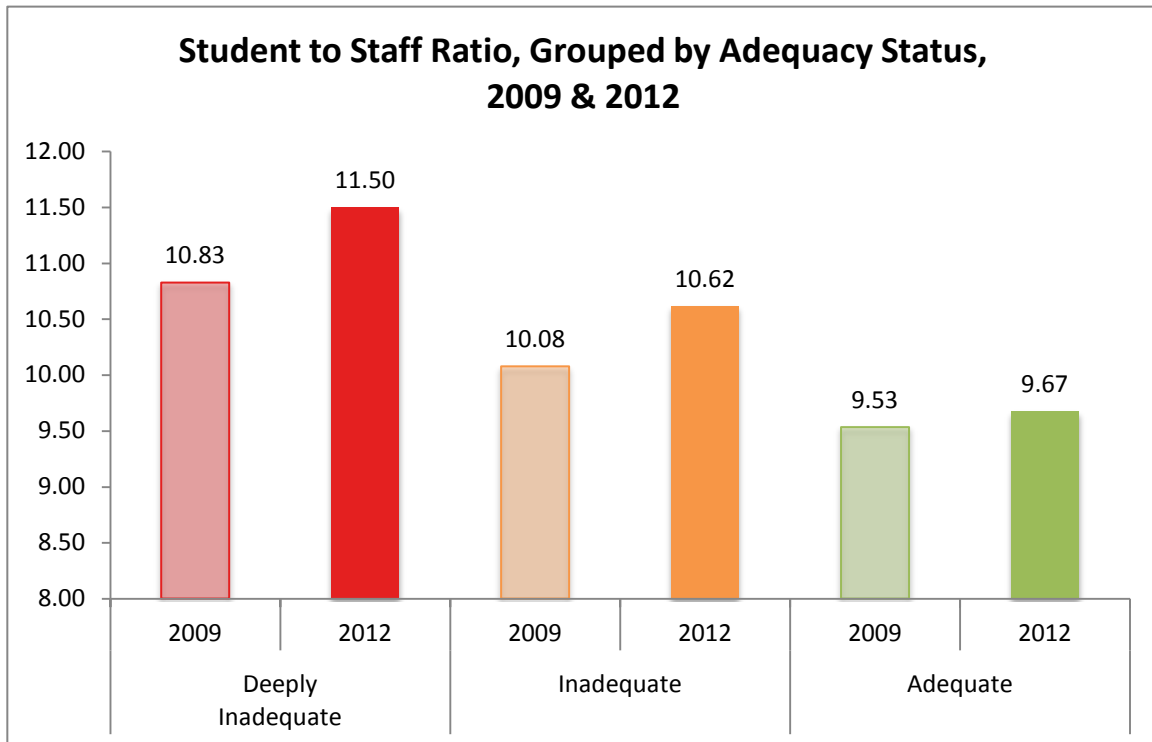
Figure 3



As Figure 3 shows, districts at all three levels of adequacy lost, on average, staff per 100 students. But the gap in student-staff ratios between these adequacy levels has grown. In 2009, for example, adequately funded districts had 1.25 more certificated staff members per 100 students than deeply inadequate districts; that gap grew to 1.64 by 2012.

Another way to view this disparity is to look at the number of students per staff member at all three adequacy levels. Figure 4 illustrates both the rise in student loads for teachers in all New Jersey schools, and the growing disparity in this measure of staff resources between adequately and inadequately funded districts. As of 2012, the student-to-staff ratio was nearly twenty percent higher in deeply inadequate districts.

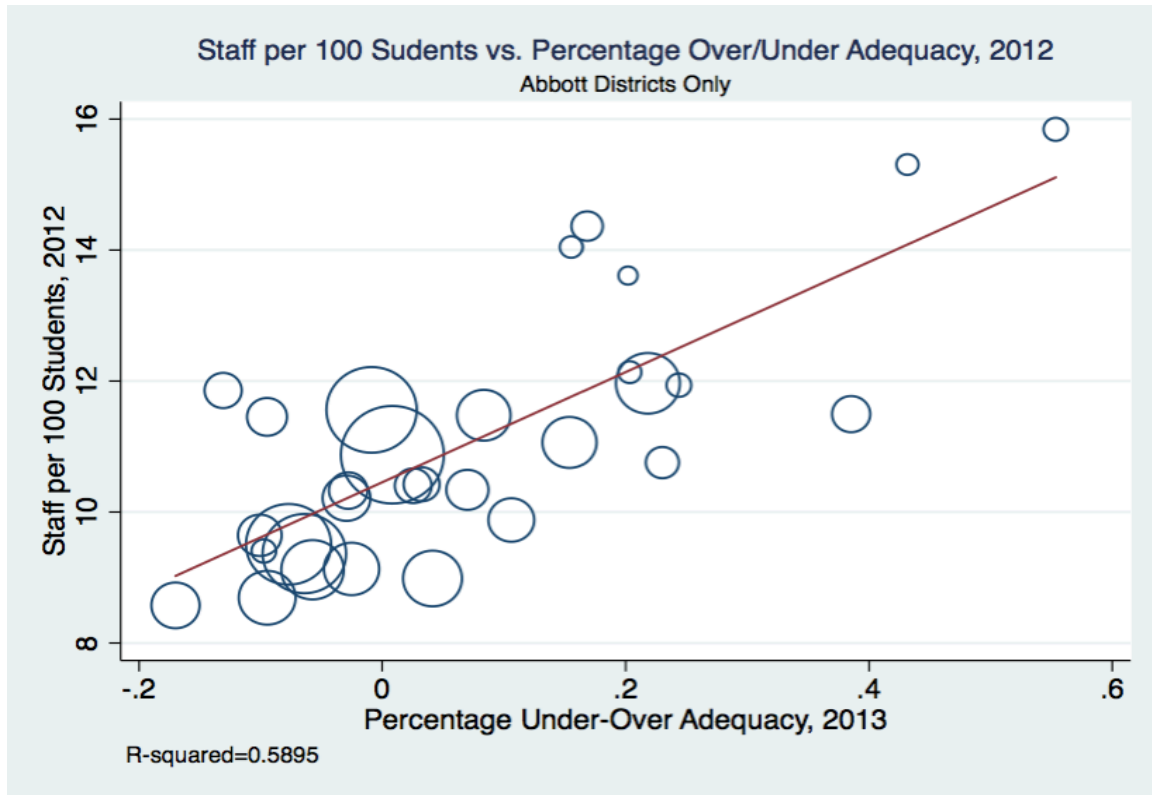
Figure 4



The amount a district is funded above or below its adequacy target is a significant predictor of its staff-to-student ratio: inadequately funded districts will, on average, have fewer staff members per student than adequately funded districts within the same DFG.

Figure 5 shows this relationship within the 31 formerly designated “Abbott” districts. As the level of funding for a district rises relative to its SFRA target, the number of certificated staff members rises as well. Statistically, within the “Abbott” districts, nearly 60 percent of the variation in staff per 100 students can be explained by funding adequacy. The range is so great that the districts that have the highest funding over adequacy nearly double the number of staff per 100 students compared to the least adequately funded districts.

Figure 5



Why does this matter? As a recent research brief from the National Education Policy Center notes:

- *Class size is an important determinant of student outcomes and one that can be directly influenced by policy. All else being equal, increasing class size will harm student outcomes.*
- *The evidence suggests that increasing class size will harm not only children's test scores in the short run but also their long-term human capital formation. Money saved today by increasing class sizes will be offset by more substantial social and educational costs in the future.*
- *The payoff from class-size reduction is larger for low-income and minority children, while any increases in class size will likely be most harmful to these populations.⁴*

Growing inadequacy has led to decreasing staff-to-student ratios; those ratios, in turn, almost certainly lead to larger class sizes. Further, depending on how staff are deployed in schools, decreases in funding adequacy can lead to detrimental changes in the number and quality of educational offerings for students.

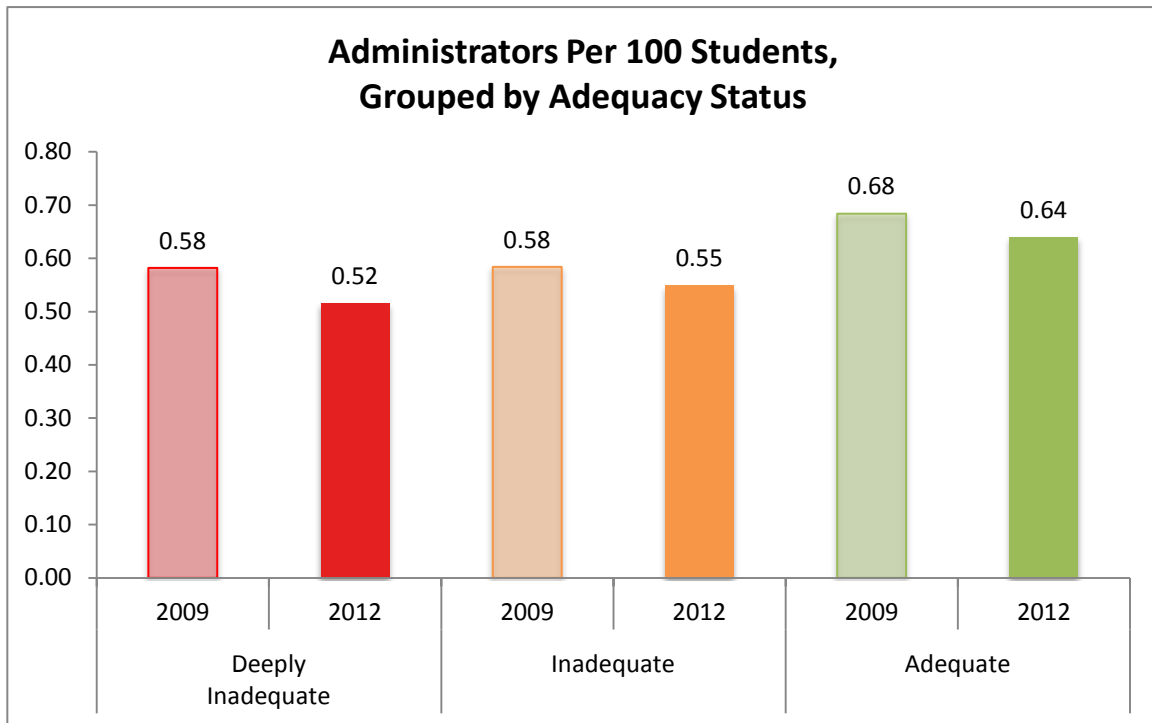
⁴ Schanzenbach, D. W. (2014). "Does Class Size Matter?" National Education Policy Center, Boulder, CO. <http://www.classsizematters.org/wp-content/uploads/2014/02/207632499-Pb-Class-Size.pdf>

Changes in Adequacy, Staff Assignments, and Curriculum/Student Services

School districts can respond to the reality of increasing inadequacy by altering staff assignments in a variety of ways: they may choose to cut teaching personnel, administrators, or some combination of the two. They may also choose to keep certificated staff in one job area but eliminate staff in another.

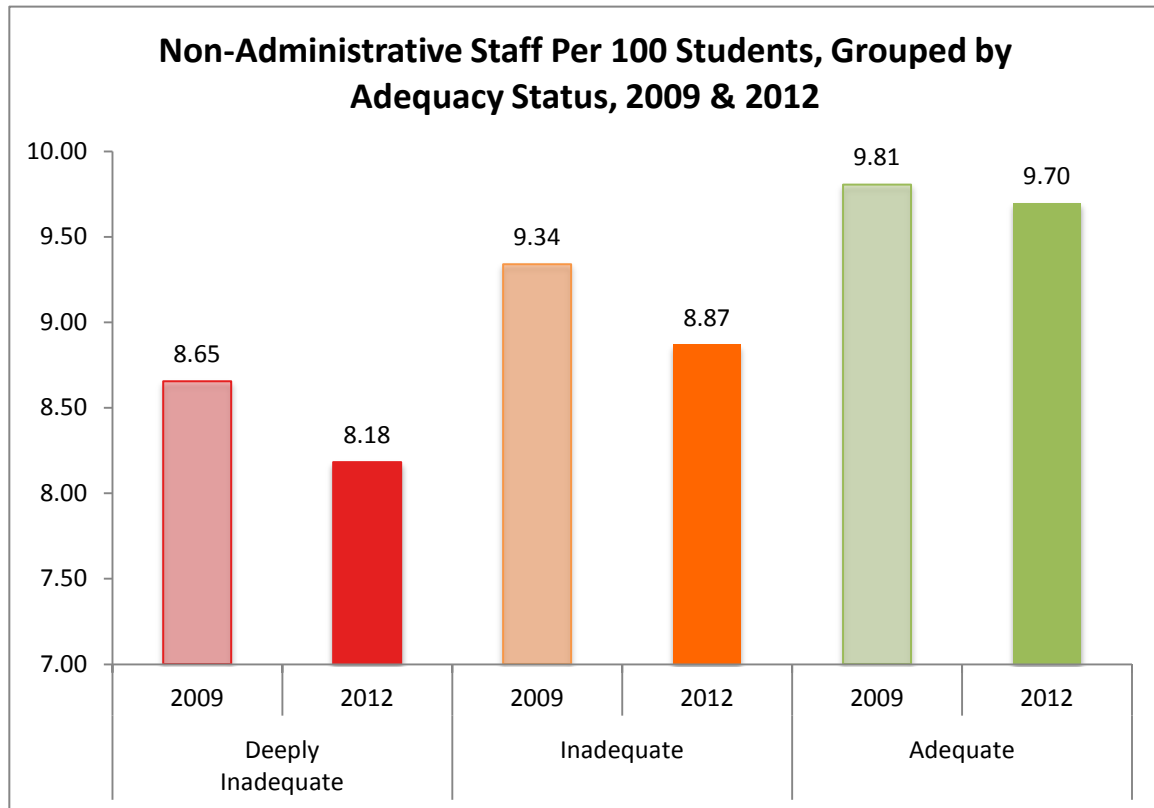
A look at how staff-per-student measures have changed in specific job areas is instructive when attempting to determine the effects of the recent slide away from adequacy. Figure 6, for example, shows the changes in administrative staff per 100 students in districts with different adequacy levels from 2009 to 2012.

Figure 6



All districts lost administrators relative to student population, and adequately funded districts still retain an advantage. But the gap between deeply inadequately funded districts and adequately funded ones grew by a relatively small amount when compared to the gap in non-administrative personnel. Figure 7 shows the changes in these staff members from 2009 to 2012.

Figure 7

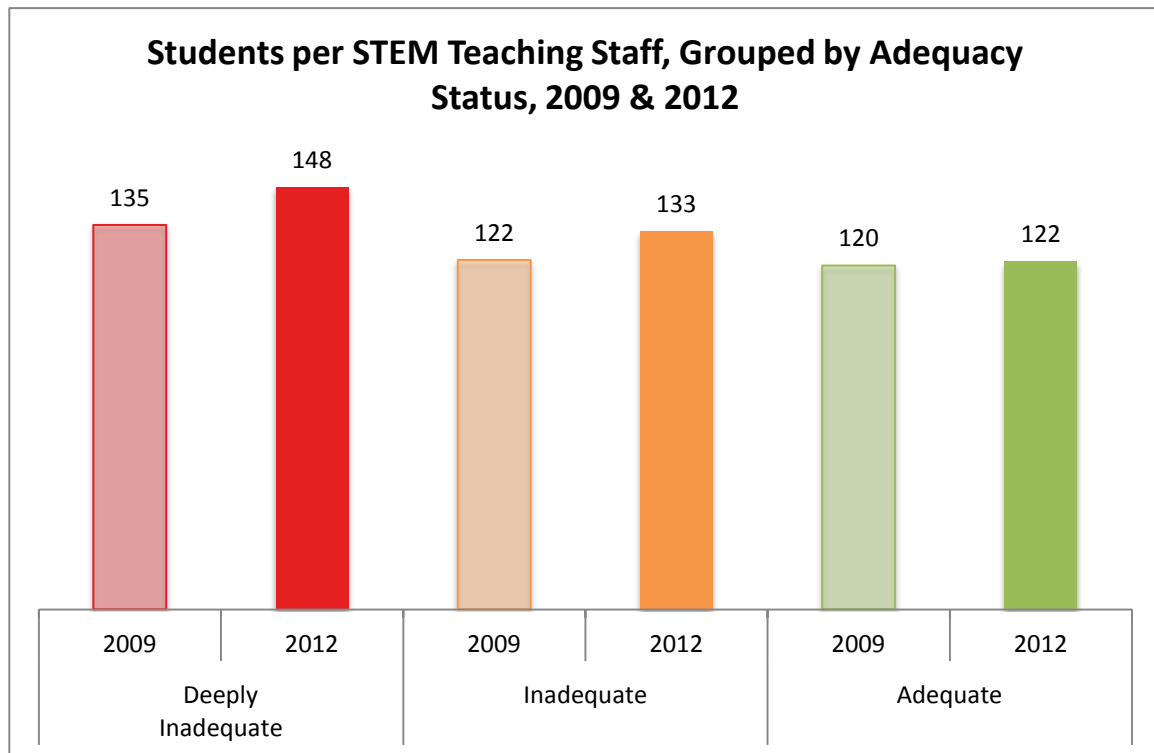


Districts at all funding levels lost non-administrative staff on average. Adequately funded districts, however, enjoyed a 1.16 staff member per 100 students advantage over deeply inadequate districts in 2009. That advantage grew to 1.52 staff per 100 students by 2012, an increase of over 30 percent. At an average size school of 550 students, that translates to an advantage of more than 8 staff members in a school building. These educators are the teachers and support staff who work daily with New Jersey's students; their decreased numbers, in both adequately and inadequately funded districts, have a real impact on students.

Another way to understand the impact of staff loss in New Jersey's schools – and to understand how that impact has been felt especially strongly in inadequately funded districts – is to look at specific job categories. Because NJDOE staff data files break down school jobs into specific functions, it is possible to look at how changes in funding and differences in adequacy affect specific areas of the curriculum.

Figure 8, for example, shows how the number of students per STEM teacher varies across districts at differing adequacy levels.

Figure 8

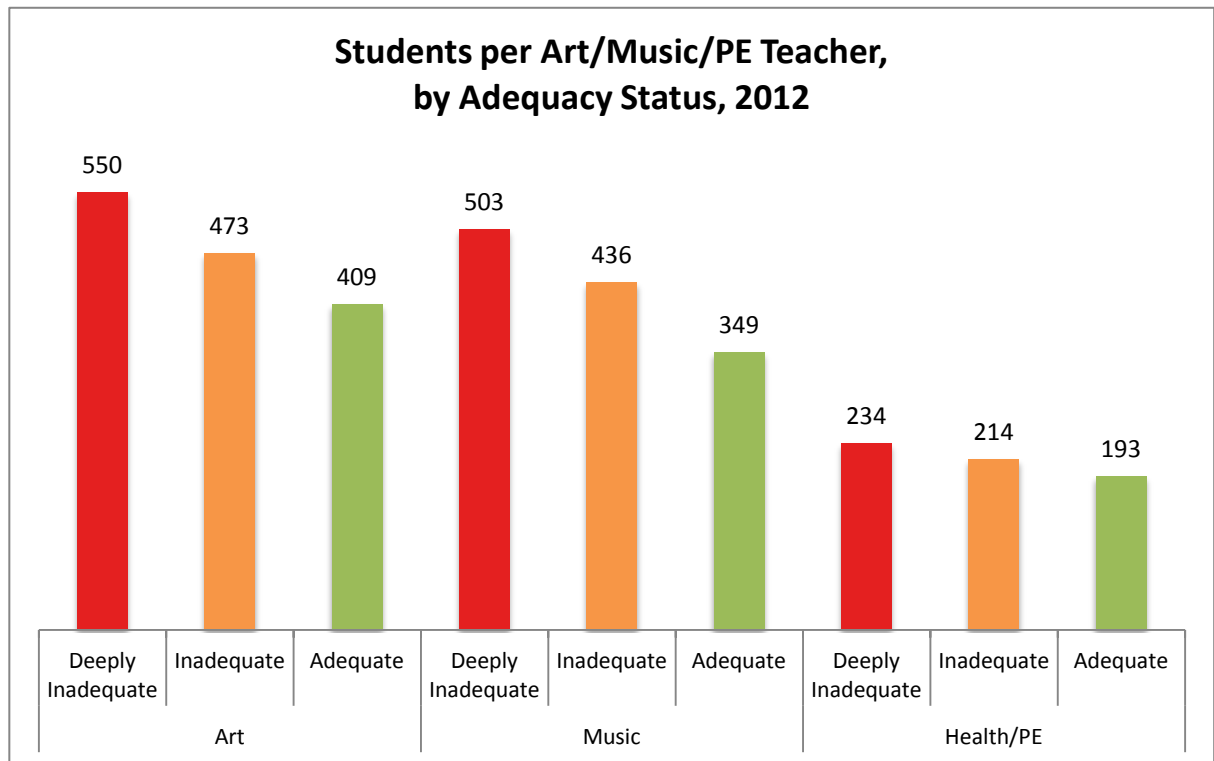


This measure is for comparative purposes only: because STEM teachers are generally not assigned to elementary schools (which are included in the total district enrollment figure), and because class sizes vary across the different disciplines within STEM, the actual number of students a STEM teacher has on his or her rolls is likely quite different. Nonetheless, the comparison is instructive -- not only did STEM teachers at deeply inadequately funded schools have a greater student load in 2009, the gap with STEM teachers in adequately funded schools increased significantly by 2012.

It is likely that, faced with difficult choices, school districts have opted to retain more teachers in “core” academic areas and sacrifice lower student-teacher ratios in other content areas. But this decision runs the risk of decimating the programs and curricula that have made New Jersey’s public schools some of the best in the nation. Schools without adequate health and physical education (PE), without ample opportunities for studying subjects such as foreign languages and the arts, and without ample staff to serve students’ social, emotional and health needs cannot compete on a global stage with schools that are adequately resourced.

Figure 9 shows differences in the numbers of students for each art, music and PE/health teacher in districts with varying funding levels.

Figure 9



In deeply inadequately funded school districts, art, music, and PE/health teachers are responsible for educating substantially more students than their colleagues in adequately funded districts. In a deeply inadequately funded district, the student load for health/PE teachers is 21 percent greater than for those teachers in adequately funded schools. That load is 34 percent greater for art teachers, and 44 percent greater for music teachers.

Undoubtedly, this negatively affects both the quality and number of offerings in arts education in the least adequately funded districts. Research from both the National Endowment for the Arts⁵ and the U.S. Department of Education⁶ confirms that, despite the long-term positive effects of arts education, at-risk youth are far less likely to receive higher-quality experiences in the arts at their schools. The

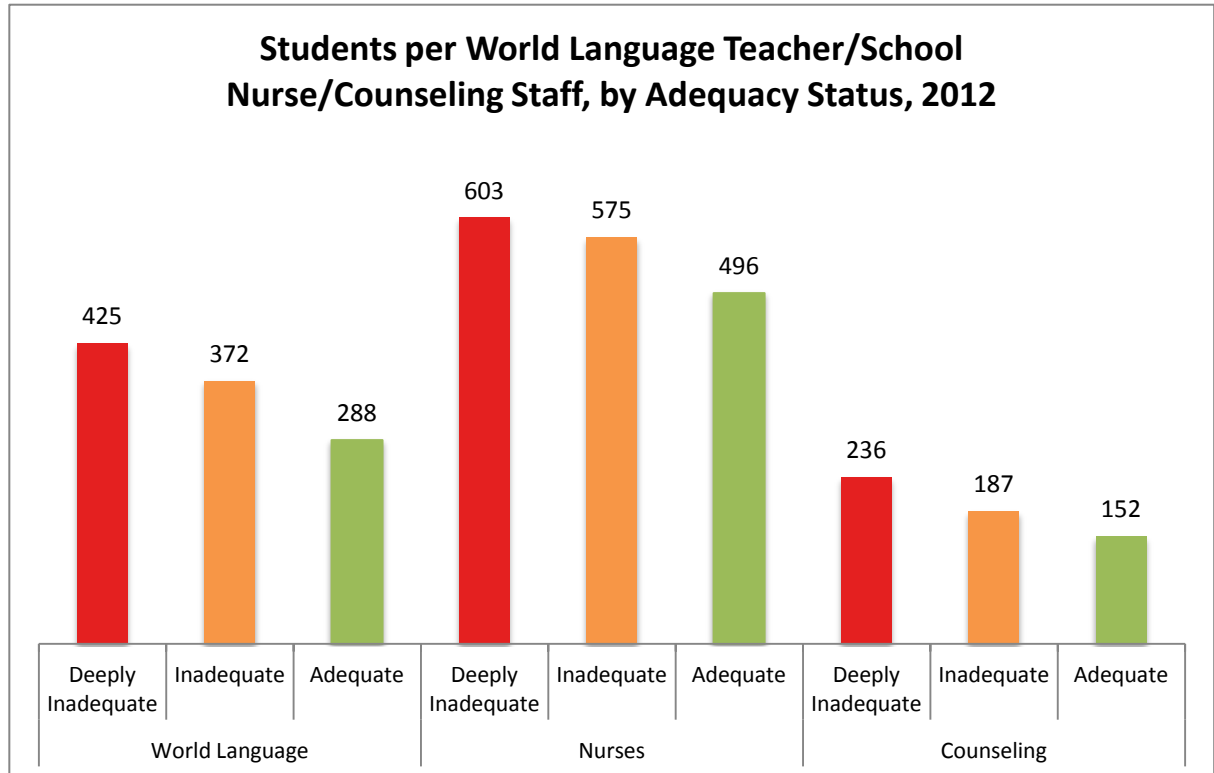
⁵ National Endowment for the Arts (2012). The arts and achievement in at-risk youth: findings from four longitudinal studies.

⁶ United States Department of Education (2012). Arts education in public elementary and secondary schools, 1999–2000 and 2009–10.

disproportionate distribution of art and music teachers, related to funding inadequacy, has almost certainly exacerbated this disturbing disparity.

Other areas of school curricula and services show a similar pattern. Figure 10 shows the student loads for world language teachers, nurses, and school counseling service providers.

Figure 10



Selective colleges often require extended study of foreign languages for admission;⁷ that level of curricular depth is much more likely at a school with more world language faculty per student. Yet the student load for these teachers in deeply inadequately funded school districts is 47 percent greater than for their colleagues in adequately funded districts.

The student load for school nurses is 21 percent greater. Full-time school nurses have been found to have a positive effect on student attendance⁸ and play a vital

⁷ http://questions.blogs.nytimes.com/2008/01/04/edlife_qanda/?_php=true&_type=blogs&r=0

⁸ <http://jsn.sagepub.com/content/19/4/225.short>

role in promoting student achievement.⁹ Increasing a school nurse's caseload may not afford him or her the opportunity to provide quality care to students.

Counseling staff is defined here as: director of school counseling services, school counselor, school psychologist, school social worker, behavior specialist, substance abuse coordinator, or anti-bullying specialist. We would expect to see more of these types of personnel in low-SES schools; to the contrary, the student load for these staff members is 55 percent higher in inadequately funded (and likely lower-SES) school districts.

The consequences of consistent underfunding of the SFRA are clear: fewer certificated staff in both adequately and inadequately funded schools and a significant increase in teachers' student loads, particularly in the case of arts and other "non-core" subjects and among student support staff.

Conclusions

The budgets of almost all New Jersey school districts have suffered since 2010, though some have suffered more than others. As this analysis of the NJDOE's staffing files shows, all New Jersey public school students are more likely to attend schools with lower staff-to-student ratios. Teachers' increased student loads are particularly evident in inadequately funded schools. This is especially true in staffing areas that provide educational and social services to students and in subject areas both inside and outside the "core" curriculum.

What's worse, inequities in staffing between adequately and inadequately funded districts have *increased* from 2009 through 2012. Put simply: since 2009, the gap in staffing, which was considerable to begin with, has become worse.

To provide equal access to a rich, deep curriculum and academic success for all students, the prescription is clear: we must ensure that all school districts receive adequate funding. The SFRA formula was enacted by the New Jersey Legislature to do just that. Anything less means New Jersey runs the risk of losing its status as one of the highest-performing public school systems in the nation, if not the world.¹⁰

⁹<http://www.nasn.org/PolicyAdvocacy/PositionPapersandReports/NASNPositionStatementsFullView/tabid/462/smId/824/ArticleID/87/Default.aspx>

¹⁰ <http://www.edlawcenter.org/news/archives/other-issues/2013-naep-new-jersey-solidifies-top-state-ranking.html>

Appendix

The 32 Deeply Inadequately Funded (greater than 20 percent) New Jersey School Districts, 2013

District	DFG	Percent Underfunded from Adequacy Target
GUTTENBERG TOWN	B	-39.6%
DOVER TOWN	A	-32.8%
BAYONNE CITY	CD	-32.1%
FREEHOLD BORO	B	-31.9%
SOUTH RIVER BORO	CD	-31.8%
NORTH BERGEN TWP	B	-31.7%
RED BANK BORO	CD	-31.4%
FAIRVIEW BORO	A	-30.5%
HALEDON BORO	B	-29.5%
PROSPECT PARK BORO	B	-29.3%
ELMWOOD PARK	CD	-29.0%
BELLEVILLE TOWN	CD	-27.5%
DUNELLEN BORO	FG	-27.5%
HAMMONTON TOWN	B	-26.3%
BOUND BROOK BORO	B	-25.8%
EAST NEWARK BORO	A	-25.3%
CARTERET BORO	B	-25.0%
BROOKLAWN BORO	B	-24.6%
CLIFFSIDE PARK BORO	B	-23.5%
SAYREVILLE BORO	DE	-23.3%
KEARNY TOWN	B	-23.2%
NORTH HANOVER TWP	CD	-22.7%
BELLMAWR BORO	B	-22.6%
CLIFTON CITY	CD	-22.2%
TUCKERTON BORO	CD	-22.2%
SOUTH AMBOY CITY	CD	-21.7%
PALISADES PARK	CD	-21.5%
EDGEWATER BORO	GH	-20.8%
NEPTUNE CITY	CD	-20.7%
WALLINGTON BORO	B	-20.7%
WOODLYNNE BORO	B	-20.5%
GREENWICH TWP	I	-20.3%

Methodology

All data used in this report comes from the New Jersey Department of Education (NJDOE).¹¹ Files include:

- Student Enrollment, 2008-09 to 2012-13
- District Factor Groups, last updated in 2000
- District Budget Summaries, 2008-09 to 2012-13

Vocational (“V”), special services (“S”), and charter school districts (“R”) are not included in this analysis.

The staffing files were provided by the NJDOE to ELC upon request. While the author had access to the 2012-13 staffing file, data integrity tests called into question the usefulness of that data. Specifically, the correlations between years of experience and salary from 2011-12 to 2012-13 were much lower than in previous years; on this basis, the author elected not to use these files in this analysis.

Staffing frequency was calculated from Full Time Equivalents (FTEs). Staff that had multiple job codes assigned were treated as multiple part-time employees and given an FTE coefficient that reflects the amount of time spent on each assignment.

All means (averages) used to determine staff-to-student ratios were weighted by district enrollment. Figure 1, however, uses resident enrollment in order to capture the costs of out-of-district placements and charter school transfers.

Adequacy figures were originally calculated by Dr. Danielle Farrie of the Education Law Center. The “adequacy budget” for a district is defined as:

$$\text{Adequacy Budget} = \text{SFRA Adequacy Budget} + \text{Special Education Categorical Aid} + \text{Security Aid}$$

The “SFRA Adequacy Budget” is based on the calculation found in NJ statute.¹²

The “actual budget” is defined as the previous year’s spending using the following formula:

$$\text{Actual Budget} = \text{Equalization Aid} + \text{Special Education Categorical Aid} + \text{Security Aid} + \text{Adjustment Aid} + \text{Supplemental Enrollment Growth Aid} + \text{Previous Year Tax Levy}$$

¹¹ <http://www.state.nj.us/education/data/>

¹² <http://www.state.nj.us/education/sff/>

The amount over or under adequacy is then calculated by the formula:

$$\text{Percentage Over-Under Adequacy} = (\text{Actual Budget} - \text{Adequacy Budget}) / \text{Adequacy Budget}$$

Data analysis was performed using Stata statistical software. Graphics were prepared in Microsoft Excel.

About the Author

Mark Weber is a Ph.D. student at Rutgers-New Brunswick's Graduate School of Education, pursuing a degree in Education Theory, Organization, and Policy under the advisement of Dr. Bruce Baker. He is also a full-time New Jersey public school teacher, currently working as a music educator in the Warren Township School District in Somerset County.

Weber's research work has appeared in the NJ Education Policy Forum, where he has published several pieces. He has testified before the NJ Legislature on state education policy issues.

Weber's writings on education policy appear regularly in *NJ Spotlight*, the National Education Policy Center, the *Washington Post*, and other outlets. He blogs frequently on current issues in education at jerseyjazzman.blogspot.com.

ELC Managing Director Theresa Luhm and Research Director Danielle Farrie provided extensive comments on this report.