



TECHNICAL SERVICES

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APPENDIX LLL-3-13
September 21, 2009

To: Daniel A. Nerad, Superintendent

From: Kurt J. Kiefer, Chief Information Officer

Subj: Wisconsin Department of Public Instruction statewide value added project results

Attached is a summary of the results from a recently completed research project conducted by The Value Added Research center (VARC) within the UW-Madison Wisconsin Center for Educational Research (WCER). Dr. Rob Meyer and Dr. Mike Christian will be on hand at the September 14 Board of Education meeting to review these findings.

The study was commissioned by the Wisconsin Department of Public Instruction (DPI). Both the Milwaukee Public Schools (MPS) and Madison Metropolitan School District (MMSD) were district participants. The purpose of the study was to determine the feasibility of a statewide value added statistical model and the development of state reporting and analysis prototypes. We are pleased with the results in that this creates yet one more vehicle through which we may benchmark our district and school performance.

At the September 14, 2009 Board meeting we will also share plans for continued professional development with our principals and staff around value added during the upcoming school year.

In November we plan to return to the Board with another presentation on the 2008-09 results that are to include additional methods of reporting data developed by VARC in conjunction with MPS and the DPI. We will also share progress with the professional development efforts.

State- and district-level value added in MMSD
Value-Added Research Center, 9/8/2009

I. Value added in MMSD relative to the state average

The table below is excerpted from Table 2.9.1 of the final report of the demonstration state value-added system. This table presents value added for the entire district of Madison. This is equal to the number of extra points students in MMSD gained on the WKCE relative to observationally similar students across the entire state. For example, between November 2005 and November 2006, fourth grade students in MMSD gained 2.77 more points on the WKCE than observationally similar students across the state of Wisconsin. In most grades, students at MMSD gained more points on the WKCE than observationally similar students across the state of Wisconsin.

		Mathematics			
		Nov. 2005 – Nov. 2006		Nov. 2006 – Nov. 2007	
Grade	District	District Average	Standard Error	District Average	Standard Error
3	Madison	-3.48	0.59	0.78	0.61
4	Madison	2.77	0.59	-1.03	0.64
5	Madison	-0.95	0.60	3.84	0.59
6	Madison	0.62	0.50	2.06	0.51
7	Madison	2.53	0.58	0.66	0.43

		Reading			
		Nov. 2005 – Nov. 2006		Nov. 2006 – Nov. 2007	
Grade	District	District Average	Standard Error	District Average	Standard Error
3	Madison	0.52	0.61	-0.49	0.63
4	Madison	3.36	0.61	2.59	0.60
5	Madison	0.90	0.65	0.82	0.63
6	Madison	1.01	0.63	0.91	0.64
7	Madison	1.35	0.64	1.32	0.54

II. Variance in value added across schools in MMSD and the entire state

The table below is excerpted from Tables 2.8.1 and 2.8.2 of the final report of the demonstration state value-added system. It presents the standard deviations of value added across schools for MMSD, MPS, and the entire state of Wisconsin. This is a measure of how much value added varies across schools within a district. A low standard deviation means that students are making similar gains across schools, while a high standard deviation means that students are making substantively different gains depending on what school they attended.

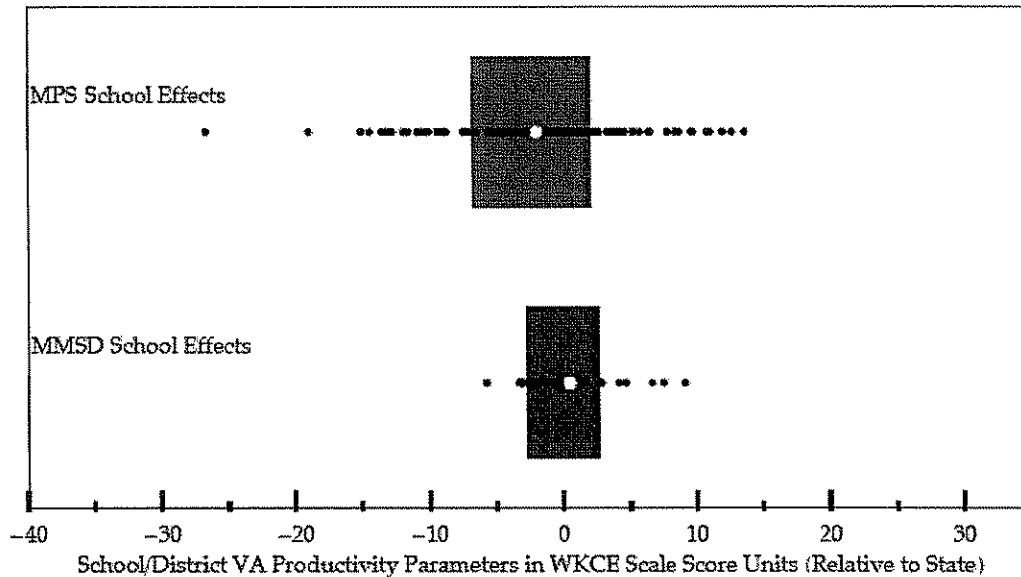
The standard deviation of math value added is smaller for Madison than it is for the entire state. This means that there are smaller differences in average math gains across Madison schools than there would be for a randomly selected group of schools in

the state. The standard deviation of reading value added, in contrast, is about the same for Madison as it is for the entire state. In all grades in both math and reading, the standard deviation of value added in Madison is smaller than that for Milwaukee. This means that the differences across Madison schools are smaller than the differences across Milwaukee schools, although some of this may be attributable to Madison schools being larger and containing more classrooms than than Milwaukee schools.

Standard Deviation of VA Productivity	Growth Year 1 (Nov 2005 – Nov 2006)					Growth Year 2 (Nov 2006 – Nov 2007)				
	3 to 4	4 to 5	5 to 6	6 to 7	7 to 8	3 to 4	4 to 5	5 to 6	6 to 7	7 to 8
Mathematics										
Wisconsin	6.79	6.92	7.20	5.41	5.86	7.10	7.65	7.07	4.83	5.06
Madison	3.56	5.60	5.85	5.37	3.05	8.16	3.06	5.75	2.93	2.59
Milwaukee	11.39	8.53	10.22	6.38	6.53	11.34	9.54	8.53	6.57	9.40
Reading										
Wisconsin	4.73	4.71	5.24	4.33	4.37	5.18	4.72	5.35	3.96	3.96
Madison	4.71	3.45	5.33	5.75	5.63	4.92	4.91	2.83	2.88	4.24
Milwaukee	7.69	8.23	8.63	6.09	6.43	8.28	8.16	8.21	6.08	5.58

III. Visual representation of value added in Madison and Milwaukee

The image below presents a visual representation of reading value added in MMSD and MPS as students progress from the third to the fourth grade over the period between the November 2005 and November 2006 WKCE.



This image presents both the average value added for each of the two districts as a whole as well as the range of values added across schools within each of the two districts. Each of the black dots signifies the value added of one of the elementary schools in MMSD or MPS. As a result, the range encompassed by the black dots cover

the full range of values added of schools in MMSD or MPS. The shaded rectangles encompass the range between the 25th and 75th percentiles of value added in the two districts; this is an alternative measure of the variability or range of value added across schools within the two districts. The white dots are the average values added for the two districts relative to the state average.

The image above suggests that students progressing from third to fourth grade between November 2005 and November 2006 tended to, on average, improve more in MMSD than in MPS. The variability across schools in the extent of student improvement was greater in MPS than it was in MMSD. One interesting thing to note is that, while students improved more in MMSD than in MPS, the schools in MPS with the highest values added compare favorably to the schools in MMSD with the highest values added. It is important to note that the results are different in other subjects, other grades, and other years; the results presented here are one example.

IV. Advantages of state-level and district-level value-added systems

The findings above—as well as the many other findings in the final report—would not have been possible without a state value-added system. A state value-added system makes it possible to compare the performance of a district or school to that of the state as a whole, offering a compelling benchmark against which to measure student improvement. By comparison, a value-added system for a single district cannot make comparisons outside the district, leaving questions that require knowledge of overall district performance unanswered.

There are many advantages to having a single-district value-added model alongside the state value-added system. In general, while a state value-added system is necessary for making comparisons outside the district, a district value-added system will often be better for making comparisons within a district. These comparisons are not just among schools, but also across different groups of students (by gender, or race, or family background) within a district. A single-district model can include data that is available for that district that may not be available for the entire state; for example, the Madison district-level model includes parents' education and language spoken at home, which are not available for the state. It also estimates the effects of all the variables in the model in a way that is specific to the district. For example, when free or reduced-price lunch is included in the Madison model, the results include an estimate of the impact on student gains of being low-income that is specific to Madison district. It also controls for the Madison-specific impact when measuring student improvement within Madison schools, which may be a more apt control than a one-size-fits-all control for free or reduced-price lunch for the entire state. A single-district value-added system allows for customization and adaptation of the value-added model to address district-specific questions and needs. It also may be quicker to produce if district-level data are available more quickly than state-level data.