



ALLEGHENY INSTITUTE

FOR PUBLIC POLICY

COST AND PERFORMANCE OF ALLEGHENY
COUNTY SCHOOL DISTRICTS

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Key Findings

There is ongoing debate locally and across the Commonwealth over education spending and funding. Taxpayers are being asked to dig deeper and deeper into their pockets to fund a system that is not necessarily delivering an adequate product. This paper examines the cost of the 43 school districts in Allegheny County and contrasts them with each district's academic performance as measured by the SAT and finds that:

- Of the 43 school districts in Allegheny County, only 8 have academic performance that can be considered “good” compared to the national level.
- 24 of 43 school districts are relatively poor performers, with 17 having SAT scores lower than the 50th worst ranked state. Thirteen have SAT scores lower than the District of Columbia, who ranked 51st.
- 11 Districts achieved “average” results compared to the national average SAT score. That is, they scored within 2 percent of the national average.
- Allegheny County school districts have an average per pupil spending rate that is 25 percent higher than the national, ranging from 1 percent to 50 percent higher.
- Teacher salaries in the County on average are 23 percent above the national average with Gateway paying 55 percent more. South Allegheny teacher pay was virtually the same as the national average.
- Per pupil spending is not correlated with SAT results.
- Lower student-teacher ratios do not improve academic performance.
- The 3 worst performing school districts spend \$10,000 per pupil and have the lowest student-teacher ratios.
- There is a strong negative relationship between the share of total spending received from the state and academic performance.

Introduction

As Pennsylvania, like many other states, grapples with the question of how to fund education, it is important to examine how current expenditures are being utilized. Throwing money at a problem rarely solves it. Thus is the current situation in the Commonwealth—school districts are spending large amounts per pupil on education yet our students are ranked near the bottom in academic achievement as measured by national SAT scores.

Pennsylvania residents are concerned about rising property tax bills that go to support the bulk of education spending and are demanding accountability and control. Legislators around the state trot out education plans designed to increase performance but always carry high price tags. Are taxpayers receiving their money's worth from Pennsylvania students? This paper examines district level data on operating expenditures per pupil, student-teacher ratios, SAT scores and other variables to give an indication as to how well each district in Allegheny County is faring academically in a comparison with national averages.

To give local taxpayers an indication of how their district compares to the national average, the forty three Allegheny County districts are placed into three categories: Good, Average, and Poor Performing districts. These categories are based on how the district's students scored on the SAT compared to the national average. If a district scored more than 20 points (2 percent) above the national average, they were categorized as "Good" while any district that scored more than 20 points (2 percent) below the national average were classified as "Poor". Any district within 20 points of the average (+/-) was classified as "Average".

The data source for this paper is primarily from the Standard and Poor's School Evaluation Services.¹ The latest data on the website is for the 2001 school year and the variables of concern are: SAT scores; average teacher salary; average operating costs per student; average student teacher ratio for grades K-12; local revenues per pupil; and state revenues per pupil. Capital costs and other non-operating costs are not included.² From these variables, the percentage of state revenues per pupil as a percentage of operating expenditures was calculated as was how far above the national average was each district's operating expenditures per pupil. The final variable is how each district would rank among the states with its average SAT score.

¹ <http://www.ses.standardandpoors.com/>. National data obtained from the National Center for Education Statistics. U.S. Department of Education. <http://nces.ed.gov>.

² The operations data is basically self reported by the school districts to the state. Standard and Poor's just reports what the state collects.

Good Performance Districts

District	Operating Expenditures Per Pupil	Percent Above National Average	Average Teacher Salary	Student-Teacher Ratio	Local Revenues Per Pupil	State Allocation Per Pupil	State as a percentage of operating costs	SAT	National Rank
Mt. Lebanon	\$ 8,499	20	\$ 56,222	14.8	\$ 7,297	\$ 1,522	17.91	1132	11
Upper St. Clair	\$ 9,309	32	\$ 61,795	16.1	\$ 8,222	\$ 1,664	17.88	1129	12
North Allegheny	\$ 9,002	27	\$ 61,525	15.7	\$ 7,950	\$ 1,842	20.46	1101	18
Hampton Township	\$ 7,888	11	\$ 55,667	16.5	\$ 6,528	\$ 2,172	27.54	1090	21
Fox Chapel Area	\$ 10,379	47	\$ 56,660	13.3	\$ 9,391	\$ 1,776	17.11	1087	21
Bethel Park	\$ 8,451	19	\$ 51,565	15.4	\$ 6,883	\$ 2,527	29.90	1067	25
Pine-Richland	\$ 7,749	9	\$ 48,143	15.1	\$ 6,915	\$ 1,833	23.65	1048	T-27
Moon Area	\$ 9,047	28	\$ 57,584	14.6	\$ 7,535	\$ 2,295	25.37	1046	28
Averages	\$ 8,791	24	\$ 56,145	15.2	\$ 7,590	\$ 1,954	22.48	1087.5	
National Average	\$ 7,079		\$ 42,898	16				1020	

The first grouping includes the districts with an average SAT score greater than 1040, 20 points (2%) above the 2001 national average of 1020. Of the 43 school districts in Allegheny County only eight (18.6 percent) scored well above the national average. The final column in the table, National Rank, shows where each district would rank compared to the 50 states and the District of Columbia. Mount Lebanon, with the highest SAT score of 1132 would rank as the 11th best state, while the lowest scoring district in this grouping, Moon Area (SAT 1046) would rank 28th.

These eight districts had a 2001 average operating expenditures per pupil of nearly \$8,800—24 percent above the national average of \$7,079. Operating expenditures, as defined by Standard and Poor's, is "the amount spent on instruction, support services, and non-instructional services, among other day-to-day purposes."³ What differentiates operating expenditures from total expenditures is the inclusion of capital and debt related expenditures, as well as community related expenditures that are included in the latter. Operating expenditures ranges from a low of \$7,749 (Pine-Richland—9 percent greater than the national average) to a high of \$10,379 (Fox Chapel—47 percent above the national average).

A key component of operating expenditures is teacher salaries. The average teacher salary in the good performing group is \$56,145, which is 30 percent higher than the national average of \$42,898 and even the county average of \$52,604. Only the Pine-Richland school district has an average teacher salary below \$50,000 (\$48,143). The highest average salary can be found in the Upper St. Clair school district (\$61,795), followed closely by North Allegheny (\$61,525).

³ Ibid.

Another allegedly key academic variable is the student-teacher ratio. Class size reduction programs have been in the forefront of the “educational reform” movement for the last few years. These programs have met with little success while costing the states that implement them billions of dollars. A previous Allegheny Institute report noted that there is no statistical evidence to link student-teacher ratios in Pennsylvania school districts to academic performance.⁴

In any case, the national average student-teacher ratio is 16 to 1 meaning that there are 16 students for every classroom teacher. The average student teacher ratio among Allegheny County’s top performing SAT districts is 15.2 to 1—5 percent lower than the national average. The range runs from a low of 13.3 (Fox Chapel) to 16.5 (Hampton Township). With this group, higher SAT scores are not correlated with lower student-teacher ratios.

Local tax revenues and State grants provide the bulk of a district’s revenue streams. At the local level in Allegheny County, districts receive revenues from two sources: property taxes and wage taxes. The average local revenue per pupil for these districts is \$7,590. The Fox Chapel school district collects the highest amount per pupil (\$9,391) while Hampton Township collects the least (\$6,528).

State revenues are given to each district derived from a complex formula based on: the amount of the Basic Education Funding received in the prior year plus any increases based on; a market value/personal income aid ratio times the average daily membership [(MV/PI) *AR]; plus a growth supplement (if warranted) based on increases to the previous ratio; plus a poverty supplement for a qualifying school district; plus additional funding if the increase to the (MV/PI) *AR is greater than four percent; plus small district assistance; plus a minimum per average daily membership guarantee.⁵

Simply put, not every district receives the same amount from the State. The formula is set up so that poorer districts receive more than wealthier ones. The average state allocation per pupil for the high scoring districts was \$1,954 in 2001 with a range that had a low of \$1,522 (Mt. Lebanon) to a high of \$2,527 (Bethel Park).

The State’s share of operating expenditures has been the frequent subject of Pennsylvania education reform. Proponents of increasing education funding claim that the State only funds approximately 37 percent of the cost of education. As noted by the formula above, the State allocates money to each school district based on a system that allocates more to “poorer” school districts and less to “richer” school districts. In this grouping of districts the average percentage of state revenues as an average of district per pupil operating costs is just less than 22.5 percent. The range spans a low of 17.11 (Fox Chapel) to a high of 29.90 (Bethel Park).

⁴ Gamrat, Frank. “Explaining Variability in School Performance: The Case of Pennsylvania.” Allegheny Institute for Public Policy Report #02-04. April 2002. 1-15.

⁵ Department of Education website for the 2000-2001 school year:
http://www.pde.state.pa.us/k12_finances/lib/k12_finances/BEFNarrative0001.pdf

Correlation of Variables: Good Performance Districts

<i>Districts with SATs >1040</i>	<i>Operating Expenditures Per Pupil</i>	<i>Average Teacher Salary</i>	<i>Student-Teacher Ratio</i>	<i>Local Revenues Per Pupil</i>	<i>State Allocation Per Pupil</i>	<i>SAT</i>
Operating Expenditures Per Pupil	1					
Average Teacher Salary	0.5707	1				
Student-Teacher Ratio	-0.6149	0.1611	1			
Local Revenues Per Pupil	0.9605	0.5211	-0.6197	1		
State Allocation Per Pupil	-0.2509	-0.3292	0.1674	-0.4485	1	
SAT	0.2350	0.6210	0.2409	0.2727	-0.6742	1

The above correlation matrix provides a glimpse of how the variables interact with one another. Among the interesting findings from this table is that state revenues per pupil are negatively and strongly correlated with SAT scores (-0.6742) implying that as the state allocation to the district increases, the average SAT score in these districts decreases. The clear indication is that school districts where the local taxpayers provide large amounts of funding seem to place more emphasis on academic excellence. This is also represented in the positive correlation between local revenues per pupil and SAT scores.

Also student-teacher ratios are positively correlated with SAT scores (0.2409) implying that the average SAT score will rise as the student-teacher ratio rises. The exact opposite of what advocates of lower student-teacher ratios would expect. It is worth noting that the correlation matrix does not imply statistical significance, as mentioned above student teacher ratios were found to be not statistically significant when regressed on academic variables.⁶

⁶ Supra, note 3.

Average Performance Districts

District	Operating Expenditures Per Pupil	Percent Above National Average	Average Teacher Salary	Student-Teacher Ratio	Local Revenues Per Pupil	State Allocation Per Pupil	State as a percentage of operating costs	SAT	National Rank
Quaker Valley	\$ 10,946	55	\$ 58,217	14.1	\$ 10,322	\$ 1,499	13.69	1038	29
North Hills	\$ 9,225	30	\$ 57,465	14.7	\$ 7,798	\$ 1,844	19.99	1037	29
West Jefferson Hills	\$ 8,227	16	\$ 59,725	18.6	\$ 6,071	\$ 2,428	29.51	1035	30
Gateway	\$ 10,472	48	\$ 65,673	14.3	\$ 7,935	\$ 2,361	22.55	1021	33
Plum Borough	\$ 7,412	5	\$ 53,701	17.4	\$ 4,090	\$ 3,166	42.71	1021	33
Shaler Area	\$ 8,337	18	\$ 54,346	14.9	\$ 6,055	\$ 2,569	30.81	1019	T-33
Carlynton	\$ 9,647	36	\$ 55,470	16.2	\$ 6,951	\$ 3,042	31.53	1012	T-37
Chartiers Valley	\$ 8,632	22	\$ 45,862	15.1	\$ 7,601	\$ 2,038	23.61	1006	T-39
South Park	\$ 7,647	8	\$ 53,247	18.9	\$ 4,932	\$ 3,498	45.74	1006	T-39
Keystone Oaks	\$ 9,061	28	\$ 56,318	14.8	\$ 7,886	\$ 2,363	26.08	1003	40
Avonworth	\$ 8,479	20	\$ 48,729	16.9	\$ 6,909	\$ 2,210	26.06	1002	40
Averages	\$ 8,917	26	\$ 55,341	16.0	\$ 6,959	\$ 2,456	28	1018	
National Average	\$ 7,079		\$ 42,898	16				1020	

The second grouping of school districts have an average SAT score in the range of 1000 to 1039, which represents 20 points +/- the national average of 1020. Of Allegheny County's 43 school districts, 11 (26 percent) fell into this range. The highest scoring district amid this subset is Quaker Valley (1038) and the lowest scoring district is Avonworth (1002). If Quaker Valley were to be ranked among the states for SAT performance, they would have been the 29th best state while Avonworth would have been the 40th best state. The rest of the districts' SAT scores and national ranks are represented in the final two columns in the table above.

The average per pupil operating expenditure among the average performance districts is \$8,917—26 percent above the national average of \$7,079. The district in this sample with the lowest average operating expenditure per pupil is Plum Borough (\$7,412—5 percent above the national average) followed closely by South Park (\$7,647—8 percent above). The district in this grouping with the highest per pupil operating expenditure is Quaker Valley (\$10,946—55 percent above the national average) followed closely by Gateway (\$10,472—48 percent above).

The largest segment of operating expenditures for any school district is teacher salaries. These 11 districts had an average teacher salary of \$55,341—29 percent greater than the national average of \$42,898, but only 1.4 percent less than the districts in the “Good Performing” category. The average teacher salary is highest in the Gateway school district (\$65,673), which represents not only the high-water mark among this group of districts, but also in Allegheny County. The lowest average teacher salary among this group belongs to Chartiers Valley (\$45,862).

Among this group of school districts, the average student-teacher ratio is equal to the national average of 16 students for every classroom teacher. The district with the highest

ratio is South Park (18.9 to 1) while the district with the lowest ratio is Quaker Valley (14.1 to 1).

On the revenue side, Quaker Valley not only leads this grouping with \$10,322 local revenues per pupil, but also leads all Allegheny County school districts. The Quaker Valley total is 152 percent greater than the lowest district in the sample, Plum Borough, which averages \$4,090 in local revenues per pupil. The average local allocation per pupil among this grouping is \$6,959.

As mentioned above each district receives an allocation from the state based on a complex formula as well as additional funds for any special needs students. The range of state allocation per pupil starts at a low of \$1,499 (Quaker Valley) to a high of \$3,498 (South Park). As for the share of per pupil operating expenditures covered by state aid, the districts at the ends of the range are the same: Quaker Valley has the smallest percentage at 13.7 percent, while South Park has the largest percentage of per pupil operating costs covered by the state (45.7 percent). The average amount of per pupil operating expenditures covered by state aid in the grouping of average performing students is 28 percent.

Correlation of Variables: Average Performance Districts

The correlation matrix below provides a glimpse of how the variables interact with one another. Among the interesting findings from this table is that SAT scores are negatively correlated with the state’s allocation per pupil but positively correlated with the local revenues per pupil. This suggests that the more money received from the state, the lower will be SAT scores, whereas more local revenues translate into higher SAT scores. The indication is that school districts that receive larger sums of revenues from local sources place a greater emphasis on academics than those with larger amounts from the Commonwealth.

<i>Districts with SATs >1000 and <1039</i>	<i>Operating Expenditures Per Pupil</i>	<i>Average Teacher Salary</i>	<i>Student-Teacher Ratio</i>	<i>Local Revenues Per Pupil</i>	<i>State Allocation Per Pupil</i>	<i>SAT</i>
Operating Expenditures Per Pupil	1					
Average Teacher Salary	0.5314	1				
Student-Teacher Ratio	-0.7385	-0.2216	1			
Local Revenues Per Pupil	0.8969	0.2543	-0.76425	1		
State Allocation Per Pupil	-0.6258	-0.0971	0.6862	-0.8467	1	
SAT	0.3540	0.5877	-0.1786	0.2832	-0.4323	1

Another relationship worth noting is that of average teacher salary and SAT scores (0.5877). This large positive relationship implies that increasing the average teacher salary would result in higher SAT scores for the 11 districts in this sample. Once again it is important to note that correlation does not imply statistical significance. As noted in a previous Allegheny Institute report there was no statistical relationship between average

teacher salaries and academic performance.⁷ It is also worth noting that teacher salaries are not tied to the academic performance of their students. Teachers, whose contracts are negotiated by their unions, have their wages tied to less variable measures such as tenure—the longer a teacher stays in the district, the higher will be their salary.

Unlike the good performance districts, the average performance districts have a negative correlation between the student-teacher ratio and SAT scores—that is as the student-teacher ratio falls performance on the SAT increases. However, this relationship is weak (-0.1786) and not an endorsement for class size reduction programs.

Poor Performance Districts

District	Operating Expenditures Per Pupil	Percent Above National Average	Average Teacher Salary	Student-Teacher Ratio	Local Revenues Per Pupil	State Allocation Per Pupil	State as a percentage of operating costs	SAT	National Rank
South Fayette Twp.	\$ 8,613	22	\$ 53,222	14.8	\$ 7,864	\$ 2,510	29.14	998	46
Baldwin-Whitehall	\$ 8,494	20	\$ 55,973	17.3	\$ 6,405	\$ 2,447	28.81	992	T-48
Allegheny Valley	\$ 9,490	34	\$ 51,759	16.2	\$ 9,436	\$ 2,236	23.56	985	48
West Allegheny	\$ 8,842	25	\$ 51,860	15.1	\$ 6,496	\$ 2,480	28.05	981	49
Highlands	\$ 8,149	15	\$ 49,397	14.8	\$ 4,134	\$ 3,971	48.73	980	T-49
Montour	\$ 8,897	26	\$ 60,166	17.4	\$ 7,208	\$ 1,877	21.10	978	50
Riverview	\$ 8,383	18	\$ 48,991	13.9	\$ 6,099	\$ 2,333	27.83	977	50
Brentwood	\$ 8,091	14	\$ 47,735	15.8	\$ 5,015	\$ 3,029	37.44	969	51
Elizabeth Forward	\$ 7,685	9	\$ 48,437	16.3	\$ 4,091	\$ 3,715	48.34	969	51
Deer Lakes	\$ 8,349	18	\$ 51,192	15.9	\$ 4,834	\$ 3,608	43.21	959	51
Steel Valley	\$ 7,847	11	\$ 51,464	16.8	\$ 3,781	\$ 3,609	45.99	956	T-51
Northgate	\$ 7,684	9	\$ 47,951	15.5	\$ 5,462	\$ 2,976	38.73	951	52
Penn Hills	\$ 8,231	16	\$ 45,256	14.9	\$ 4,996	\$ 3,134	38.08	951	52
Cornell	\$ 8,496	20	\$ 48,959	15.5	\$ 6,509	\$ 2,596	30.56	946	52
West Mifflin	\$ 8,752	24	\$ 53,609	18.6	\$ 6,307	\$ 2,524	28.84	942	52
McKeesport Area	\$ 7,904	12	\$ 48,277	17	\$ 3,156	\$ 4,404	55.72	939	52
South Allegheny	\$ 7,148	1	\$ 42,757	15.2	\$ 2,755	\$ 4,859	67.98	938	52
East Allegheny	\$ 8,939	26	\$ 47,724	16.2	\$ 4,933	\$ 3,515	39.32	932	52
Woodland Hills	\$ 10,125	43	\$ 50,726	15.5	\$ 6,638	\$ 3,266	32.26	921	52
Pittsburgh	\$ 10,749	52	\$ 58,854	14	\$ 6,795	\$ 4,365	40.61	919	52
Sto-Rox	\$ 10,723	51	\$ 53,480	14.5	\$ 4,249	\$ 5,119	47.74	834	52
Clairton City	\$ 9,817	39	\$ 47,522	12.7	\$ 3,085	\$ 7,320	74.56	819	52
Wilkinsburg	\$ 10,154	43	\$ 44,075	12.9	\$ 5,131	\$ 3,609	35.54	752	52
Duquesne City	\$ 10,049	42	\$ 44,665	12.9	\$ 2,265	\$ 8,989	89.45	693	52
Average	\$ 8,817	25	\$ 50,169	15.4	\$ 5,319	\$ 3,687	41.73	928.38	
National Average	\$ 7,079		\$ 42,898	16				1020	

The final grouping of districts is comprised of those districts in Allegheny County that scored 20 or more points below the national average of 1020 in 2001. This represents the

⁷ Supra note 3, page 12.

largest group—24 of 43 districts or 55.8 percent of the districts in Allegheny County. The average SAT score for this group is slightly more than 928—nearly 10 percent below the national average. The highest scoring district, South Fayette Township (998) would rank as the 46th best state while the lowest scoring district, Duquesne City (693) would rank behind the District of Columbia (the worst SAT scoring “state”) at 52nd. In fact, 13 of the 43 Allegheny County districts (30 percent) would rank below the District of Columbia while another 4 would rank just ahead of or tie DC.

The average cost per pupil for the poor performance districts is \$8,817—25 percent above the national average of \$7,079. The highest cost district in this sub-sample is the Pittsburgh school district at \$10,749 per pupil—52 percent above the national average, followed closely by the Sto-Rox school district (\$10,723 or 51 percent above the national average). The district with the lowest per pupil cost among the poor performing districts is South Allegheny (\$7,148—1 percent above the national average). South Allegheny is the district with the lowest operating cost per pupil of all the 43 districts in Allegheny County. However, not one district has operating costs per pupil that are below the national average.

Average teacher salaries are driving school district operating costs. The district in this sample with the highest average teacher salary in 2001 is the Pittsburgh school district (\$58,845). Not surprisingly the district with the lowest average operating costs per pupil, South Allegheny, also has the lowest average teacher salary at \$42,757. As mentioned above, teacher salaries have more to do with tenure than student performance. Teachers in the Pittsburgh school district averaged 18.2 years of service in 2001 while the teachers in the South Allegheny district averaged only 14.3 years of service. The county average for 2001 was 16.8 years of service.

Low student teacher ratios, long hyped as crucial to the learning environment, are lower for this sub group of districts (15.4 students per teacher) than either the county average (15.5) or the national average (16). The three poorest performing districts in the county (as defined by SAT scores) also have the lowest student teacher ratios in the county (Duquesne and Wilkinsburg—12.9, Clairton—12.7). The highest student teacher ratio in this sub-sample is 18.6 students per teacher in West Mifflin.

Local revenues per pupil are positively related to academic performance. The average amount of local revenues per pupil is the highest among the good performing districts (\$7,590), lower among the average performing districts (\$6,959) and the lowest among the poor performing districts (\$5,319). The district receiving the most local revenue per pupil among the poor performing districts is Allegheny Valley (\$9,436) while the district receiving the least amount of local revenue per student is Duquesne (\$2,265).

As mentioned above state revenues are tied to a complex formula that tends to allocate more funds to poorer districts than wealthier ones. The state allocation per pupil is negatively related to academic performance. The average amount of state allocation per pupil is lowest among the good performing districts (\$1,954—22.5 percent of the average district operating cost per pupil), higher among the average performing districts

(\$2,456—28 percent of the average district operating cost per pupil), and highest among the lowest performing districts (\$3,687—41.7 percent of the average district operating cost per pupil). Among this sub-sample of poor performing districts, Montour receives the lowest state allocation (\$1,877—21 percent of its average per student operating costs) while Duquesne receives the most (nearly \$9,000 or 89.45 percent of its average operating costs). Of the poor performing districts 4 receive state allocations in excess of 50 percent of the average operating expenditures per pupil.⁸ Ten of the 24 poor performing districts (42 percent) receive at least 40 percent of their average operating expenditures per pupil from the Commonwealth. Only two of the good and average districts (10 percent) receive more than 40 percent.

Correlation of Variables: Poor Performance Districts

<i>Districts with SATs <1000</i>	<i>Operating Expenditures Per Pupil</i>	<i>Average Teacher Salary</i>	<i>Student-Teacher Ratio</i>	<i>Local Revenues Per Pupil</i>	<i>State Allocation Per Pupil</i>	<i>SAT</i>
Operating Expenditures Per Pupil	1					
Average Teacher Salary	0.2822	1				
Student-Teacher Ratio	-0.4729	0.4239	1			
Local Revenues Per Pupil	0.1994	0.5976	0.2791	1		
State Allocation Per Pupil	0.3441	-0.4088	-0.58357	-0.7440	1	
SAT	-0.6082	0.4023	0.6403	0.5036	-0.7917	1

The above correlation matrix of the poor performance districts shows the interaction between the variables in this study. One relationship that stands out is that of the average SAT score and average operating expenditures per pupil. The strong negative (-0.6082) correlation indicates that for these districts as operating expenditures per pupil rises the average SAT score will fall. This is contrary to the findings for both the good and average performance districts in which this relationship was positive though not very strong (0.2350 and 0.3540 respectively).

Another relationship that stands out is the strong positive correlation between the student teacher ratio and the SAT score (0.6403). The indication is that as the student teacher ratio increases so will the average SAT score. Even though this relationship was also found with the good performing districts (0.2409), it was not as strong as it is among the poor performing districts. Among the poorer performing districts, the student teacher ratio was the lowest (15.4 students per classroom teacher) amid the three groups that may signify that classroom sizes may be too low in these districts.

The correlation between local revenues and state allocation for the poor performing districts resembles that for the other two groups—there is a positive correlation (0.5036) between local revenues and academic performance as measured by the SAT and a

⁸ They are: McKeesport—55.72 percent; South Allegheny—68 percent; Clairton—74.5 percent; and Duquesne—89.45 percent.

negative correlation between state allocation and academic performance (-0.7917). However, the correlation of these variables is strongest amongst the poorer performing districts. This may signify that school districts in areas where local revenues provide the bulk of the education funding seem to place more emphasis on academic excellence.

Correlation of Variables: All Districts

<i>All Districts</i>	<i>Operating Expenditures Per Pupil</i>	<i>Average Teacher Salary</i>	<i>Student-Teacher Ratio</i>	<i>Local Revenues Per Pupil</i>	<i>State Allocation Per Pupil</i>	<i>SAT</i>
Operating Expenditures Per Pupil	1					
Average Teacher Salary	0.3523	1				
Student-Teacher Ratio	-0.5487	0.1800	1			
Local Revenues Per Pupil	0.3993	0.6179	-0.05991	1		
State Allocation Per Pupil	0.1324	-0.4906	-0.30175	-0.7829	1	
SAT	-0.2682	0.5859	0.3261	0.6326	-0.8197	1

The correlation matrix above is for all 43 Allegheny County school districts. There are three correlations that stand out. First is the negative correlation between average operating expenditures per pupil and average SAT scores (-0.2682). The implication is that increasing the average operating expenditure per pupil will reduce the average SAT score. This notion runs counter to popular belief—spending more improves academic performance. Again it is worth noting that correlation between variables does not denote a statistically significant relationship.

The second is the relationship between local revenues and academic performance as measured by SAT scores. There is a strong positive correlation between local revenues per pupil and average SAT scores (0.6326) indicating that school districts in which local taxpayers contribute a large share to education are more than likely to stress academic achievement.

The third correlation of note is the very strong and negative relationship between the average SAT score and the average state allocation per pupil (-0.8197). The implication of such a large negative relationship is that as state allocations per pupil rise, average SAT scores decrease. Looking at the breakout tables above validates this association. Districts that were categorized as “good” performing received an average state allocation that was less than those categorized as “average” that received less from the Commonwealth than those categorized as “poor”. This is not surprising since the state’s funding formula is currently constructed to award more funding to poorer districts than to wealthier ones.

Conclusion

The preceding pages examined the cost and academic performance of Allegheny County's 43 school districts by focusing on how each district fared on the SAT score, the average operating expenditures per pupil, average teacher salary, as well as local revenues and state allocations. Of the 43 school districts in Allegheny County, only 8 (18.6 percent) were able to score more than 2 percent above the national average of 1020. Only 11 districts (26 percent) were able to score within 40 points of the national average (1000 to 1039). However, 24 of 43 school districts are relatively poor performers having average SAT scores below 1000.

When compared to the states' SAT rankings, very few of the districts score among the top twenty states (3 of 43). However, 17 districts have SAT scores that would rank them lower than the 50th worst ranked state. Thirteen have SAT scores lower than the District of Columbia, who ranked 51st.

Allegheny County school districts have an average per pupil operating expenditure rate that is 25 percent higher than the national average. Not one district is below the national average of \$7,079. At the top end of the range is Quaker Valley, who spends 55 percent more per pupil than the national average, while at the low end of the range is South Allegheny who spends only 1 percent more than the national average. Across the County, per pupil spending is not correlated with SAT results. In fact the correlation coefficient of (-0.2682) implies that as per pupil spending increases, SAT scores will decrease.

Teacher salaries, the largest component of operating expenditures, are on average 23 percent higher in Allegheny County than the national average of \$42,898. The top paying school district Gateway, pays 55 percent more than the national average, while South Allegheny's pay rate was virtually the same.

Student-teacher ratios were not found to be an important factor in determining academic success. A positive correlation coefficient of (0.3261) implies that as student teacher ratios increase, SAT scores will also increase. The average student-teacher ratio among Allegheny County's school districts is 15.5 students per classroom teacher—below the national average of 16 to 1. The three poorest performing districts in the county also had the lowest student-teacher ratios.

The correlation between state allocation per pupil and SAT scores is negative and strong (-0.8197), while that between local revenues per pupil and SAT scores are positive and strong (0.6326) for districts in Allegheny County. The implication is that in school districts in which local taxpayers contribute a large share to education are more than likely to stress academic achievement.