



# SHOW-ME LIVING

ADVANCING LIBERTY WITH RESPONSIBILITY BY PROMOTING MARKET SOLUTIONS FOR MISSOURI PUBLIC POLICY



NUMBER 2

MAY 14, 2008

## SHOW-ME: THE GRADES

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### EXECUTIVE SUMMARY

This report introduces “Show-Me: The Grades,” a tool for comparing Missouri public school performance across the state. “Show-Me: The Grades” comprises three useful applications: 1) a school “report card” generator, allowing users to graphically compare a selected school’s academic performance to a district and state average; 2) a “district ranker,” allowing users to compare a selected school district’s academic rank and per-student spending to the rankings of other school districts across the state; and 3) a “school ranker,” allowing users to compare a selected school’s academic rank to the rankings of other schools across the state.

Below you will find instructions on how to use these applications, and an explanation of the metrics we employed in comparing academic performance.

### USING “SHOW-ME: THE GRADES”

“Show-Me: The Grades” is a series of Microsoft Excel documents easily downloadable from the Show-Me Institute’s website.<sup>1</sup> These files allow users to quickly compare Missouri public school performance across the state through menu prompts and intuitive graphs. In this section, I will discuss each application and discuss how one can generate and interpret their results.<sup>2</sup>

#### “Report Card” Application

The first application of “Show-Me: The Grades” allows users to compare a school’s academic performance to that

Figure 1: Show-Me: The Grades “Report Card” Template

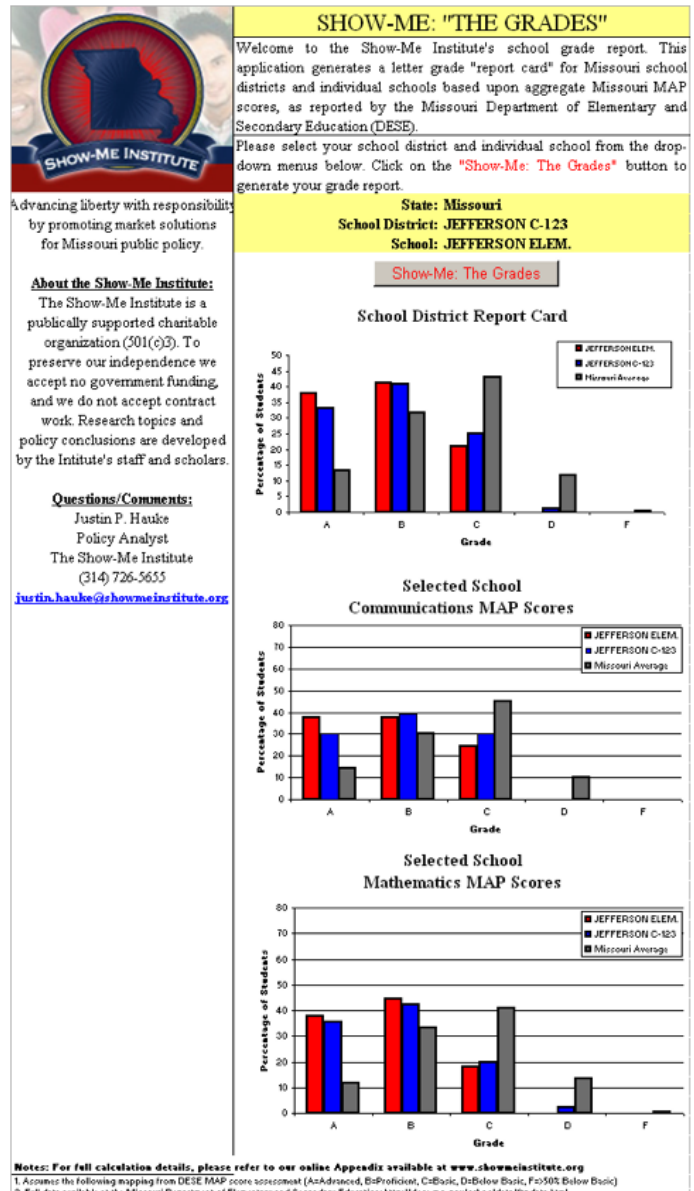


Figure 2: Show-Me: The Grades “District Ranker” Template (Abridged)

Welcome to the Show-Me Institute's school district ranker. This application allows users to compare Missouri school district performance measured by Missouri MAP Index Scores, as calculated by the Missouri Department of Elementary and Secondary Education (DESE).

Please select your school district from the drop-down menu below. Click on the link to see how your school district compares to other Missouri districts.

Select Your District: **JEFFERSON C-123**  
[Find my district's rank!](#)

Academic Rank	School District	MAP Index Score *	Per Student Spending
1	<b>JEFFERSON C-123</b>	806.20	\$13,363.96
2	AVENUE CITY R-IX	804.56	\$10,567.49
3	PLEASANT VIEW R-VI	802.22	\$16,178.30
4	CLAYTON	797.22	\$18,230.99
5	LINDERBEGH R-VIII	795.89	\$10,588.86
6	BRENTWOOD	794.56	\$18,650.58
7	LADUE	794.36	\$13,564.23
8	NEW YORK R-IV	793.75	\$16,940.77
9	KIRKWOOD R-VII	793.30	\$12,104.02
10	THORNFIELD R-I	792.27	\$12,539.51
11	WEBSTER GROVES	792.24	\$14,864.90
12	ROCKWOOD R-VI	786.90	\$10,697.93
13	LIBERTY S3	786.31	\$11,900.35
14	BUCKLIN R-II	784.62	\$12,003.08
15	ACADEMIE LAFAYETTE	784.33	N/A
16	ROSCOE C-1	782.18	\$12,844.22
17	STATE SCHOOLS FOR SEV HANDIC	779.30	N/A
18	LUTIE R-VI	778.76	\$10,062.43
19	NIXA R-II	776.76	\$8,975.95
20	BLUE SPRINGS R-IV	776.65	\$11,144.30
21	STANBERRY R-II	775.91	\$10,445.64
22	LAREDO R-VII	775.70	\$18,741.00
23	BELL CITY R-II	774.99	\$9,521.13
24	LEOPOLD R-III	774.77	\$6,943.47
25	HICKORY CO. R-I	774.51	\$10,025.12

greater than 50 percent who score lower than “Basic.” For example, if 100 percent of the students scored below “Basic,” then the weighted score would be 50 percent “D” and 50 percent “F.”<sup>4</sup>

The next set of graphs — titled “Selected School: Communications (Mathematics) MAP Scores” — compares the academic performance of the user’s selected school on the Communications (Mathematics) MAP test, respectively, to that of the school’s district and the state as a whole. Letter grade assignments are as described above. Refer to the discussion below for calculation and source details.

## “District Ranker” Application

The next application allows users to compare a school district’s academic performance and per-student spending. This application lists the 541 Missouri public and charter school districts in order of academic rank — as determined by the simple average of the district’s MAP Index Scores — with a ranking of “1” being the best (see full calculation details below).<sup>5</sup> In addition, the application reports each district’s total per-student spending (federal, state, and local contributions combined). Figure 2 presents the default layout of the “district ranker.”

Once this application is open, users will have the option of selecting a school district from the menu prompt in cell C10. Once users have made their selection, clicking on the “Find my district’s rank!” link will bring up the

of its district and the state as a whole. Figure 1 presents the “report card” generator’s default layout.

Once this application is open, users will have the option of selecting a school district from the menu prompt in cell C11 and an individual school in cell C12, which is dependent on the district selection in cell C11. Once the user has made his/her selection, clicking on the “Show-Me: The Grades” button will generate a series of performance graphs, allowing users to compare their selected schools’ academic success.<sup>3</sup>

The first graph — titled “School District Report Card” — compares the aggregate academic performance of

the user’s selected school to that of its school district and the state as a whole. Performance is broken down into “letter grade” categories, with A being the best and F being the worst. These letter grades correspond to the selected school’s (or district’s) weighted-average scores on the Missouri Assessment Program (MAP) test. MAP test scores are divided into four categories by the Department of Elementary and Secondary Education (DESE): “Advanced,” “Proficient,” “Basic,” and “Below Basic.” We assign report-card-style letter grades to these categories (A=Advanced, B=Proficient, etc.), and assign a grade of “F” to the percentage of students

selected district's ranking and details of its per-student spending and MAP Index Score. In addition, the selected school district will appear in a red font for ease of comparison.

## “School Ranker” Application

This last application allows users to compare an individual school's academic performance ranking. This application lists Missouri's 1,961 public and publicly chartered schools in order of academic rank — as determined by the simple average of the school's MAP Index Scores — with a ranking of “1” being the best (see full details below). Figure 3 presents the default layout of the “school ranker.”

Once this application is open, users will have the option of selecting a school from the menu prompt in cell C11. Once the user has made his/her selection, clicking on the “Find my school's rank!” link will bring up the selected school's ranking and MAP Index Score. In addition, the selected school will appear in a red font for ease of comparison.

## CALCULATIONS FOR “SHOW-ME: THE GRADES”

This section discusses the weighting conventions we employed in calculating district/school MAP test scores and district per-student spending. We also discuss the source of our data.

We obtained individual MAP test and MAP index scores from the

Figure 3: Show-Me: The Grades “School Ranker” Template (Abridged)

Rank	School	MAP Index Score*
1	<b>NORTHWOOD SCH.</b>	863.09
2	BRIARWOOD STATE SCHOOL	846.43
3	ELIAS MICHAEL ELEM.	846.00
4	CITADEL STATE SCHOOL	843.75
5	BOOTHEEL STATE SCHOOL	840.91
6	METRO HIGH	839.10
7	DALE M THOMPSON/TRAILS WEST SS	836.43
8	E W THOMPSON STATE SCHOOL	830.00
9	HELEN M DAVIS STATE SCHOOL	829.76
10	DOGWOOD HILLS STATE SCHOOL	827.09
11	MCKINLEY/CLASSICAL JR. ACAD.	820.42
12	MAPLE VALLEY STATE SCHOOL	818.85
13	KENNARD/CLASSICAL JR. ACAD.	816.13
14	GORDONVILLE ATTENDANCE CTR.	815.40
15	ALEXANDER DONIPHAN ELEM.	812.17
16	SHADY GROVE STATE SCHOOL	811.81
17	R. J. DELANO	811.31
18	KEHRS MILL ELEM.	811.03
19	CRESTWOOD ELEM.	811.00
20	CORDILL-MASON ELEM.	810.40
21	LONG ELEM.	809.85
22	EDGAR ROAD ELEM.	808.75
23	VOY SPEARS, JR. ELEM.	808.70
24	GLENRIDGE ELEM.	808.63
25	ELLISON ELEM.	807.39

Missouri Department of Elementary and Secondary Education (DESE).<sup>6</sup> In raw form, this dataset contains nearly 15,000 observations of MAP test performance, broken down by school, grade level, test (Mathematics or Communications), and academic year (2006 and 2007).<sup>7</sup> The database contains both the number and percentage of reporting students in each category scoring at each performance level (“Advanced,” “Proficient,” “Basic” and “Below Basic”).<sup>8</sup> We also collected data on per-student funding by school district from DESE by dividing aggregate

district funding (a combination of federal, state, and local spending) by total district student enrollment.<sup>9</sup>

MAP index scores are calculated by DESE as follows:

$$\text{MAP Index} = (\% \text{Below Basic} * 600) + (\% \text{Basic} * 700) + (\% \text{Proficient} * 800) + (\% \text{Advanced} * 900)$$

The MAP index score may be easier to interpret through an example. For example, consider 20 reported scores for school x, grade level y. If 10 of these students received “advanced” MAP scores and the remaining 10 students received

“proficient” MAP scores, then the MAP Index score for school x, grade level y would be 850.

In comparing school (or district) performance, we employed a weighted average of all scores for the school (or district) in question. A weighted-average insured that school (or district) average scores were directly comparable to one another. Weighted-averages were computed as follows:

$$MAP\ Score = \sum_{i=1}^N w_i * MAP_i$$

where:

$N$  = The number of groups  
(i.e., grade level (school))

$w_i$  = Weight of each group  
(by percentage of student  
population)

$MAP_i$  = Average MAP Score  
of each group.

For example, the weighted average MAP score for an individual school would be calculated as the sum of the MAP index scores for each grade level in the school, weighted by the number of students in each of those grade levels in comparison to the school overall. A similar argument follows for district and state calculations.

## CONCLUSION

This report introduced “Show-Me: The Grades,” a tool for comparing public school performance in Missouri. This tool has three applications, which in aggregate are useful in assessing and comparing school academic performance. Our hope is that these applications will help Missourians better understand the quality of the state’s public education. The Show-Me Institute’s publication series provides a litany of policy recommendations, outlining ways in which the state can improve education through increased parental choice options, updated performance metrics, and improved teacher incentive programs. “Show-Me: The Grades” provides a tool through which Missourians can better assess these recommendations.

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## NOTES:

- <sup>1</sup> Online here: <http://www.showmeliving.org>
- <sup>2</sup> Note that throughout this document and in all tool applications, results refer to the 2006-2007 academic year — the most recent year in which data is available.
- <sup>3</sup> Note that the user’s selected school must be within the user’s selected district. If the district and school do not match, the grade report will generate an error.
- <sup>4</sup> Note that this mapping convention will imply that the lowest “grade” a district (or school) can receive is 50 percent “D” and 50 percent “F.”
- <sup>5</sup> Simple averages were used because MAP index scores are already calculated as weighted percentages.
- <sup>6</sup> Online here: [http://dese.mo.gov/schooldata/ftp/MAP\\_District.xls](http://dese.mo.gov/schooldata/ftp/MAP_District.xls)
- <sup>7</sup> The DESE dataset only reports MAP test score data for eligible students. This data may not match data used for accreditation (MSIP) purposes in each school district’s Annual Performance Report (APR). For accreditation purposes, some limited-English and other students may be excluded from MAP reporting.
- <sup>8</sup> Note DESE omits some test score observations, as described in accompanying documentation. In addition, we did not consider grade distribution by race or income. Online here: [http://dese.mo.gov/divimprove/assess/2006\\_gir.pdf](http://dese.mo.gov/divimprove/assess/2006_gir.pdf)
- <sup>9</sup> Total district expenditures and student attendance rates were approximated by the DESE data categories TEXP5 and enroll5, respectively. Online here: <http://dese.mo.gov/schooldata/ftp/finance.xls>