

Great Schools: Identifying Higher-Performing Schools

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Introduction

As rural states nationwide struggle with cuts in education funding, declining enrollments and increased costs it becomes crucial to examine those schools that are successful in educating their students. These higher-performing schools can then be used as models for education excellence throughout the state. Defining higher-performing is not an easy venture and there are as many opinions of what constitutes higher-performing as there are organizations reporting on higher-performing schools. Why all this focus on school performance? One major factor has been PL 107-110 No Child Left Behind (NCLB) legislation requiring a higher level of accountability for schools than ever before from a federal standpoint. Schools and School Districts are given a report card each year and States are required to disseminate information on school and district performance to parents each year. With the increase in focus on school level accountability and the ability of the internet to disseminate information with ease, several organizations are beginning to study what variables influence school performance. This paper compares the higher-performing school studies of Just For The Kids (part of the National Center for Educational Accountability), and The Center for Education Policy Applied Research and Evaluation (at the University of Southern Maine) in order to open a discourse on what exactly determines higher-performing and what high schools in Maine truly are models of academic achievement. Let me begin by providing some background information on these organizations as stated on their respective websites.

“Just For The Kids (JFTK) is part of the National Center for Educational Accountability. The center is a collaborative effort of the [Education Commission of the States](#), [The University of Texas at Austin](#), and [Just for the Kids](#) to improve learning through the effective use of school and student data and the identification of best practices. The Just For The Kids School Reports are a tool to help schools identify how they are performing compared to other

schools in the state with similar or more disadvantaged student populations and to learn what the highest-performing schools are doing to achieve academic excellence. These reports are based on information obtained from the state department of education in each state and provide an unbiased, data-based view of a school's academic achievement” (<http://www.just4kids.org>).

“The Center for Education Policy, Applied Research, and Evaluation (CEPARE), in the College of Education and Human Development of the University of Southern Maine, provides assistance to school districts, agencies, organizations, and university faculty by conducting research, evaluation, and policy studies. In addition, CEPARE co-directs the Maine Education Policy Research Institute (MEPRI), an institute jointly funded by the Maine State Legislature and the University of Maine System. This institute was established to conduct studies on Maine education policy and the Maine public education system for the Maine Legislature” (<http://www.usm.maine.edu/cepare/>).

At the request of the Maine state legislature, MEPRI began a study to determine higher-performing, cost-effective schools in Maine. The study utilizes Maine Educational Assessment (MEA) data, Census Data, School-level staffing data, and School Administrative Unit level staffing data.

What is the significance of the “higher-performing” designation?

Providing for education is the responsibility of each State but with American students falling behind their international counterparts and little or no improvement in achievement test scores since the Nation at Risk study in 1983 (Peterson 2003), the federal government has stepped up pressure on the states to improve their schools and align curricula with the national standards. As noted above, NCLB requires that states hold individual schools accountable

for the education of all their students. Schools consistently not meeting Annual Yearly Progress may face dire consequences including closure or relinquishment of control to state or private entities. Parents have increased rights under NCLB including the right in some cases to request a change of school for their child with transportation being the responsibility of the school district. Schools need to improve and NCLB requires that as they initiate improvement plans they use scientifically based practices to improve educational outcomes for their students. The call for these scientifically based practices has led to a surge in research about what makes a school successful and what types of instruction are considered best practices. By examining those schools that are currently higher-performing we can begin to understand what variables are most important to student success, and using this information target interventions and funding in the ways most likely to improve student outcomes in lower-performing schools.

Defining Higher-Performing: Varied Approaches

When beginning a study on higher-performing schools you have to decide what criteria will lead to a higher-performing designation. This will be based on what schools are included in comparison groups and in what content areas you rank the schools relative to their performance on a given measure. JFTK examines performance by comparing each school with consistently high performing schools in the state that serve similar or more challenging student populations. Those schools that have scores within 5% of the highest scores in their pool are considered higher-performing. Thus an opportunity gap of 5% percent or less becomes the higher-performing criterion for JFTK.

CEPARE has a series of 6 criteria that must be met for a school to be considered higher-performing. These criteria require that students in higher-performing schools score better than the state average on the MEA composite scale score, do better than predicted based on student and community variables, and do better than the state average in terms of their disaggregated advantaged and disadvantaged student group scores.

By comparing the resulting list of higher-performing high schools from these two organizations we can begin to better understand how to define high performance and use that information to help improve all schools. Those schools that are determined to be higher performing by both organizations may become models for other schools in the state. Additionally, by looking at which schools make each organization's list we can begin to evaluate the value of each definition of higher-performing and what can be learned from each definition.

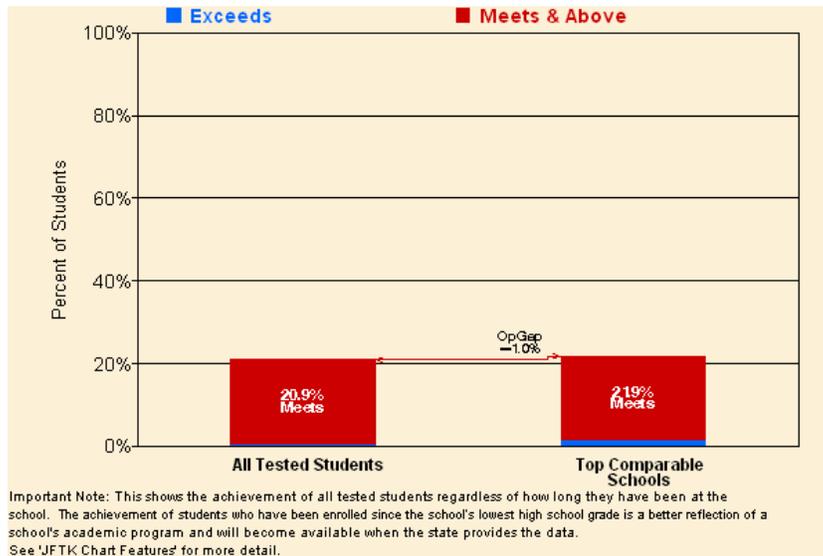
Just For The Kids Higher-Performing

To begin its higher-performing analysis Just For The Kids creates comparable groups of schools for all schools. These groups are formed based on the following requirements.

1. The percent of economically disadvantaged students for the school must be greater than or equal to the selected school or 90%.
2. The grade size must be at least 40% the size of the grade in the selected school.
3. There is at least 40% as many students tested in the grade at the school as are tested in the grade at the selected school.
4. There are at least 10 tested students in the grade.

Each school's scores on the 2003 MEA math and reading assessments are compared to the comparable group in order to determine an opportunity gap for each school. This opportunity gap is defined as a difference between the percentage of the individual school's students who meet or exceed the standard as compared to the weighted average percentage of the 3 top comparable school's students who meet or exceed the standard (see Figure 1). Those schools with less than a 5% opportunity gap are considered to be strong-performers. In essence this creates a norm group for the school and sets a higher-performance criterion of being within 5% of the top three performers in your group.

Figure 1.



CEPARE Higher-Performing

CEPARE looks at higher-performing from a slightly different perspective; we compare each school's 3-year average composite scale scores (average of reading, writing, math & science scores) to the average composite scale scores for all high schools in the state. High-performing schools are those that meet the following criteria:

1. better than state average (by 1/3 standard deviation)
2. better than predicted (by 1/3 standardized deviation)
3. better than state average for advantaged youth (by 1/3 standard deviation)
4. better than state average for disadvantaged youth (by 1/3 standard deviation)

However, since we do not have 3-year averages for criteria 3 & 4 (only two years of data), two additional interim criteria were created. In addition to Ideal criteria 1 & 2, the following criteria must be met.

5. percent of pupils at or above Meets proficiency level is better than state average (by 1/3 standard deviation)
6. percent of pupils at or above Partially Meets proficiency level is better than state average (by 1/3 standard deviation)

Any school that meets either the ideal or the interim criteria will be considered higher performing for purposes of this study.

Who Makes the Lists?

Using the Just For The Kids criterion there are 48 high schools in Maine that are considered higher-performing in either math or reading. Eighteen of those schools are strong-performers in both math and reading (having opportunity gaps of less than 5% in each subject). Twenty-three schools are strong-performers in math only and 7 schools are strong-performers in reading only. Using the CEPARE criterion there are 19 high schools in Maine that are considered higher-performing. Thirteen schools meet ideal and interim criterion, two schools meet ideal criterion only and four meet only the interim criterion.

Table 1. JFTK Higher-Performing High Schools

Subject Area	Number of Schools
Reading and Math	18
Reading Only	7
Math Only	23

Table 2. CEPARE Higher-Performing High Schools

Number of Schools
19

Table 3. Schools Considered Higher-Performing by both CEPARE and JFTK

JFTK Subject Areas and CEPARE Criterion	Number of Schools
Reading & Math	5
Reading or Math	6

Sorting out the lists

As can be seen from the various combinations and numbers of potentially higher-performing schools, determining the “right” higher-performing list is not an easy task. Perhaps, instead of trying to determine which list is right, a better approach would be to determine what is right about each list and what the drawbacks of each list are. With this approach we can try to learn from each definition of higher-performing and have a better understanding of the complexity surrounding such studies. In addition, by pooling the data we may be able to define a *highest-performing* list.

JFTK looks at math and reading as individual measures of performance and allows schools to be recognized for their achievement independently from other curricular areas. Currently, math and reading are the focus of NCLB accountability, but we must remember that science assessments will be required beginning in 2007. At that time it will be important to also recognize schools doing well in science. By breaking performance criteria down to individual subject areas we get a more detailed look at what content areas schools are both succeeding in and struggling in. When compared over time we can begin to evaluate the effectiveness of new curricula or increases in resources aimed at improving a specific subject area. This is important information for every school and district responsible for implementing improvement strategies.

A drawback of looking at each subject area independently is analogous to “missing the forest for the trees.” We want our students to be well rounded in their educational abilities because one who can do the math but fails to be able to express their answer or apply that mathematical process to real-world applications will not succeed. Additionally, using one year of data for such analysis means that the results are influenced by the yearly variation inherent in testing different groups of students. Another drawback of breaking data down to each subject area is the potential for misinterpretation of the resulting lists. For example, it is important to recognize that the number of schools that are strong performers in each subject area is not a measure of performance

between subject areas. While there are 23 schools considered strong-performers in math only and 7 schools considered strong-performers in reading only, reading scores across the state are higher than math scores. The higher number of schools considered strong-performers in math shows that the variance in math scores is less than the variance in reading scores. More schools are within the 5% opportunity gap in math than in reading.

Using three year average composite scores takes a broader approach to defining higher-performing such that higher-performing high schools are those who consistently score higher than the state average both over time and as a composite of all 4 curricular areas tested (math, reading, writing and science). The CEPARE criteria also look for higher performance of all students within the school, requiring that groups both advantaged and disadvantaged students are doing 1/3 of a standard deviation better than the state average of their advantaged and disadvantaged counterparts. In addition, higher-performing schools must do 1/3 of a standard deviation better than predicted. This prediction is based on a regression analysis and the resulting standardized residual for the following variables: composite scale score for 11th graders, composite scale score for 8th graders, percent free or reduced lunch, and percent of the population with a bachelor's degree. Meeting all of these criteria is difficult and the resulting list of higher-performing schools is much shorter than that of JFTK. In a sense, CEPARE raises the bar. What we miss in terms of individual subject area analysis we pick up in our analysis of the scores of advantaged and disadvantaged students. This disaggregation of scores fits with the mandates of NCLB requiring that “no child—regardless of his or her background—is left behind” (U.S. DOE, 2002).

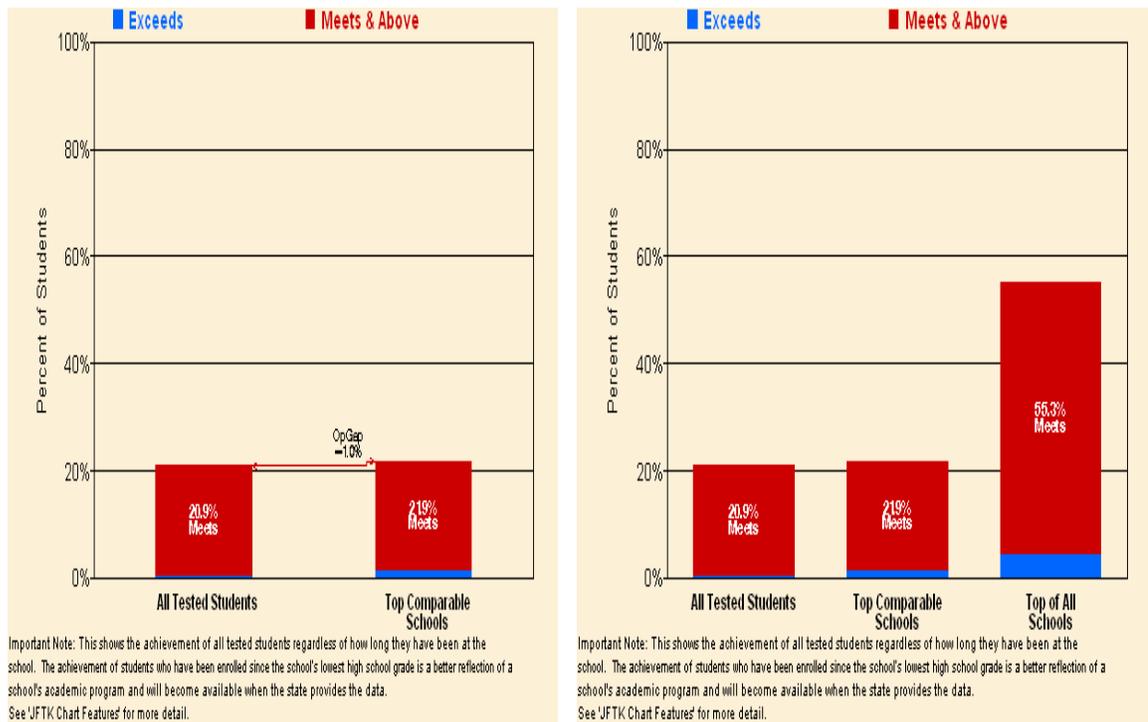
Combining these definitions, or looking at the overlap between the resulting list gives us a list of those schools may be considered the *highest-performing*. These schools are consistently scoring above the state average for *all* of their students, scoring higher than expected, and near the top of their comparable groups.

Knowing where the schools lie may help in determining appropriate higher-performing/lower-performing school relationships. While initial analysis shows that while there may be a higher concentration of higher-performing schools in the southern Maine region, there are higher-performing (by some definition) schools throughout the state. It appears that higher-performing schools are generally located in the more populous portions of various regions throughout the state.

List Discrepancies Explained

To understand how one school may be considered a strong performer in both math and reading yet not meet the CEPARE high-performing criteria it is helpful to look at a specific example. Big school A is in a comparable group of 19 schools, and is within 5% of weighted average of the three top schools in that pool in regard to both math and reading scores. Therefore, it is considered a strong-performer by JFTK. However, when we examine the three-year composite scale score for that school we see a score that is almost a third of a standard deviation below the state average scale score. Big School A had a score of 531.5 while the state average score was 532.4 with a standard deviation of 3.3. In a sense this school only looks like a higher-performing school because the others in its comparison group are doing so poorly. Figure 2 shows how the top comparable schools in Big School A's group compare to the top performers in the state. The composite scale score for Big School A led to a designation of neither higher nor lower performing from CEPARE.

Figure 2.



Lower Performing Schools

By using a similar process CEPARE has also defined a lower-performing list of high schools in Maine. Just For The Kids does not do a lower-performing analysis. CEPARE uses the same objective performance measures to determine what schools in the state are lower-performing. The lower-performing criteria require that groups of both advantaged and disadvantaged students are doing 1/3 of a standard deviation below the state average of their advantaged and disadvantaged counterparts. In addition, lower-performing schools must do 1/3 of a standard deviation lower than predicted. We believe that it is important to identify lower-performing schools in addition to the higher-performing schools. It may motivate those schools to improve and allows for resources to be allocated to those schools that need them most. Creating lists of lower performing schools must be done and reported in sensitive ways that encourage schools to improve and move into discussions about how to improve without being defensive. The list should be seen as identifying those schools

most in need of help. In order to use the lower-performing list in positive ways the measures of performance must be as objective as possible and resources must be provided to designated schools. Each lower-performing school should be supported as it builds on positive aspects within the school. This support may include working with a higher-performing mentor schools to improve achievement.

Target Audience

School level performance reports are part of the public domain and as such are accessed by a variety of different individuals and organizations. Educators, administrators, parents, students and policy makers all have a stake in the outcomes of studies on school performance. With this in mind it is crucial to be clear about the objectives of such studies and the intended audience of each. No one wants to hear that the school they attend, work for, pay for or represent is lower performing. Yet to allow schools to continue to fail their students is in no one's interest. The goals of defining and applying best practices should be clear and the limitations of school performance studies should be clearly presented.

Pairing Similar Schools

If we can pair higher-performing and lower-performing schools in mentorship-model relationships and provide the resources necessary for improvement we can improve achievement outcome for those students in the state who need the most help. By pairing lower-performing schools with higher-performing schools of similar size, economic contexts and geographic regions we show that success is possible for a given school context and we can demonstrate how to achieve that success.

What about the schools in the middle? The question we have to ask ourselves is whether or not average is good enough. I would suggest that it is not. At this point we have a long way to go toward all students meeting grade level benchmarks. Even the highest-performing schools in Maine still have high

percentages of students not meeting the benchmarks. As the lower-performing schools begin to improve there will be a natural shift upward in the state average scores; however we also have to expect more from even the higher-performing schools. There need to be achievement goals and increased expectations set forth for all schools (this relates to NCLB annual yearly progress-AYP). All schools need to focus on closing the achievement gaps between students. There will always be higher and lower performing schools in relation to state averages but hopefully someday, even the relatively lower-performing schools will be highly successful.

Closing Thoughts

Good assessments of school performance, like all good assessments, should follow a multi-source, multi-method assessment model. We have explored two higher-performance school definitions but other definitions may add to our understanding of what a truly high performing school looks like. The key is to understand what each definition brings to the discussion, what commonalities exist between definitions and what the differences are. As we continue our studies here at CEPARE we will be adding the financial aspects of higher performing schools and then focusing on topics such as school climate. We hope this research provides direction for both policy makers and educators as we work to improve educational outcomes for all Maine students.

References:

Peterson, Paul (2003). *Our Schools and Our Future...Are We Still at Risk?* Hoover Institutional Press: Stanford University.

U.S. Department of Education, Office of Elementary and Secondary Education (2002) *No Child Left Behind: A Desktop Reference*. Washington, D.C.

www.just4kids.org

www.usm.maine.edu/cepare