

School Evaluation Services

**STANDARD
& POOR'S**



Identifying Top-Performing High Schools

Analytical Methodology

*Developed for
America's Best High Schools Project
with
U.S. News and World Report*

Revised – December 2009

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Acknowledgments

This method has a number of inspirations. The idea to develop a method to identify top-performing high schools came from discussions between Andrew J. Rotherham, co-founder of **Education Sector**, and Paul Gazzerro, the director of analytical criteria for **School Evaluation Services**, a K-12 research and analysis unit of **Standard & Poor's**. The resulting method has been used to identify "America's Best High Schools" for *U.S. News & World Report*.

These conversations were in part inspired by the "Challenge Index" created by Jay Mathews, an education journalist for the *Washington Post*; this index is currently used by *Newsweek* to rank the "best" high schools in the United States. Rotherham and Sara Mead authored a critique of Mathews' ratings methodology for Education Sector in February 2006, entitled "Challenged Index: Why Newsweek's List of America's 100 Best High Schools Doesn't Make The Grade." In this critique, Rotherham and Mead pointed out that many of the top *Newsweek* high schools did not fare very well on other common measures of high school performance (e.g., proficiency rates on state tests, achievement gaps among student groups, graduation rates, etc.). Mathews responded to this critique with a defense of his method, and a challenge to develop "your own top 100 list" of the best high schools and a clearly-defined method for their selection.

The technical method and underlying principles (and the data) come largely from the work that School Evaluation Services has been doing for several years. The data come from the K-12 free public education data websites <http://nces.ed.gov/ccd/> and www.SchoolDataDirect.org (an online service of the **State Education Data Center** that is operated by the **Council of Chief State School Officers**). The method is, to a great extent, an outgrowth of several different School Evaluation Services projects, including analyses of school districts that significantly outperform statistical expectations, schools that have significantly narrowed their achievement gaps, and how the performance of states on the "Nation's Report Card" might meaningfully be compared.

Finally, a special note of recognition to Tamara A. Hoffman and Michael R. Jaros, School Evaluation Services analysts, for the considerable time and effort invested in testing, refining, and ultimately applying this methodology to the analysis of approximately 21,000 high schools in 48 states, plus the District of Columbia. Last, but certainly not least, a note of gratitude to our patient and unfailing partners in this project, the staff at *U.S. News and World Report*, who demonstrated flexibility and grace throughout this analytical undertaking.

Method Overview

There have been many “best high school” lists. The strength of any such list is in the method used to create it – which metrics are used, and the specific analytical methods used to evaluate them. The method presented here for identifying top-performing high schools differs from most previous efforts due in part to the metrics it requires, but as importantly, due to the manner in which it uses these metrics to evaluate schools.

As noted in the **Acknowledgements** section, this top-performing high schools selection method has been developed in response to the Challenge Index used by Jay Mathews to rank the nation’s “best” high schools for *Newsweek*. The Challenge Index relies on Advanced Placement (AP) and International Baccalaureate (IB) exam data, self-reported by high schools. One of the benefits of the Challenge Index is its simplicity, as illustrated in the formula below.

The Challenge Index	=	$\frac{\text{The number of AP/IB exams taken}}{\text{The number of graduating seniors}}$
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Benefits of the Challenge Index

The Challenge Index has the benefit of being very simple to understand, and thus an easy tool to use to motivate improvement. If a school wants to improve its standing on this measure, it must get its students to take more Advanced Placement and/or International Baccalaureate¹ exams – no more, no less.

Limitations of the Challenge Index

However, it is the narrowness associated with this simplicity that has generated the most criticism of the Challenge Index. High schools have much broader missions than merely exposing students to college-level material. Many experts now argue that college-level skills are becoming the new minimum standard for success in the modern economy, and yet the reality is that too few students are prepared to meet these standards to use them as the only barometer of success. Doing so would provide schools with an incentive to focus on their best students at the expense of their more difficult-to-educate students.

Even as a measure of college readiness, the Challenge Index has limitations. Its focus on *tests* rather than *test takers* essentially muddles the distinction between getting as many students access to college-level curricula as possible (breadth of access) and getting students to take as many college-level offerings and tests as possible (depth of access). Both are important, but as constructed, the Challenge Index allows schools to specialize in either, rather than requiring them to focus on both. The biggest concern would be schools that have a small group of students who take a considerable number of AP/IB exams. Such schools would perform just as well using the Challenge Index as schools that manage to provide a high percentage of their students with

¹ Advanced Placement (AP) and International Baccalaureate are two different programs that provide high school students with rigorous coursework. While both are seen as offering similar levels of rigor, they are not strictly-speaking, comparable to one another, as each program focuses on its own curriculum. Nonetheless, the two programs are often viewed as equivalent to one another when viewed as measures of college readiness.

AP/IB coursework, but only one course to each student. As important as depth of participation is, the more important educational policy goal is breadth – providing as many students as possible with access to quality college-level material.

Finally, the Challenge Index ignores the question of quality, because simply taking a test constitutes “good” performance.² This creates an incentive for schools to try and improve their ranking by offering more AP/IB classes, and pushing more students to take the exams, regardless of whether they are prepared to succeed in them. It seems fair to expect top-performing high schools not only provide students with exposure to college-level material, but should also ensure that they demonstrate the ability to master this material in order to be prepared for college. Thus, it is important to consider the quality of the exposure that students are getting to college-level material. The best way to do this is by examining whether students can demonstrate that they have command of the material by achieving “passing” scores on the exams.³

An Alternative: The Top-Performing High Schools Method

The method for identifying top-performing high schools presented here is intended to ensure that schools are evaluated on the performance of all students, even the least advantaged, with the ultimate goal that all students are prepared to attempt –and to master – college-level material before graduating. Thus, this method sacrifices the simplicity of the Challenge Index in favor of a multi-step selection process that more comprehensively assesses high schools on outcome measures that matter to the success of all students, both now and as schools continue to improve.

Top-Performing High Schools Method

The Top-Performing High Schools method was conceived with a **core principle** in mind – that the best schools serve all of their students well, and produce measurable academic outcomes that support this mission. Specifically, this method puts forth the following as essential characteristics of top-performing high schools:

- 1) the best high schools serve **all students** well by achieving **performance levels in the core subjects of reading and math on state accountability tests** that **exceed statistical expectations** given their relative levels of student poverty;
- 2) the best high schools serve the **least advantaged student groups** well by producing **proficiency rates on state tests** for black, Hispanic, and economically disadvantaged students that **exceed state averages for these groups**;
- 3) the best high schools provide students with **access to a college-level curriculum**, measured through **participation and performance on AP and/or IB tests**.

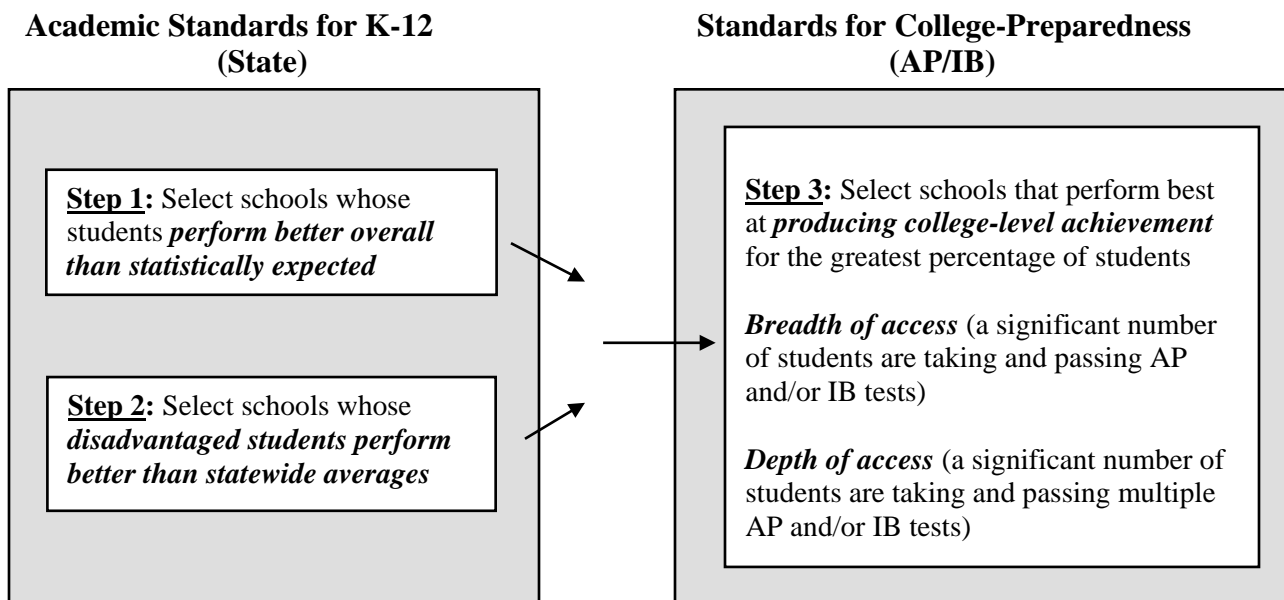
² Mathews has recently acknowledged that some schools had started offering AP or IB on a large scale despite the prospect of having few students that were truly capable of earning passing scores. He has decided to segregate schools with test passing rates of less than 10% onto a separate list of “catching up schools.”

³ Generally speaking, colleges treat AP scores of 3 or higher (out of a possible 5) as worthy of college credit. Similarly, colleges treat IB scores of 4 or higher (out of 7) as qualifying for college credit. It is true that some elite colleges require even higher scores to award course credits, but the typical college accepts these minimum scores of 3 (AP) and 4 (IB) as sufficient.

Top-Performing High Schools Method: Step-by-Step Process

The multi-step method for identifying top-performing high schools that meet all of these criteria is illustrated below. The first two filters ensure that high schools serve all students well, using performance on *state accountability tests* as the key evaluative measures. Schools that make it through these state test filters are considered worthy of honorable mention, and are then eligible to be evaluated on their college readiness performance to determine if they are among the nation's top-performing high schools.

The high schools that have met the criteria for the two state test filters are then evaluated on their students' college readiness, using performance on *Advanced Placement and/or International Baccalaureate exams* as the key evaluative measures. Those schools that meet this third criterion as well as the first two are considered to be among the top-performing high schools in the nation.



High Schools Meriting Recognition: Gold, Silver, and Bronze Distinctions

The process outlined above is conducted on a state-by-state basis, with resulting lists of top-performing high schools that meet all three criteria by state. Such schools are automatically awarded *silver* medal status by *U.S. News & World Report* on the basis of meeting all three performance criteria, are recognized as the top-performing high schools, and are considered finalists for *gold* medal status – inclusion on the list of the top 100 high schools in the nation.

To determine which schools are awarded the *gold* medal status, all of the top-performing high schools across the states are then compared to one another by ranking them on their college readiness index. The top 100 schools are awarded *gold* medal status by *U.S. News & World Report* and are publicly named as such in the magazine. In the case of ties among *gold* medal status high schools, a secondary ranking on the average number of AP and/or IB exams taken by students serves as the tie-breaker, thus ensuring that top schools provide the greatest depth of access to college-level material to as many of their students as possible. All schools that meet the

three criteria, but do not qualify to be among the top 100 *gold* medal high schools will be recognized within their states as *silver* medal top-performing high schools.

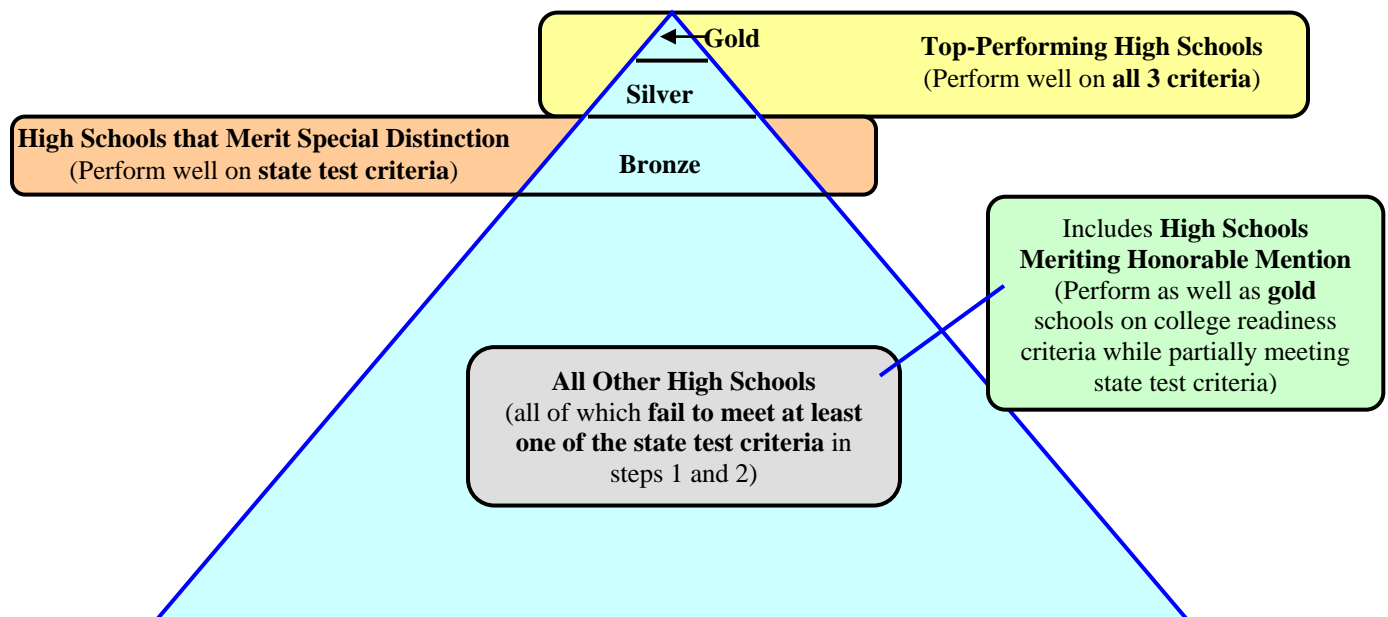
Finally, high schools that meet the first two state test-based criteria but do not meet the third college-focused filter are still considered to merit special distinction. Such schools are awarded *bronze* medal status by *U.S. News & World Report* signifying that their performance is commendable in its own right, despite not qualifying them for inclusion on the list of *silver* and *gold* medal top-performing high schools.

High Schools Meriting Honorable Mention

The first two state test-based criteria are quite rigorous, and there are many schools that are in the opposite situation of the *bronze* medal school – they perform very well on the third college-focused criterion, while only partially meeting the first two criteria. Those high schools that perform as well as *gold* medal schools by providing a majority of their students with access to high quality college-level coursework, while not quite meeting the state test-based filters, will be recognized as meriting *honorable mention*.

These status distinctions are illustrated below in the **High School Performance Pyramid**, which categorizes all schools analyzed nationally.

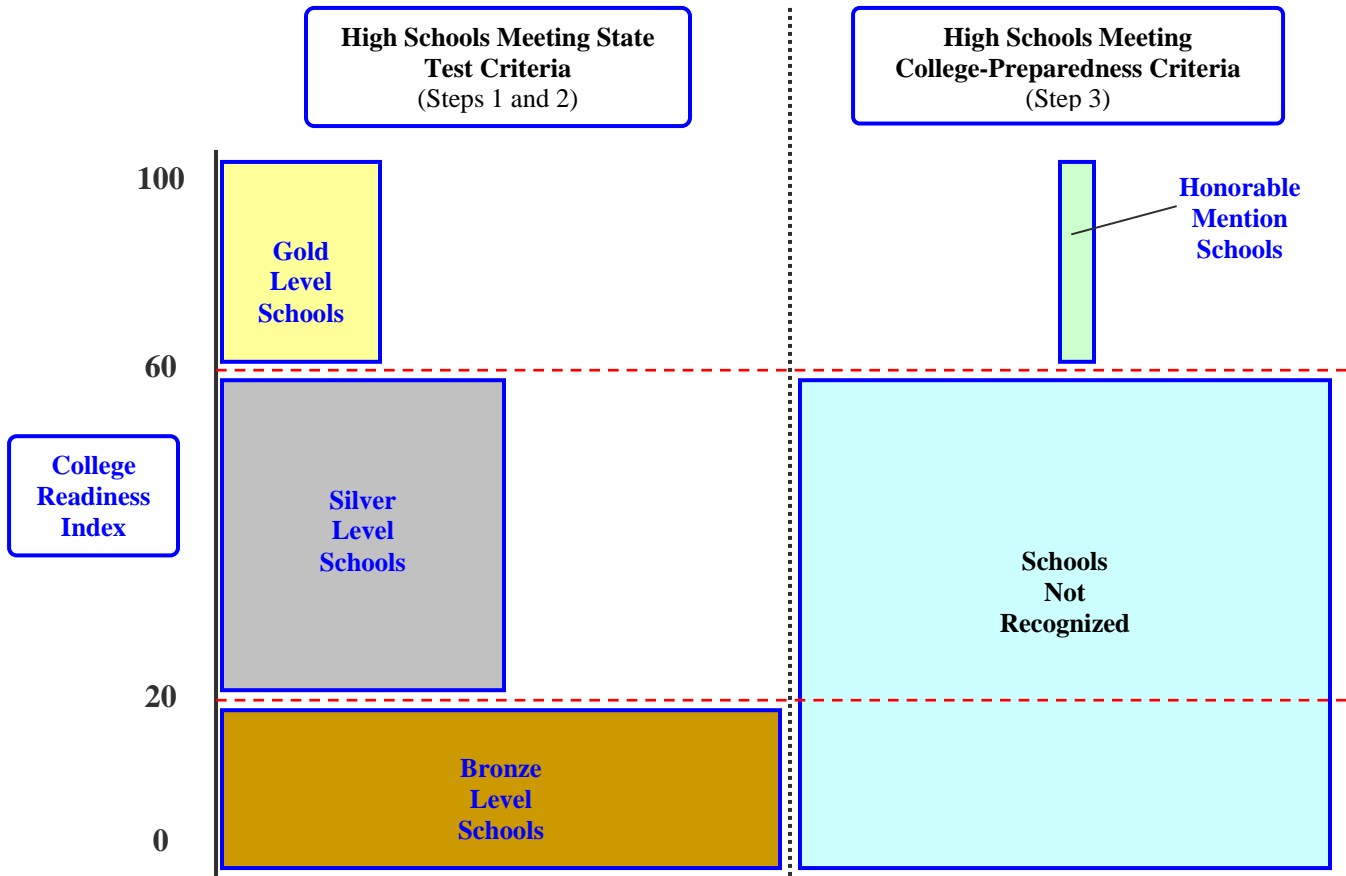
High School Performance Pyramid



Standard & Poor's School Evaluation Services

America's Best High Schools Methodology

When viewed from the perspective of college readiness (i.e., the degree to which schools are offering college-level coursework), the high school recognition levels can be illustrated as follows:



The specific indicators and criteria selection cuts utilized to determine high school status are explained in the step-by-step process details that follow, with additional details pertaining to individual states highlighted in the **Technical Appendix** companion to this paper.

Step-by-Step Process Details: Indicators and Criteria

Step 1	Identify Schools that Perform Better than Statistically Expected on State Accountability Tests
<ul style="list-style-type: none"> ▪ Calculate a school-wide aggregate index for performance for high schools⁴ on the state high school reading/English language arts (ELA) and math test(s) for the most recent year of data available for all states. Calculate (if necessary) the percentage of students enrolled that are economically disadvantaged. ▪ Using techniques based on linear regression analysis, determine the expected statistical relationship between student poverty and student performance, drawing a band around the expected performance zone to define the upper and lower boundaries of expected performance (the performance zone is set to +/-1 standard deviation of the residual values).⁵ ▪ Select only the high schools that perform at or above this boundary of one standard deviation, and eliminate all other high schools from further consideration.⁶ 	

Metrics Used

State Test Performance Index

This metric is an aggregated performance index that credits schools for helping students to reach the highest levels of student performance on the state reading and math accountability tests, not simply for reaching the *proficient* standard that has been set as the minimum standard under NCLB. Tests scoring at each performance level are awarded points, with higher performance levels valued more than the lower levels, and the lowest level (referred to by states as *failing* or *below basic*) not valued at all, in order to create an index that rewards schools for moving students up the ladder from the lowest to the highest performance levels. The index is expressed as a percentage of total possible points, based on the point values listed in the following table, which assumes the typical four-level set of performance standards envisioned by NCLB.

⁴ For the purposes of this project, **high schools** have been defined as schools that enroll at least 15 students in the 12th grade, as such schools can reasonably be expected to *graduate* students from the K-12 education system. There may be schools with AP programs that do not serve grade 12 that are nonetheless commonly viewed by their community as high schools that have been excluded from consideration using this method.

⁵ A more detailed explanation of this method appears in the **Important Consideration** section. In addition, a technical paper further explaining the statistical method has been published separately.

⁶ Schools that do not meet this threshold are still considered for *honorable mention* status.

<u>Common Performance Levels corresponding to:</u>	<u>Index Points</u>
Below Basic/Failing	0
Approaching the Standard	0.5
Meeting the Standard	1.0
Exceeding the Standard	1.5
Exemplary/Outstanding ⁷	2.0

The index treats the *proficient* level as worth 1.0 points. Each level above proficient receives increments of 0.5 additional points, while the level below, if considered *basic* or *approaching the standard*, receives 0.5 points. The total number of possible points ranges from 0 to 200, but varies by state based on the number of levels that the state uses for its performance standards. The **Technical Appendix** companion to this paper lists the names of the specific tests used in this analysis, as well as the grades in which they are administered, and their respective number of performance levels.⁸

Economically Disadvantaged Students Enrolled (% of Total Enrollment)²

This measure reflects the percentage of students enrolled in the school that are living in poverty, as defined by the state (where available) or the federal government. Typically, these students meet the federal criteria for receiving free or reduced-price lunches, but some states have enhanced their definitions to capture a broader population of students in need, particularly in high school, where a perceived social stigma of receiving free or discounted lunches often motivates students not to enroll in the program, which in turn causes this indicator to be artificially understated.

Risk-adjusted Performance Index

This measure provides an indicator of the “distance” from statistically expected performance (expressed in units of standard deviation) based on a linear regression of the reading and

⁷ While most states conform to a four-level scoring system, a few states have five levels, and some just three. Of those with five levels, there are two different approaches. A few states use the additional level to further delineate outstanding or exemplary performance, while some use the extra level to make further distinctions among the lowest-performing students; for the latter group of states, the two lowest levels (both not yet approaching the standard) would receive zero points.

⁸ For a few states, these performance level data were not available, and a straight proficiency rate (i.e., the percentage of students that scored at proficient or above) was substituted for the performance index. In one state, a state-designed performance index was substituted for either of these approaches. These substitutions are detailed in the **Technical Appendix** companion to this paper.

⁹ For a handful of states, these data were not available, and the percentage of students *tested* that are economically disadvantaged was substituted as a proxy for the student poverty rate. Further, in many states, there were schools that reported “n.a.” for their poverty rate; these schools were evaluated under step 1 as if they reported no students were economically disadvantaged (e.g., 0%). For more information about which states, see the companion **Technical Appendix** companion to this paper.

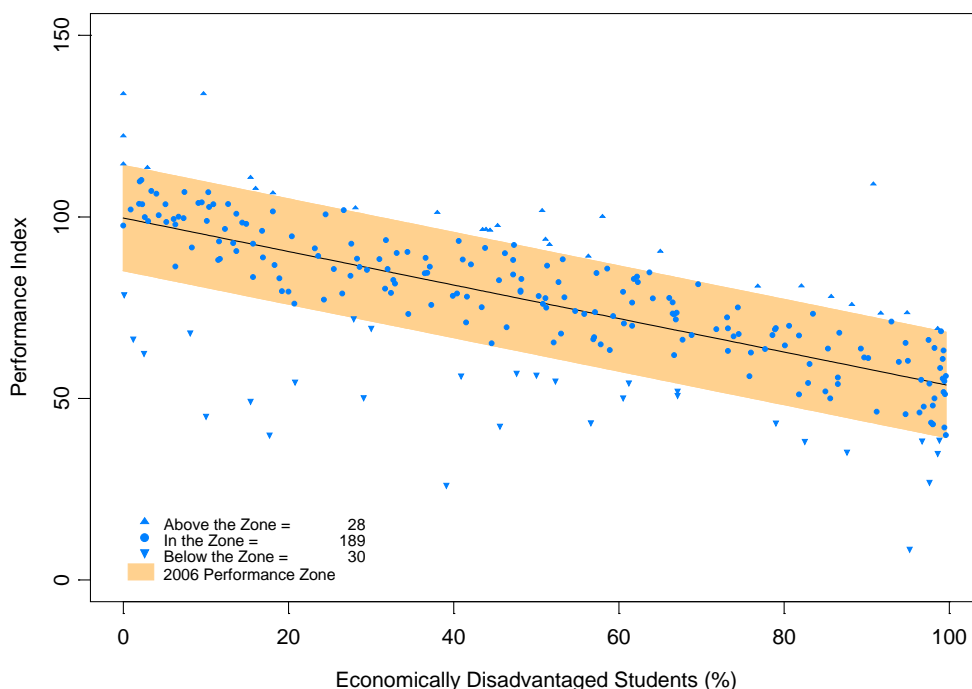
math performance index on the percentage of student enrollment that is considered to be economically disadvantaged. Values of one or greater indicate that the school has performed better than statistical expectations, with a higher value indicating that a school has more significantly outperformed expectations than a school with a lower index value.

Important Consideration: Why Evaluate Schools on “Risk-Adjusted Performance”?

The following scatterplot illustrates the relationship between the state test performance index and the percent of economically disadvantaged students enrolled in a fictional state. The actual scatterplots vary by state, but in all cases, the relationship between performance and poverty is negative and the correlation is significant. In other words, one might statistically expect that, all else being equal, a high school with high student poverty will achieve a lower performance index value than a high school with low student poverty.

That said, it is important not to confuse correlation with causation. Indeed, the scatterplot also reveals that this relationship is not immutable – there is a wide range of performance for any given level of student poverty. This point underscores an important distinction for the lay reader: statistical expectations are not to be confused with policy expectations. In other words, the fact that economically disadvantaged students score lower, on average, than non-disadvantaged students does not mean that these students should have lower expectations placed on them. Rather, this relationship simply indicates that for most *but not all* schools, the challenge of educating disadvantaged students has not yet been overcome. Evaluating high schools by taking the socioeconomic circumstances of their students into account levels the playing field among schools, effectively assigning equivalent “degrees of difficulty” to each school’s performance through the risk-adjusted performance index.

Illustrative Example: State X High Schools
Performance Index Zone
2005-06



In the preceding illustrative example, 28 high schools perform better than statistically expected (i.e., **above** the shaded **performance zone** of plus-or-minus one standard deviation around the regression line), 189 perform as expected (i.e., **within** the **performance zone**), and 30 perform below expectations (i.e., **below** the **performance zone**), given their relative levels of student poverty. Using this methodology, the 28 schools that outperform expectations would be selected as meeting the step 1 criteria for inclusion as top performers. In addition, any high schools that do not report their student poverty rates would be evaluated by comparing their performance to that of schools with 0% student poverty.¹⁰ Finally, high schools that perform above the regression line (but within the performance zone) would be considered for **honorable mention** status, provided that they also meet the step three criterion explained later in this paper. The regression plots for each state analyzed can be found in the **Technical Appendix** companion to this paper.

Illustrative Example of Step 1 Criteria in Practice

For illustrative purposes, the following table shows the key indicators and criteria for selection through step 1 for high schools within a fictitious state that has 247 high schools. The table is sorted on the **risk-adjusted performance index**, and all values less than 1.0 have been eliminated from further consideration. After **step 1**, only 28 of this state's 247 high schools have performed well enough to continue on to **step 2**.

¹⁰ In some states, there are no schools that report 0% student poverty, but the performance data can be extrapolated based on the regression line. Thus, the performance index values for schools that do not report student poverty are compared to the imputed value at the y-axis intercept of the regression line. See the **Technical Appendix** for more information for each state.

Standard & Poor's School Evaluation Services

America's Best High Schools Methodology

School Name	Grades Served	State Test Performance Index	% Economically Disadvantaged Students Enrolled	S&P Risk-Adjusted Performance Index
Dixon	9-12	119.3	37.6	3.24
Murphy	9-12	120.2	28.7	2.95
Roswell	9-12	116.9	33.1	2.92
Booth	9-12	93.8	59.4	2.53
Washington	9-12	106.3	32.1	2.24
Brown	9-12	84.0	60.2	1.97
Jackson	9-12	107.1	23.8	1.97
Hall	9-12	107.0	21.5	1.87
Swift	9-12	112.6	10.4	1.78
Johnson	9-12	113.1	1.1	1.46
Jefferson	9-12	112.2	0.5	1.38
Robertson	9-12	110.1	2.2	1.32
Jencks	9-12	107.2	6.3	1.30
Ferguson	9-12	108.3	4.4	1.29
Berks	8-12	109.5	2.3	1.28
Lincoln	9-12	110.1	0.0	1.23
Topeka	7-12	109.9	0.0	1.22
Madison	9-12	109.1	1.2	1.21
Chambliss	9-12	109.7	0.0	1.21
Chambers	9-12	109.3	0.0	1.18
Wallace	6-12	108.6	1.1	1.18
Cleveland	9-12	109.0	0.0	1.16
Wilkes	9-12	103.2	8.6	1.14
Angel	9-12	104.4	6.7	1.14
Jones	9-12	104.0	6.4	1.11
Watson	9-12	101.5	8.6	1.04
Kingston	7-12	98.5	11.2	1.02
Mason	9-12	105.0	2.6	1.02
Remaining Schools		----- ELIMINATED -----		less than 1

In this illustrative example, it appears that high schools from across the continuum of student poverty have been selected. The actual distribution of schools will depend on the data and the statistical relationships in each state, but this illustration is generally representative of most states; the high schools that meet these criteria tend to exhibit a wide range of student poverty and performance. Thus, there is not a particular “profile” of a successful high school that meets these criteria.

Step 2	Identify Schools that Perform Better than Average for their Least Advantaged Students
	<ul style="list-style-type: none">▪ Determine the significant student subgroups in each of the high schools thus far identified (the eligible subgroups are the three most common disadvantaged student subgroups nationwide – economically disadvantaged students, black/African-American students, and Hispanic/Latino students).▪ Calculate a combined aggregate school-wide state accountability test reading and math proficiency rate (RaMP) for these disadvantaged student groups.▪ Compare these aggregates to the state average for these groups.▪ Select only those high schools that perform better than the state average, and eliminate all other high schools from further consideration.¹¹

Metrics Used

Disadvantaged Students State Test Proficiency Rate

This metric reflects the percentage of state accountability tests in reading and math taken by students from the three major disadvantaged student groups (black, Hispanic, and economically disadvantaged students) that met (or exceeded) the state's standards for proficiency. This is an aggregate proficiency rate for the school's least advantaged students. The index weights each of the three student groups by their relative size (i.e., number of students tested) to create a single proficiency rate for these students. This index is then compared to the state average for high schools, with the differential defined as the **disadvantaged students proficiency gap differential**.

Disadvantaged Students Proficiency Gap Differential

This metric reflects the percentage differential between the school's proficiency rate for disadvantaged students and the state average for the same student groups. Values greater than zero indicate that the school has performed better than the state average among its least advantaged students.

¹¹ Schools that come close but fail to meet this criterion are still considered for *honorable mention* status.

Non-disadvantaged Students State Test Proficiency Rate

This metric reflects the percentage of state accountability tests in reading and math taken by students from the most commonly considered non-disadvantaged student groups (white and, if available, non-economically disadvantaged students) that meet or exceed the state's proficiency standard. This is an aggregate proficiency rate for the school's least disadvantaged students. The index weights each of the student groups by its relative size (i.e., number of students tested) to create a single proficiency rate for these students.

Current State Test Achievement Gap

This metric reflects the difference between the schoolwide aggregate proficiency rates achieved by non-disadvantaged and disadvantaged students. This indicator is provided as additional contextual information to focus special attention on the issue of achievement gaps, but is not used to select top-performing high schools.

Important Consideration: Choosing the Statewide Average as the Threshold for Selection

The high schools that meet the criteria for step 1 have already demonstrated that they perform well for the majority of their students, given the challenges they face. The purpose of the **step 2** criteria is to ensure that none of the high schools selected as top performers are significantly under-serving their least advantaged students (i.e., to ensure that they are not "left behind"). Thus, the criterion used in **step 2** sets a minimum standard that the least advantaged students must achieve in order for their schools to be selected.

It is important to recognize that this standard is not only a relative one, but admittedly a relatively low standard as well. To be selected, these schools' disadvantaged subgroups must exceed state averages for students like themselves, not for all students statewide. The reason for this deliberate choice is that the filter is intended to screen out schools that are obviously under-serving their least advantaged students, rather than to screen in only the highest-performing schools for these student groups.

The question to ask is why this lower standard is acceptable. The reason has to do with issues of fairness in evaluating the schools. For many top-performing high schools, particularly those in the suburbs, ethnic and income diversity simply does not exist, due to local housing circumstances. As a result, many schools will necessarily be exempted from the criteria in **step 2** due to the *de facto* segregation of their student body; they do not have significant numbers of ethnic minorities or low-income children. Setting the minimum standard for **step 2** any higher would place even greater burden on diverse and "minority majority" high schools. This is not to say that it is sufficient to have disadvantaged students performing at a lower standard; in fact, the data will include a measure of the in-school achievement gap between disadvantaged students and their non-disadvantaged peers to ensure that this critical area for improvement receives attention even as these schools are recognized.

Illustrative Example of Step 2 Criteria in Practice

Starting from the list of 28 eligible schools identified through **step 1**, the following table provides the key performance indicators and criteria for selection through **step 2**.

Standard & Poor's School Evaluation Services

America's Best High Schools Methodology

The table is sorted on the **disadvantaged students proficiency gap differential**, and all high schools with values less than 0 have been eliminated from further consideration. Note that the six schools with insufficient numbers of minority and low-income students are *not* eliminated, as they cannot be fairly evaluated on this criterion. In this example, 23 of the 28 high schools selected through **step 1** are still eligible after **step 2** for consideration under **step 3**.

School Name	Grades Served	Disadvantaged Students State Test Proficiency Rate	Disadvantaged Students Proficiency Gap Differential	Non-disadvantaged Students State Test Proficiency Rate	Current State Test Achievement Gap
Murphy	9-12	79.5	24.7	84.1	4.6
Roswell	9-12	75.8	21.0	64.1	-11.7
Swift	9-12	73.1	18.3	75.8	2.7
Topeka	7-12	72.7	17.9	n.a.	n.a.
Wallace	6-12	71.4	16.6	90.1	18.7
Washington	9-12	70.7	15.9	75.8	5.1
Wilkes	9-12	70.3	15.5	81.2	10.9
Dixon	9-12	67.8	13.0	80.4	12.6
Hall	9-12	65.4	10.6	67.8	2.4
Mason	9-12	65.3	10.5	n.a.	n.a.
Lincoln	9-12	65.1	10.3	75.4	10.3
Jones	9-12	63.8	9.0	89.7	25.9
Johnson	9-12	63.6	8.8	84.1	15.6
Jefferson	9-12	62.9	8.1	64.1	-2.6
Cleveland	9-12	59.8	5.0	75.8	10.9
Robertson	9-12	59.7	4.9	n.a.	n.a.
Angel	9-12	59.6	4.8	70.4	10.8
Kingston	7-12	n.a.	n.a.	86.8	n.a.
Brown	9-12	n.a.	n.a.	98.8	n.a.
Booth	9-12	n.a.	n.a.	60.1	n.a.
Ferguson	9-12	n.a.	n.a.	n.a.	n.a.
Jencks	9-12	n.a.	n.a.	55.3	n.a.
Watson	9-12	n.a.	n.a.	61.5	n.a.
--- ELIMINATED ---			less than 0		
Jackson	9-12	54.1	-0.7	95.7	41.6
Chambliss	9-12	53.6	-1.2	59.7	6.1
Berks	8-12	52.7	-2.1	74.9	22.2
Chambers	9-12	49.7	-5.1	64.7	15.0
Madison	8-12	36.5	-18.3	58.4	21.9

Step 3	Identify Schools that Perform Best in Providing Students with Access to Challenging College-Level Coursework
<ul style="list-style-type: none"> ▪ Calculate a schoolwide AP and/or IB participation rate. Calculate a quality-adjusted version of this participation rate, limited to students that <i>not only took, but also passed at least one</i> AP or IB exam during high school. ▪ Calculate the college readiness index, weighting the index 75% on the quality-adjusted participation rate, and 25% on the unadjusted participation rate. For schools with both AP and IB participation, calculate a separate CRI for each program (CRI-AP, CRI-IB). ▪ For schools with both AP and IB participation, use the college readiness index for the larger program (i.e., program with more test takers). ▪ Select high schools that have a college readiness index value of 20 or better. Eliminate all high schools that do not have necessary data (i.e., do not participate in AP or IB), or have values below 20. These schools that do not meet the selection criteria are awarded the bronze medal of distinction for meeting the first two, state test-based criteria. ▪ Rank the remaining high schools on the combined college readiness index value. The top 100 high schools based on this index are awarded gold medals, while the remaining top-performing schools that meet all three performance criteria are awarded silver medals of distinction. 	

Metrics Used

AP/IB Participation (%)

This indicator reflects the percentage of 12th graders that took at least one AP or IB exam at some point during high school (number of students tested divided by number of 12th graders enrolled).

Quality-Adjusted AP/IB Participation (%)

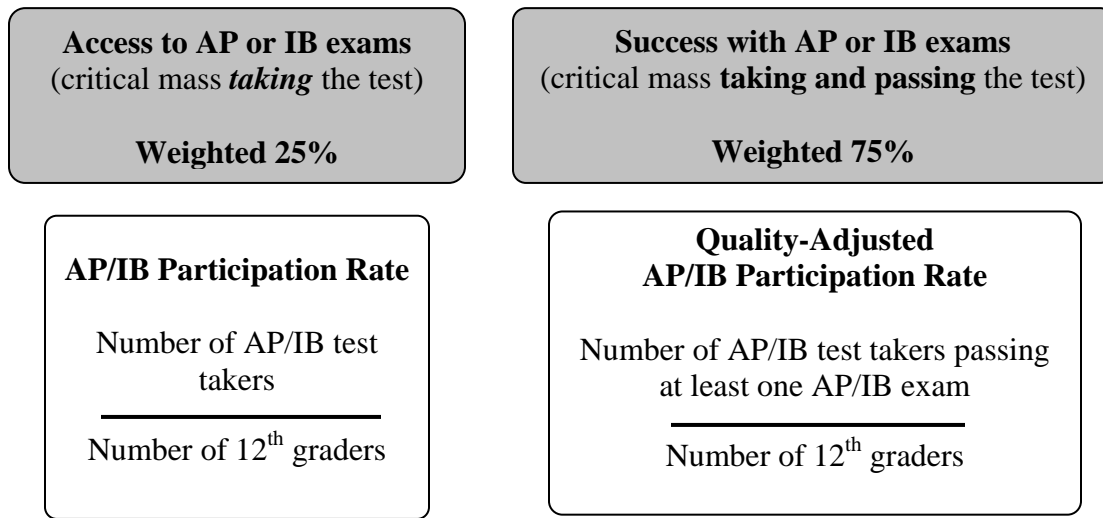
This metric reflects the percentage of 12th graders that took, and “passed” (received “passing” scores of 3 or higher on AP exam, or 4 or higher on IB exam) at least one AP/IB exam at some point during high school (number of students tested that received at least one passing score on an AP/IB exam divided by number of 12th graders enrolled).

College Readiness Index

This index measures the degree to which a school's students are exposed to, and master, some college-level material (a weighted average of AP/IB participation and the quality-adjusted AP/IB participation rates, with 75% of the weight placed on the quality-adjusted rate, and

25% placed on the simple rate). Only values greater than 20 meet the criteria for selection. The *bronze* medal high schools have values less than 20, or do not offer AP/IB, but meet the other two criteria based on performance on state tests. The *gold* medal high schools are simply the top 100 high schools meeting the criteria, ranked using this index, with *silver* medal high schools also meeting the criteria, but not ranking within the top 100 nationwide.

College Readiness Index



College Readiness Index – Schools offering both AP and IB

In schools where both AP and IB programs are offered, the CRI value is calculated for the program with more participants within the school. If the number of test takers for AP exceeds the number of test takers for IB, then the CRI calculated with AP data will be used. If the number of test takers for IB exceeds the number of test takers for AP, then the CRI calculated with IB data will be used. This approach ensures that all schools are compared based on the largest available measure of the breadth of their college-level coursework offerings. This does not mean that both programs are not valuable; rather, that having both does not result in a lower CRI than having just one program.¹²

¹² It is worth mentioning that for schools with both AP and IB programs, there may be some students who take a test in one program but not in the other. The AP and IB testing programs are completely separate and there is no simple way to link them to determine the degree to which students are participating in both programs. Thus, the CRIs for these schools are likely to understate the true breadth of access to college-level coursework experienced by their students.

Exams Per Test Taker

This metric measures the depth of AP/IB participation (the degree to which a school's students are exposed to more than one AP/IB subject), provided for additional context (the number of exams taken divided by the number of test takers, equals the average number of exams per test taker).

Quality-Adjusted Exams Per Test Taker

This is a quality-adjusted version of the preceding indicator, focusing solely on the number of exams that receive passing scores and the students that took them (for AP: the number of AP exams scoring 3 or above divided by the number of students scoring 3 or above on at least one AP exam; for IB: the number of IB exams scoring 4 or higher divided by the number of students scoring 4 or higher on at least one IB exam). It is also provided for additional contextual value, and used as a secondary ranking for the *gold* medal high schools, serving as a “tie-breaker” for schools with identical college readiness index values. For schools that offer both AP and IB courses, a combined indicator is calculated using the same weighting process outlined for the CRI as previously detailed.

Important Consideration: Choosing the Data and the Threshold for Selection

This step requires that schools offer AP or IB programs, and that they test approximately 20% of their seniors at some point during high school at least once, with the added stipulation that these students must also pass at least one exam during this time. Merely being exposed to the coursework and taking the exam is not sufficient. The data have been obtained from the **College Board** (AP program data) and the **International Baccalaureate Organization** (IB program data), which have constructed cohorts of students who were in 12th grade in the year being analyzed¹³ (i.e. were expected to graduate from high school during this academic year). This provides a more appropriate measure to compare to enrollment than the number of exams taken within a given testing period, which combines the experiences of students in grades 9-12 at a single point in time. In addition, this dataset allows the determination of how many students have taken and passed at least one AP/IB exam during high school, not merely how many exams have been taken. This serves as an important measure of whether the school is delivering a high quality college-level curriculum to participating students.

Admittedly, there are some limitations in the ability to use this methodology to definitively measure college readiness in high schools. The first is its reliance on AP and IB as the sole indicators of college-level material in high schools. While AP is by far the most widely used college-level program in the country, and IB has experienced rapid growth over the past several years, there are hundreds of schools that offer dual enrollment opportunities at local colleges and universities instead of, or in some cases in addition to, these programs. Unfortunately, there are at best limited and uneven data available from state to state on dual enrollment programs, and research studies have found that the quality of such locally-based programs varies widely from school to school. While we will continue to look for ways to gather and incorporate data from other programs into future versions of the top-performing high schools analysis, these schools have not been excluded from consideration. Rather, they can be found among the more than

¹³ For this third annual list of *America's Best High Schools*, these data are for the 2007-08 school year.

1,000 high schools that have been designated worthy of special distinction (the *bronze* medal high schools) due to meeting both of the state test criteria outlined in **steps 1** and **2**. Any high school offering dual enrollment that has not been recognized with *bronze* status would not have made the top-performing high schools list, even if its dual enrollment data had been incorporated into **step 3**.

Finally, it is worth considering the choice of 20% as the minimum criteria for selection as a top-performing high school. Admittedly an arbitrary cut, the value of 20 represents approximately one-fifth of a high school's students gaining exposure to (and demonstrating some degree of mastery of) at least one AP/IB subject during their years in high school. This minimum has been deemed to represent a "critical mass" of students gaining access to college-level coursework. While lower or higher thresholds could be debated, this one appears reasonable. Furthermore, the national *gold* medal distinction does in effect result from a higher cutoff, although it is not determined as a specific value, but rather as the performance achieved by the high school with the 100th highest value. For the initial year of analysis, this value was approximately 58.7, but for this second year of analysis, this value has increased to approximately 61.1, meaning that the bar for *gold* medal status has gotten higher since the initial year.

Illustrative Example of Step 3 Criteria in Practice

The final performance screen (**step 3**) includes the 23 high schools that met the criteria of **steps 1** and **2**. The following table provides the key performance indicators and criteria for selection through **step 3**.

The table is sorted on the college readiness index, and all high schools with values less than 20 have been eliminated from further consideration, receiving *bronze* medal status. After **step 3**, there are 14 remaining high schools of the 28 identified through **step 1** – these are the state's top-performing high schools, and are eligible to be ranked nationally to determine if they fall within the top 100 *gold* medal schools.

Standard & Poor's School Evaluation Services

America's Best High Schools Methodology

School Name	Grades Served	S&P College-Readiness Index	Quality-Adjusted AP Participation Rate (%)	AP Participation Rate (%)	Quality-Adjusted Exams Per Test Taker	Exams Per Test Taker
Murphy	9-12	79.3	78.2	82.6	3.1	3.0
Dixon	9-12	76.0	73.5	83.6	3.0	2.9
Hall	9-12	74.8	72.5	81.8	2.7	2.6
Wallace	6-12	68.1	65.5	75.8	4.5	4.2
Topeka	9-12	67.7	65.8	73.3	3.5	3.2
Swift	9-12	55.8	51.3	69.3	2.5	2.2
Roswell	9-12	53.3	51.9	57.4	4.8	4.4
Mason	9-12	52.2	49.4	60.6	2.1	2.0
Lincoln	9-12	51.1	41.5	80.0	2.9	2.5
Kingston	7-12	50.7	46.8	62.4	3.5	3.6
Washington	9-12	39.7	38.2	44.4	3.2	3.3
Jones	9-12	39.2	36.6	47.0	4.0	3.7
Johnson	9-12	38.8	33.1	55.8	4.3	3.8
Wilkes	9-12	33.1	27.2	50.6	3.9	3.5
		less than 20.0	--- ELIMINATED ---			
Cleveland	9-12	19.8	13.5	38.5	2.1	2.1
Angel	9-12	19.8	13.5	38.5	2.1	2.1
Jefferson	9-12	17.7	16.8	20.4	1.9	1.9
Ferguson	9-12	17.3	11.5	34.5	2.8	2.8
Brown	9-12	17.1	1.3	64.3	2.0	2.0
Booth	9-12	15.8	5.4	47.1	1.1	1.1
Robertson	9-12	14.6	10.8	25.8	1.9	1.9
Jencks	9-12	4.5	2.0	12.0	1.6	1.6
Watson	9-12	3.0	0.5	10.4	2.5	2.5

As a last layer of analysis, all schools that do not meet all of the criteria outlined above are evaluated on **step 3** to determine whether they might merit *honorable mention*. For schools to receive this distinction, they must perform as well on **step 3** as the lowest of the *gold* medal schools (well enough to rank within the top 100 schools, had they also met **steps 1** and **2**).