



*The Methodology of the 1998 USNews & WR
Outstanding American High Schools Study*

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USNews & World Report published a special issue devoted to Outstanding American High Schools on January 18, 1999. The report was based on both quantitative data analysis and qualitative information gathered from school visits and interviews. NORC collected and analyzed the data, and produced a comprehensive report of the study design, data collection, methodology, and analytic results for USNews. The present report provides a brief overview of the data collection procedures and quantitative methodology used in the study.

I. STUDY BACKGROUND & GOALS

The problems of how to identify effective and ineffective schools, and of how to explain the differences among them in terms of school policies and practices have long had a prominent place on the research agenda of social scientists. Over the past ten years or so, these problems have become increasingly important matters of public policy. There are currently major policy efforts being pursued to define performance standards and increase the accountability of public schools in reaching the standards. Despite an enormous growth the information available about schools and their outcomes, there has been very little analysis of the data. The USNews & World Report study is an effort to bring the methods of social science to bear on data about high schools.

USNews & WR identified three main goals in the course of initial discussions with NORC:

- (1) Identify effective high schools on the basis of how they do with the kinds of students they enroll. This is the “value-added” dimension.
- (2) Use public, quantitative records of school outcomes as far as possible. This is to make the results more objective and reproducible.
- (3) Identify policies and practices that produce higher levels of outcomes.

One distinctive feature of this project is the focus on *value-added* by high schools. Value-added is defined here as the portion of a student’s outcome that is attributable to what the school does, rather than the student’s background and outside-of-school experiences.

A second distinctive feature is that the project seeks to identify not only *which* schools are doing an outstanding job, but also *how* they are achieving their positive effects. Together, these two features required a two-stage analysis: (1) identification of outstanding schools, (2) identification of factors related to higher performance.

II. MEASURES USED

These goals pointed to three general types of variables that we would need to collect:

(1) **Outcomes.** The main measures available are for student academic achievement, college intentions, and high school graduation.

- Academic achievement from public records (public schools only).
- College-entrance and AP exam test-taking rates.
- SAT and ACT test scores (private schools only).

Schools identified on the basis of results on those measures were then checked to ensure high school persistence rates (public schools only) and high four-year college or university enrollment rates of graduates (private schools only).

(2) **Student Background.** This needs to be controlled for in the analysis in order to identify the school's contribution to outcomes.

The items in this set are considered to represent factors that are beyond the school's control, yet which are likely to influence student achievement. In order to identify the impact of the high school on student achievement, they should thus be controlled. The background indicators used in the analysis included:

- the percent of students receiving free or reduced-price lunch,
- median family income (from 1990 zipcode-level Census data),
- average adult (25 years or older) education (from 1990 zipcode-level Census data).

The zipcode-level family income and adult education data were linked to the schools based on principal reports of the proportions of students drawn from each contributing zipcode (up to a maximum of 5 zipcodes).

We excluded the race-ethnicity and LEP status indicators because of their relatively weak effects in many of the models and the need to restrict the number of independent variables to a minimum in the regression analyses. Nonetheless, the schools ultimately selected include several with relatively high minority and LEP enrollments.

Ideally, we would also collect data on student achievement and aspirations for college at the beginning of their high school careers. These data would allow us to measure gains during high school, and thus to compare gains among schools starting at

similar levels and with similar student social compositions. Very few states and schools collect these data, however, and such comparisons were not possible in the current study.

(3) ***Explanatory Variables***. These refer to the policies and practices of the schools that are related to outcomes. They are measured with responses to the principal questionnaire that NORC administered to all public and Catholic high schools in the six metro areas during the summer and fall of 1998. The main explanatory variables that emerged from our review and synthesis of the literature can be grouped as follows:

- ***School resources***, including finances, average class sizes, physical plant adequacy, and computer equipment availability;
- ***Academic demands***, including coursework requirements and completion rates, and minimum competency standards;
- ***Discipline climate***, including problems with violence, substance use, and absenteeism;
- ***Organizational culture***, including goal clarity, collegiality, and goal monitoring.

III. IDENTIFICATION OF OUTSTANDING SCHOOLS

The method used to identify outstanding high schools was based on a regression analysis. Two important methodological strengths of the study were its reliance on public, verifiable data; and its use multiple outcome measures.

The main steps of the analysis can be summarized as follows:

- Regressions were run ***separately by metro area*** for the public schools; Catholic schools were pooled.
- Outcomes were regressed on three measures of ***student social background*** (% free and reduced-price lunch, average adult education, median family income).
- ***Predicted outcome scores*** were calculated for each school, based on levels of the social background variables and the regression coefficients.
- The “***value-added***” to each outcome was calculated for each school, by subtracting the predicted score from the actual score for the school.

- Schools in the top 40% of the value-added distributions on all outcomes were candidates for the outstanding high school designation. The sets from which the top 40% were identified were defined separately for urban and suburban public schools.
- Final selections of outstanding schools were made on the basis of the analysis results, plus having high absolute levels of high school graduation rates, and complete questionnaire data.

IV. IDENTIFYING FACTORS RELATED TO SCHOOL EFFECTIVENESS

The **second phase of the analysis**, “the explanatory phase,” sought to identify factors associated with higher levels of outcomes. Possible factors were identified and measures developed through a variety of means: literature reviews, focus groups, results of several recent surveys of principals, a pilot survey in spring 1998, and analysis of the pilot data.

NORC mailed a 16-page questionnaires to 1,273 high schools beginning in June 1998. returns were obtained from 1,051 (83%). These data were merged with the state test data, data obtained from the College Board and ACT, and the 1990 US Census zipcode-level data.

The first stage of the analysis had estimated the value-added component for each outcome for each school. In this second stage, we estimated the correlations of the value-added estimates for each outcome variable with the measures of school characteristics. The correlations were estimated for the combined sets (without state or urban-suburban location distinguished) of public schools, Catholic schools, and other private schools.

Characteristics showing consistently significant correlations with the value-added components are highlighted in the report. The most important variables reflect ***academic demands***, including coursework requirements and completion rates, and minimum competency standards.

VI. FREQUENTLY-ASKED QUESTIONS ABOUT THE STUDY

Does the use of value-added criteria “lower the bar” for less-affluent schools?

- The value-added criteria of this study means that schools are compared with schools enrolling similar student demographic profiles. It is theoretically possible for a school to have high value added but low absolute performance levels. However, the use of multiple outcomes and the stricture that outstanding schools must be high on all outcomes appears to have disqualified almost all schools with low absolute performance levels. A few schools which were identified as outstanding on the basis of the regression analysis turned out to have higher-than-average dropout rates and were thus excluded. Thus, all of the schools identified as outstanding have both high value added and average or higher absolute levels of outcomes.

Are the data publicly available for other researchers to analyze?

- USNews and NORC are exploring ways of disseminating aggregated data to researchers. The school-level data are not available to the public. The questionnaire, College Board, and ACT data were collected with confidentiality guarantees to the schools, and thus cannot be released with school identification information without permission from each principal. The Census data and state assessment data are in the public domain. Note, though, that the Census data were linked to the schools in this study based on proportional enrollments from the five main zipcodes from which the schools recruit their students. The information on proportional enrollments was obtained from the principals in the questionnaires. It is thus not possible to replicate exactly the Census variables used in the study without the questionnaire data.

Is there a bias in favor of magnet and other selective schools in your method of identifying effective schools?

- A bias in favor of selective schools could arise if the social-demographic measures of student background we relied on underestimate students real backgrounds in the case of magnet schools. If magnet schools tend to enroll the brightest students from each social-demographic group, then one can exaggerate the effects of their school by confusing those effects with unmeasured background advantages. We tried to guard against this error by controlling for the extent to which students are admitted on the basis of competitive criteria. The principals were asked in the questionnaire the extent to which students are admitted based on achievement entrance tests, auditions, or other competitive criteria. Response options were “never,” “exceptional cases only,” “some cases,” and “all cases.” Controlling for this variable, we found that only two high schools in all six metro areas changed levels compared to the analyses where the variable was not controlled.

What distinctive contributions has this project made?

- The main public contributions of the study have been to put the idea of looking at value added by schools in the spotlight, and to identify characteristics of schools related to value added. The project identified many outstanding schools that have been largely overlooked by past research, and provides useful ideas about how to improve all schools.

What are the main shortcomings of the study?

- The main limitation of the study was the inability to estimate value added with a pretest-posttest design. Those data were not available in the six selected metro areas.

VII. FURTHER INFORMATION

For more information about the study, visit the USNews & WR website at www.usnews.com. Please direct further questions for the magazine to

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