

Expanding the Concept of School Accountability: Supplemental School Performance Indicators

Introduction

School accountability is a pervasive issue in public education. At the state level, policy makers are working to meet the provisions of the federal No Child Left Behind (NCLB) act that require all states to implement a school accountability system. At the school level, teachers are becoming literate about school accountability systems and implementing strategies for improvement.

Historically, schools have been accountable to criteria that have changed over time. The current iteration of school accountability policies presents new challenges to state policy makers responsible for developing school accountability systems. States are facing the same perplexing questions, "How to measure school performance, inform the general public of the results and make decisions about schools?" To date, standardized tests are the primary measure of student academic achievement and, by extension, school performance. The purpose of this paper is to expand the current structure of many school accountability systems by proposing a set of outcome indicators, other than standardized tests, to measure school performance effectively. Arizona is the context for this paper, however, the proposed outcome indicators are applicable to other states.



What are School Performance Indicators?

School performance indicators are the central component of school accountability systems. Indicators are generally reported as numbers or statistics to represent a characteristic of school performance. For example, an individual standardized test score represents student proficiency in a particular academic subject and/or student performance compared to a peer group. The aggregation of test scores for all students in a particular school is used in school accountability systems as an indicator of the academic performance of that school.

At the state level, several indicators are combined into a formula to develop a composite rating of overall school performance. The ratings are transformed into a format suitable for communication to the general public such as a school label. In Arizona, the indicators are combined via a formula to yield composite school labels that range from “underperforming” to “excelling.” School accountability systems also include rewards and sanctions based on the composite school labels. For example, underperforming Arizona schools are required to implement a school improvement plan and failing schools are susceptible to a state takeover.¹

The indicators in accountability systems have an impact on schools. One can reasonably expect schools to seek ways to maximize their scores on the indicators. Currently, standardized test scores hold the most weight in school accountability systems, and schools pay particular attention to the subject areas assessed on state tests to the possible exclusion of other subjects and skills.² As a result, critics argue that school accountability systems are over-reliant on test scores.³ They advocate for multiple indicators in school accountability systems in order to capture a well-rounded and more accurate picture of school performance.⁴

Most people agree that test scores alone are insufficient to capture total school performance. In fact, the framers of NCLB recognized the need for supplemental indicators and required states to include additional school performance indicators such as graduation rate and in-school accountability systems. Standardized tests, however, remain the principal means of measuring school performance. According to federal law, the additional indicators cannot outweigh the impact of standardized tests when making determinations about school performance.⁵

If there is a general recognition that multiple indicators are sound public policy, then why do few state-level school accountability systems include additional school performance indicators to supplement standardized test scores? There are certainly many proposed indicators from which policy makers can choose.⁶ One reason policy makers may exclude additional indicators is because they are incompatible with the requirements of school accountability systems. For example, portfolio assessments, which use a collection of authentic student work to determine academic proficiency, are a credible method of student academic achievement among educators at the school level. Methodological and logistical limitations, however, preclude the inclusion of portfolios in school accountability systems. The Kentucky school accountability system, which includes portfolios, is a rare exception. But policy makers in that state are debating the future of portfolios because subjective scoring of student portfolios yields inconsistent data.⁷

Scope of Research

The proposed school performance indicators in this paper are distinguished from many other efforts to expand school accountability systems on two accounts: 1) the deliberate consideration of how the indicators will function in a school accountability system; and 2) the proposed indicators target outcomes with tangible benefits to students.

This paper applies a multi-level perspective to education policy that takes into consideration the potential impact of school accountability policies at both the state and school levels. This perspective promotes academic consistency across all levels of the public education system.

In addition, this paper focuses on school performance indicators other than standardized tests. The intention is not to devalue tests; they

serve a useful role in accountability policies. New approaches to measuring student achievement, such as value-added or academic growth models, enhance policy makers' understanding of student achievement as measured by stand-

ardized tests. The bulk of students, however, have little to no investment in test score results that drive school accountability policies.⁸ The proposed indicators in this paper have a "real-world" emphasis with direct student benefits.



Criteria to Select School Performance Indicators

School performance indicators must meet four major criteria to be effective in a school accountability system: focus on outcomes, credibility, perceived value and measurability. A professional judgment panel of educators from traditional public and charter schools used the criteria to define and select the indicators. This approach is an alternative to the "top-down" development of current state-directed school accountability systems. The merits of each indicator were evaluated in relation to the criteria below, and the validity of the indicators was verified through an extensive review of the research literature.

Focus on Outcomes

Current school accountability systems measure school performance according to outcomes rather than processes or inputs.⁹ An outcome is the end result of a schooling process or activity. For example, the ability to read at grade level is an outcome while reading instruction is a process and the presence of a reading curriculum is an input. Each of the proposed school performance indicators in this paper is outcome-based.

Stakeholder groups may find different indicators credible, depending on their view, agenda or how that stakeholder intends to use the indicator.

The selected indicators were those the professional judgment panel of educators believed would be credible to as many stakeholder groups as possible. The stakeholder groups taken into consideration include:

Credibility

School accountability is an external and public process. The stakeholders who review the school performance indicators and come to a judgment about schools are outside the schools. These external bodies do not have daily contact with the school and evaluation occurs periodically, typically on an annual basis.

- Policy makers (e.g., legislators, governing boards, state boards of education)
- Educators (e.g., teachers, administrators)
- Parents
- Community and the general public
- Business (e.g., employers, chambers of commerce)

- Media
- Higher education (e.g., colleges, universities, technical schools)
- Private funders (e.g., foundations, civic organizations)

In addition, the public nature of school accountability systems dictates the use of indicators that can be communicated through the mass media effectively. The indicators are deliberated in open meetings and reported to the public through media such as newspapers and websites. Therefore, the most effective indicators in school accountability systems are transparent and interpretable. Transparent indicators present the calculation of the statistic in an accessible manner while interpretability relates to the ability of both professional and lay audiences to understand what the indicator is intended to measure. Standardized test scores meet these requirements and are one

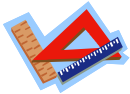
reason for their frequent use in many accountability systems.

Perceived Value

The variation in state accountability systems reflects the diversity of local educational expectations. Local policy makers consider the perceived value of an indicator based on either the desirability of the student outcome or if the outcome is consistent with the characteristics of a quality school. Ultimately, policy makers are persuaded by whether an influential collective of stakeholders or the general public finds the indicator valuable.

Measurability

The indicator must be measurable. The data must be available and the collection process feasible to administer. In addition, there must be a standard definition of the indicator and a standardized data collection process across schools.



Proposed School Performance Indicators

The professional judgment panel evaluated several indicators according to the previous criteria. The proposed indicators in this paper were selected because they are representative of school performance and meet the requirements of school accountability systems. The proposed indicators are: *Student Stability*, *Ready for High School Mathematics*, *Parent Academic Engagement* and *Post-Secondary Admission Without Remediation*.

Student Stability

School choice has become a prominent feature in public education, particularly in Arizona. Open enrollment and the introduction of a burgeoning charter school movement create many educational options for parents and students. School choice policies are based on the assump-

tion that parents will choose the most beneficial options for their child's educational progress. Similarly, the decision to stay at a particular school is a form of school choice. Parents may keep their child at a school because it provides the best education for their child.

Student Stability, defined as a student remaining in a school for more than one academic year, is a vote of confidence in a school and an informative indicator of its perceived quality. To date, stakeholders and the education community have conceptualized school choice as movement between schools. School choice policies have gained political ground based on a diverse set of assumptions about the merits of choice. The arguments in favor of school choice range from the potential reform capabilities of market forces to the belief that parents are in the best position to make education decisions for their children. These same arguments can be applied to the choice to remain at the same school.

The measurable outcome in a school accountability system is the percentage of a school's eligible student population that remains at the school for more than one academic year, adjusting for natural attrition. The eligible student population excludes students who were promoted from the highest grade offered at the school or who graduated.

Credibility Many stakeholder groups may not have considered the merits of *Student Stability* as a school performance indicator. This means they have not yet developed an opinion about the credibility of *Student Stability*. Although, a persuasive case can be made for *Student Stability* based on the same arguments and logic that support school choice policies.

Perceived Value The perceived value of *Student Stability* as an outcome to be included in a school accountability system is based on the costs of turnover for both mobile and stable students.¹⁰ Research studies have documented the negative impact of as few as one move¹¹ and others have found consistent negative effects of multiple moves on student achievement and the likelihood of graduation from high school.¹² Disadvantaged students are more likely to move

and are most harmed by the effects of mobility.¹³

In addition to the student benefits, stable schools are more conducive to creating a productive learning environment and these benefits have prompted some to call for proactive policies to reduce student turnover.¹⁴ This indicator encourages schools to implement strategies to reduce student turnover.

Measurability The data to measure *Student Stability* are currently available through attendance records and/or student information systems. State statutes and policies establish a common definition of student attendance across all schools and state reporting mechanisms standardize data collection procedures.¹⁵

Ready for High School Mathematics

Algebra is the gateway to a rigorous high school mathematics education and a prerequisite to competitive postsecondary education and employment opportunities. In addition, Algebra is essential for success in many fields and daily applications.¹⁶

Students who take Algebra prior to entering high school have a considerable advantage over students who take the course during high school or do not take Algebra at all.¹⁷ *Ready for High School Mathematics* is an indicator of whether a student completes Algebra prior to entering high school. As a result, it is assumed the student possesses the prerequisite skills to complete a rigorous high school mathematics curriculum. The importance of acquiring fundamental Algebra skills prior to entering high school is consistent with Arizona's academic standards and Arizona's Instrument to Measure Standards (AIMS) test. These skills will become essential once Arizona implements a high-stakes graduation test. Beginning with the Class of 2006, all students are required to

pass AIMS to receive a high school diploma.

Standardized test scores provide a measure of student mathematics achievement but are not a direct indicator of a student's preparation for high school mathematics because a passing score does not necessarily equate to academic readiness. A direct measure of how well schools prepare students for high school mathematics would yield informative feedback for schools and external stakeholders alike.

Ready for High School Mathematics can be measured at either the end of the elementary grades or upon entrance into high school. In the former case, *Ready for High School Mathematics* is measured by the percentage of students who complete eighth grade Algebra. In the latter case, the indicator is measured by the percentage of students who enroll in Algebra I or geometry in ninth grade.

Credibility Many stakeholders recognize the importance of a solid mathematical foundation. A recent study found consistent views among the general public and business community regarding the critical role of mathematics skills to economic development. Furthermore, the public believes the math skills of American high school graduates are lacking compared to other countries.¹⁸ This perception is supported by findings from comparative studies of international mathematics achievement.¹⁹

Mathematics requirements, however, are a common stumbling block for many students. For example, a recent study of new Arizona college admissions requirements found mathematics to be the most deficient subject area.²⁰ Therefore, it is not surprising that stakeholder resistance to raised mathematics requirements patterns student apprehension. Some stakeholder groups may resist the indicator because they believe Algebra prior to high school may be too much too fast. Parents who were frustrated with Algebra in school may

devalue the subject and teachers from other subject areas may object to the importance placed on mathematics while arguing for equal attention to other subject areas.

Perceived Value In addition to the economic and employment benefits of mathematics, there are curricular justifications for completing Algebra in middle school as opposed to later years. Some have argued that little new material is introduced in standard seventh or eighth grade math courses, leading to repetitive middle school curricula which do not challenge many students.²¹ A consistent student expectation to complete Algebra prior to high school could bolster the middle school curriculum in cases where it is lagging.

The *Ready for High School Mathematics* indicator will encourage consistent academic expectations between elementary and high school. The end result could be an increase in the percentage of students who successfully transition from elementary to high school.

There are downsides to including *Ready for High School Mathematics* as an indicator in school accountability systems. Schools may not be equipped to have all or a substantial proportion of their eighth graders enrolled in Algebra. The indicator would require schools to make some structural changes in order to meet the demands of increased eighth-grade enrollment into Algebra. Also, schools may push children into Algebra prematurely leading to frustration, math anxiety and possibly student disengagement.²²

Measurability The data needed to measure *Ready for High School Mathematics* are currently available. Data collection, however, will require new collaborations and communication for some middle and high schools. In addition, Algebra classes may differ across school districts. The implementation of the academic standards and state assessments, however, should decrease the

variability across school districts. All school districts are required to teach the content of the academic standards and all students are assessed to determine their proficiency on the standards.

Parent Academic Engagement

Parental involvement is an important contribution to a child's education. According to a review of the research, however, not all forms of parent involvement promote student achievement. This paper is focused on *Parent Academic Engagement*, a subset of parental activities that are most associated with advancements in student achievement.

Arizona schools encourage parent involvement.²³ Commonly, school-sponsored parent involvement strategies are limited to fund raising or school improvement projects. Although these school-sponsored parent activities might affect other school goals, such as building a sense of community, they have little effect on student academic achievement.

Research shows that school-sponsored parent activities that enable parents to assist their children academically are more likely to produce discernible impacts on student academic achievement.²⁴ Academic engagement includes parent activities such as:

- At the elementary level, reading to students at the youngest grades, discussing stories and their meanings and insuring their child completes homework assignments.
- At the secondary level, assisting students in charting an academic pathway through high school, enabling discussions of acceptable academic performance and monitoring student's completion of course work consistent with their postsecondary goals.

The measurable outcome for an accountability system is school-based activities that foster *Parent Academic Engagement* activities. The indicator is the percentage of parents trained through school-sponsored trainings designed to foster parent engagement activities.

Credibility Parent involvement in schools is already a widely recognized element of effective schools and holds credibility among many stakeholder groups. The distinction made in this paper is that the *type* of parental involvement is what makes a difference in student achievement. An indicator of *Parent Academic Engagement* should have credibility with stakeholder groups that already look upon parental involvement favorably. Given its academic focus, *Parent Academic Engagement* could also become a credible indicator among stakeholder groups that regard many parent involvement activities as simply "feel good" or "touchy feely."

Perceived Value Fostering *Parent Academic Engagement* is a school activity that can improve student academic achievement through the reinforcement of academic skills, habits, and expectations at home. Many schools already invest time and resources in parent involvement activities. This indicator requires schools to re-direct those activities to meet the definition of *Parent Academic Engagement*. Schools must be careful not to discourage parents, however, who may feel unprepared to participate in the training opportunities.

Measurability The measurement of *Parent Academic Engagement* as a school performance indicator presents some challenges because schools will conduct parental education differently. Successful implementation is contingent on communicating the requirements of *Parent Academic Engagement* activities to all schools. In addition, external evaluators may have to

incorporate on-site verification as part of a monitoring process to assess parent education activities.

Postsecondary Admission Without Remediation

Postsecondary Admission Without Remediation is defined as students admitted to a postsecondary institution, including two and four year colleges, and are *not* required to take remedial classes. *Postsecondary Admission Without Remediation* measures a student’s readiness to perform college-level work. For accountability purposes, the school performance indicator is the percentage of students admitted to postsecondary institutions without being required to take remediation courses.

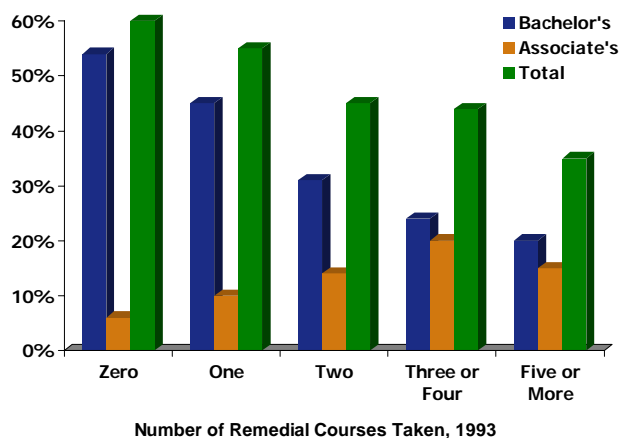
Presently, a significant number of students who enter higher education take remediation courses. Nationally, 78 percent of higher education institutions that enrolled freshman offered at least one remedial reading, writing, or mathematics course and 100 percent of public two-year institutions offered remedial classes. In total, 29 percent of first-time freshman enrolled in at least one remedial course and that rate increases to 41 percent in public two-year institutions.²⁵

Credibility *Postsecondary Admission Without Remediation* is an indicator that should be credible to many audiences. College admission, for those students who seek it, is widely considered a positive outcome of a high school education. In addition, measuring the link between secondary and postsecondary education is consistent with the philosophy of a seamless transition across all levels of education advocated by representatives of Arizona’s business community.²⁶ Policy makers and institutions of higher education would take a particular interest in this indicator because the reduction in remedial education courses could

potentially free up funds for other educational programs. Nationally, the estimated cost of remedial education programs is between \$1-2 billion.²⁷

Perceived Value *Postsecondary Admission Without Remediation* is a valued school performance goal because it increases the likelihood of successful postsecondary completion. According to the National Center for Education Statistics (NCES) there is a negative relationship between the number of remedial courses taken by a student and graduation rate. Sixty percent of college students who took no remedial classes earned an associate’s or bachelor’s degree. The graduation rate for students who take one remedial course drops to 55 percent. In the most extreme case, five or more remedial courses, the graduation rate drops to 35 percent (see Figure 1).²⁸

Figure 1: Proportion of Students Who Earned a Degree by Number of Remedial Courses Taken, 1993



There are cautions associated with implementing this indicator into public policy. By definition, the scope includes only those students interested in postsecondary education. A companion indicator is necessary to capture the postsecondary outcomes for students who enter the workforce directly out of high school.

Students entering the workforce also may be excluded if schools are not encouraged to expand the pool of postsecondary applicants beyond those students with the best possibility of entering college fully-prepared. For example, the *Postsecondary Admission Without Remediation* indicator could be coupled with an indicator that encourages schools to increase the percentage of post-secondary applicants.


Measurability The primary challenge to measuring *Postsecondary Admission Without Remediation* is establishing consistency between the different institutional methods for determining a student's need for remedial education. For example, Maricopa Community

Colleges use the ASSET assessment test to determine need for remediation while Northern Arizona University uses SAT scores to make the determination. In addition, Arizona State University and University of Arizona do not offer remedial classes, but the two universities admit students with "deficiencies."²⁹

The building blocks to collect the data are in place through existing reporting requirements. Arizona law requires the State Board of Directors for Community Colleges and the Arizona Board of Regents to submit an annual report on the academic performance of the preceding year's graduates from Arizona high schools enrolled in higher education institutions.³⁰

Conclusion

This paper introduces additional means of measuring school performance in school accountability systems. The proposed indicators contribute to public policy by expanding the conception of school performance in accountability policies. The risk of focusing on a narrow set of performance indicators in state school accountability systems is two-fold: First, teachers may overemphasize the tested subjects in an effort to maximize their school's rating. Second, tests scores alone do not measure all the important aspects of a successful school or quality education. The proposed indicators broaden the scope of school accountability systems to include "real world" outcomes with direct student benefits and a focus on improving teaching and learning.

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