COLLEGE READINESS INDICATOR SYSTEMS

Selecting Effective Indicators

The University of Chicago Consortium on Chicago School Research

CRIS

RESOURCE SERIES

The use of data to inform decisionmaking and practice at the school and district levels is now a common feature of reform efforts. Advances in districts' technological capacities have produced data systems that allow a flow of data to and from schools, often to the point of creating an overwhelming flood of information. To make the flow of information usable, it is critical that it is accompanied by clear decision rules on how to organize, interpret, and act on the data and the information they provide. Increasingly, schools and districts are turning to indicators to narrow the flow of data to the factors that truly matter for student success. Although in principle anything that can be quantified can be used as an indicator, effective indicators provide a signal of a later outcome. Effective indicators can be used to identify students who are likely to achieve (or fail to achieve) an outcome, or to highlight actionable leverage points for altering that outcome.* For college readiness indicators, it becomes particularly important to identify actionable leverage points because the outcome they are intended to predict—college success—occurs after the students have left high school. In other words, identifying which students are likely to complete college is only a starting point.

This resource is intended to guide district administrators as they consider what indicators to include in their indicator systems and how to focus their efforts to improve students' college readiness. It describes four characteristics of effective indicators, drawing on the work of the University of Chicago Consortium on Chicago School Research (UChicago CCSR) with the Chicago Public Schools (CPS). CPS used evidence from research to guide the development of two separate indicator systems: the on-track indicator for high school graduation and the Free Application for Federal Student Aid (FAFSA) completion indicator system for college enrollment. These experiences provide valuable lessons for other districts as they develop their own college readiness indicator systems.

Effective Indicators Are Part of a System

The effectiveness of indicators in isolation is limited; they need to be a part of an indicator system if they are to change outcomes. An indicator system links indicators to action and includes tools for reporting indicators and tracking progress; supports for building the capacity of adults to access, understand, and act upon the indicators; and strategies, supports, and interventions for the students identified by the indicators. The power of an indicator system is that it can take messy, seemingly overwhelming problems (such as getting students to graduate from high school and persist in college) and focus attention on the factors that have the highest leverage for improving outcomes through school strategies and intervention, or on the students who are most in need of intervention.

Embedded in an indicator system, indicators do more than merely provide information; they become a common point of reference for making decisions, focusing efforts, and monitoring progress. Effective indicator systems bring

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* Indicators can be used for other purposes such as tracking progress, holding schools accountable for improvement, or signaling priorities. This article focuses on indicators that are intended to predict a future outcome.

coherence to efforts and provide guidance to many people: district personnel, school administrators, individual teachers, students, and parents. It is therefore critical that the indicators provide targeted and relevant information and that careful consideration has been given to how practitioners, administrators, and community members will use the indicators to support students and schools. This requires an understanding of how the indicators will be used in data reporting systems, how they fit into district priorities, and what capacity the district has to provide interventions and support. Thus, building an effective indicator system requires focusing effort on high-leverage indicators while also attending to the structures in which the indicators will be used.

District leadership should shape the priorities for the indicator system, but the process of selecting indicators and building the indicator system should not rest solely on the district leadership. Instead, these decisions and processes should be a collaborative effort involving all levels of the district so that the needs of multiple stakeholders in different stages of indicator use are taken into account. Data analysts can provide evidence of the validity of the indicators and ensure that the data yield accurate and timely information. Administrators of programs and interventions provide an important perspective on what kinds of information and resources are needed. Community members are part of the system of supports around students and give an important external perspective. Finally, school practitioners have a clear perspective of how the data are used on the ground and are ultimately the most direct link between the indicators and the student supports that can lead to improved outcomes.

Four Characteristics of Effective Indicators

The process of selecting indicators should be informed by the larger district context, who the end users will be, and how the information provided by the indicators will help guide users' actions. This resource focuses on four characteristics of effective indicators and how they fit with larger efforts and systems of supports that provide a coherent roadmap for districts. Effective indicators are:

1. valid for the intended purpose;

2. actionable by schools;

3. meaningful and easily understood by practitioners; and

4. aligned with the priorities of the district and schools.

Valid for the Intended Purpose

Effective indicators are valid for the intended purpose, based on research evidence and, if possible, careful analysis of a district's own data. Too often, variables are chosen as indicators because they are widely believed to matter for later outcomes, but they show no relationship to the outcomes when examined rigorously. For example, test scores are often used to determine which students need support to pass their classes and eventually graduate from high school. However, UChicago CCSR analyzed CPS data and found that 8th grade standardized tests scores showed only a modest relationship with course failure.[1] That is, using this indicator to identify students at risk of course failure would be extremely imprecise and lead to little change in the outcome that it is intended to improve—high school graduation. Although test scores have been shown to be only a weak predictor of course failure in Chicago, other districts should examine the relationship using their own data on student test scores and course performance.

Further research at UChicago CCSR has shown student attendance to be a much better predictor of high school graduation than test scores.[2] Monitoring attendance allows practitioners to identify which students are likely to drop out and then work with those students to determine an individualized strategy for re-engaging them in school. Furthermore, by developing strategies to re-engage students with low attendance, practitioners can have a much larger effect on graduation than they would through raising test scores because the relationship between attendance and graduation is stronger and more direct than the relationship between test scores and graduation.

Actionable by Schools

There is a long list of variables that predict high school dropout and college access and graduation, and many of them fall outside the domain of school and teacher influence. Indicators are actionable by schools when they provide guidance as to which students to target for intervention or which areas of college readiness to focus their efforts on. Effective indicators condense seemingly unmanageable problems into factors that educators can influence by changing students' day-to-day experiences. For example, UChicago CCSR focused on what schools could do to reduce 9th grade course failures, an indicator of future high school dropout.[3] The initial finding that absences were the primary driver of course failure led to the subsequent finding that even one week of absences in the first quarter of 9th grade reduced the likelihood of a student graduating four years later by 15 percentage points—an actionable indicator that brought the problem of high school graduation down to students' behavior and experiences in the first weeks of high school.

When the purpose of an indicator is to identify leverage points for focusing a school's efforts, it is also important that the indicators are malleable through school strategies and interventions. For example, knowing that students who were retained in elementary school are more likely to drop out of high school can help 9th grade educators identify which students are at risk. However, an indicator of elementary school retention does not provide high schools with a malleable leverage point for intervention because the students have already been retained by the time they reach high school. In contrast, effective indicators help practitioners identify leverage

points within their control so that they can develop strategies and interventions to improve the intended outcome.

When indicators measure something that a school is able to influence, efforts to monitor progress on the indicator have real meaning to practitioners. Often practitioners are frustrated when their efforts do not translate into improvements in the outcomes that were targeted. Sometimes this occurs because their efforts are aimed at indicators that are only modestly or spuriously related to the outcome they care about—these are issues of validity as described above. Other times this occurs because the intervention or strategy that is used is not appropriate for the students who are targeted for intervention. For example, high schools often target students with multiple course failures for academic interventions such as tutoring. UChicago CCSR's analysis suggests that these students' graduation rates will not be moved by modest interventions and instead require much more intensive help that may extend beyond academic support.[4] In contrast, targeting students with just one F to receive modest interventions may have a substantial impact on their graduation rates. Effective indicators help practitioners differentiate among students and target specific strategies to the students who are most likely to be helped by them. Moreover, effective indicators provide a means through which school-level practitioners can evaluate the potential impacts of their strategies on the outcomes they care about for different groups of students.

Meaningful and Easily Understood by Practitioners

The extent to which an indicator is valid and actionable must be balanced with the ease with which school staff can understand and act upon it. Districts must rely on the capacity of the adults in schools to respond to the information provided by indicators and translate that information into supports that are effective for improving student outcomes. Indicators that are overly complex or do not provide information that is pertinent to school practitioners are unlikely to improve the outcomes they are intended to address.

Indicators need to be easily understood so that they can be translated into reporting tools. Effective reporting tools allow practitioners to intervene accordingly for students at risk and to develop targeted plans and appropriate guidance for all

students to maximize their success and performance in high school and college. This also means that an indicator must be available and reported in a timely manner so that practitioners can intervene with students as needed. Effective indicators are also easily understood by students, their families, and the wider community so that they can support schools in their college readiness efforts. This form of reporting also provides the public with information that helps students, their families, and the community understand and assess schools and their progress on indicators.

The freshman on-track indicator at CPS is an example of an indicator that has become an actionable leverage point, in part because it is meaningful and easy to understand. It is comprised of just two factors—whether a student has earned

at least five credits and whether the student has failed no more than one core course—that are familiar to school staff. As part of its freshman on-track indicator system, CPS developed a series of online tools meant to help school practitioners identify at-risk students, monitor individual students' performance, and gauge their schools' progress in supporting students' transition to high school. The district has a "freshman watch list," which includes students' 8th grade attendance, grades, and test scores and flags the students that are at risk of struggling in 9th grade. It has also developed "freshman success reports," which track students' 9th grade grades, attendance, and test scores and flags those students with course failures and/or high absence rates, helping practitioners target appropriate supports for students with different needs. This has allowed school practitioners to plan and closely monitor their students in the early stages of high school.

Aligned with the Priorities of the District and Schools

With the current deluge of information and competing priorities facing practitioners and administrators, simply providing more data in the form of indicators will not change practice. Indicators become effective when the district leadership prioritizes the indicators and related initiatives among their other goals and provides support and resources that help people understand how to use the indicators and integrate them into their practice on an ongoing basis.

Effective indicators also provide a means of signaling the priorities of the district leadership to school practitioners, administrators, and the community. The indicator becomes a tangible point of reference for evaluating status and monitoring progress and can also serve to increase awareness of an issue, develop a common language, and focus the attention of school-level practitioners, administrators, and the school community. For example, when CPS administrators developed a data system to flag students who were at risk of being off-track for graduation, it signaled the importance of monitoring students' course performance and attendance as they entered high school. It also reinforced the district leadership's perspective that high school dropout was within schools' control, rather than being due to external circumstances.

Example: CPS's FAFSA Tracking System

The FAFSA Tracking System was one of the first ventures CPS made in developing an indicator system. It introduced the use of data in schools as a tool to develop strategies around a common problem and monitor their progress, rather than strictly as part of an accountability system. The indicator system included supports designed to build schools' capacity to use data and to translate the information embedded in the data into appropriate action.

Improving access to college was a *priority* of district leadership; in 2002, ensuring that all students graduate from high school and enroll in postsecondary education or training was one of the eight goals for CEO Arne Duncan's administration. Two years later, the district established the Department of Postsecondary Education, which consolidated existing programs and resources around postsecondary access and introduced new resources such as postsecondary coaches and specialists. The department provided a home and clear leadership for the district's postsecondary access efforts. Duncan also communicated the importance of FAFSA completion by sending weekly reports to high school principals with updates on the schools that had been making progress on FAFSA completion and those that were lagging behind. These reports created competition among principals to organize their schools to improve their FAFSA completion rates.

At the same time that CPS launched the Department of Postsecondary Education, UChicago CCSR began a major research initiative on college access using CPS data. One of UChicago CCSR's early findings was that FAFSA completion was a major barrier to college enrollment and that one of the distinguishing characteristics between the students who had been accepted to college and enrolled and students who had been accepted but did not enroll was whether they had completed a FAFSA.[5] UChicago CCSR shared this early finding with CPS as soon as it was clear that using FAFSA completion as an indicator was *valid for the intended purpose* of improving college enrollment.

Once it was clear that FAFSA completion was a barrier to college access, CPS entered into an agreement with the Illinois Student Assistance Commission to receive real-time data on students' FAFSA completion. The FAFSA indicator was *meaningful and easily understood by practitioners;* it simply signified whether a student had successfully completed a FAFSA. Teachers and counselors previously

had to rely on students' self-reports of whether they had completed a FAFSA. CPS developed the web-based FAFSA tracking system that allowed practitioners to log in and see data on which students had completed the FAFSA and which had not, as well as students' eligibility for Pell Grants and their Expected Family Contribution to college costs. The FAFSA tracking system also included timely setting-level data that allowed progress to be monitored at the school and subgroup levels. The district worked closely with users of the reporting tools to refine them until the information was accessible and clear. The district further developed annual reporting tools and school-level reports on postsecondary preparation and outcomes, including trends that helped highlight what was working and what students needed further assistance.

The FAFSA indicator was also clearly seen by practitioners as malleable and *actionable by schools.* For the first time, counselors had reliable information about whether a student had completed the FAFSA successfully and could target their efforts around the students who needed assistance. However, at the time, the FAFSA was a complicated form, and many counselors lacked formal training in how to best assist students and their parents in its completion. While learning how to complete a form seems like a relatively straightforward task, improving FAFSA completion

rates required strong support from the department in training counselors and partnering with local higher education and other organizations to run workshops for students and their parents.

FAFSA completion was only the first step to improving college access, but it established a foundation for using data-informed strategies in schools. The efforts to increase FAFSA completion had dramatic effects; the percentage of students completing a FAFSA by April 1 nearly tripled, going from 30% to 86% between 2007 and 2011. The greater focus on college access and the increase in FAFSA completion was accompanied by a 10 percentage point increase in college enrollment, from 50% to 60%, over the same time period. Practitioners and administrators were able to use the information provided by the FAFSA indicator to direct their resources, and the district provided supports for schools to accomplish the task so that the indicator was part of a larger indicator system. The district leadership was able to use FAFSA completion as a way of communicating college enrollment as a priority, and it was able to monitor the progress of schools on a regular basis. Perhaps most relevant to other districts seeking to implement a college readiness indicator system, the FAFSA tracking system changed how practitioners approached problems by using an indicator to be more strategic about their actions.

Conclusion

Educators, district-level administrators, and states are calling for the identification of effective indicators, particularly in the areas of high school and college readiness. While research on data-driven improvement offers a number of lessons for school districts implementing early warning and college readiness indicator systems, the field still lacks a rigorous understanding of the specific practices around indicator development, linking indicators to actions, reporting on indicators, and capacity-building efforts that are most effective in changing how districts and schools use data to improve student outcomes.

The success of CPS's FAFSA tracking system is, unfortunately, an anomaly. Indicators are often selected and put into data systems with too little attention paid to how they fit into the larger picture of what is happening in schools and the district. The work of selecting indicators is not just a matter of providing

practitioners, administrators, and the community with valid measures. It is also important that the indicators are relevant to the priorities of the district and the central problems faced by schools. They must be actionable in schools. It is also essential that they are easily understood and translated into reporting mechanisms so that practitioners are able to link the indicators to action. Indicators can be a valuable tool for analyzing what is happening inside schools and to students, and they provide a means for discussing problems and identifying what strategies may be effective for different students and schools. This requires that indicators be viewed as a part of a larger system of supports, that schools develop the capacity and organizational culture around data use, and that the district provides schools with the guidance and resources for developing this capacity and culture.

Endnotes

1   Allensworth, E., & Easton, J. (2007). *What matters for staying on-track and graduating from Chicago Public High Schools: A close look at course grades, failures and attendance in the freshman year*. Chicago, IL: University of Chicago Consortium on Chicago School Research.

2   Rosenkranz, T., de la Torre, M., Stevens, W. D., & Allensworth, E. (forthcoming). *Free to fail: Why grades drop when students enter high school and what adults can do about it.* Chicago, IL: University of Chicago Consortium on Chicago School Research.

3   Allensworth & Easton, 2007.

4   Rosenkranz et al., forthcoming.

5   Roderick, M., Nagaoka, J., Coca, V., Moeller, E., Roddie, K., Gilliam, J., & Patton, D. (2008). *From high school to the future: Potholes on the road to college*. Chicago, IL: University of Chicago Consortium on Chicago School Research.

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