



U.S. Department of Education  
**From Information to Action**  
A Guide to Using Postsecondary Data to Improve  
Students' Chances for Postsecondary Success

BY

Constancia Warren, Leslie Rennie-Hill, Jay Jordon Pfeiffer

With Michelle Feist, Patrice Williams, Teri West, Mary Hastings

This publication was produced by The Millennium Group International, LLC under U.S. Department of Education under Contract No. # ED-ESE-11-C-0053. The views expressed herein do not necessarily represent the positions or policies of the Department of Education. No official endorsement by the U.S. Department of Education of any product, commodity, service, or enterprise mentioned in this publication is intended or should be inferred.

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# Preface

The emergence of longitudinal data systems over the past decade has provided exciting opportunities to better understand students' educational trajectories over time and institutions. Beginning with the National Student Clearinghouse data, researchers have been able to follow large numbers of students from high school into postsecondary institutions. This research, most notably the studies conducted by the Consortium for Chicago School Research, has produced important lessons about what matters most in the way high schools prepare their students for their educational futures.<sup>1</sup>

At the same time, with states like Florida and Texas pointing the way, statewide longitudinal data systems have rapidly developed and expanded. Almost every state now has the capacity to chart the trajectories of its students across time and school systems. States like Indiana and Kentucky are producing valuable feedback reports that inform high schools how well they have prepared students for postsecondary success.

Policy analysts also are using these sources of data—and other longitudinal data sets—to inform policies designed to stimulate and support districts and schools in their efforts to prepare young people for postsecondary success. An analysis of the relationship between postsecondary performance and adequate yearly progress found that looking at how students did in their postsecondary studies beyond high school—whether they enrolled, whether they needed remedial course work, what grades they earned and whether they returned for a second year—provided a more accurate measure of a school's ability to prepare its students than performance on standardized tests.<sup>2</sup> As the author points out, incorporating these new data points has the potential to create more powerful accountability systems for secondary education and increases the pressure on schools that do a poor job of preparing their students for postsecondary success. Florida already has incorporated postsecondary indicators in its accountability structure for assessing high schools' progress.

Still, a Middle Eastern proverb offers wise caution that “you can't fatten a cow by weighing it.” As helpful as all this new data capacity can be, the numbers—and the students they represent—will not change if the data are not used by those who are in a position to shape students' lives. These are the building-level staff—teachers, counselors, and administrators—who need to understand what the research teaches us about the factors that are likely to lead to postsecondary readiness, access, and success. They then need to build on that understanding by examining data about their own students' performance in high school and beyond, looking for patterns that can help point the way to needed changes in practice. This is not a once-a-year exercise, nor an analysis done by the principal and then shared with faculty at a staff meeting. Good data practice—the kind that leads to changes in the classroom and eventually changes in student outcomes—requires time and collaboration.

A regular examination of collective or aggregate analysis (e.g., the number of students at or above standard) not only promotes a common goal orientation but also brings forth the insights of many minds. Such analysis breaks down the cellular structure of

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<sup>1</sup> See, for example, Melissa Roderick et al., *From High School to the Future: A First Look at Chicago Public School Graduates' College Enrollment, College Preparation, and Graduation from Four-Year Colleges* (Chicago: Consortium for Chicago School Research, 2006) and Melissa Roderick et al., *From High School to the Future: Potholes on the Road to College* (Chicago: Consortium on Chicago School Research, 2008).

<sup>2</sup> Chad Aldeman, *College- and Career-Ready: Using Outcomes Data to Hold High Schools Accountable for Student Success* (Washington, DC: Education Sector, 2010).

schools and brings forth a precious perspective that can only be heard in communion with others whose struggles are similar.<sup>3</sup>

This guide has been written with this level of practice in mind.

## Acknowledgements

Many people played important roles in the development of this guide. The authors wish to thank Wendy Douglas-Nathai for everything from tracking references and preparing tables to organizing the logistics of site visits. We also wish to thank the full technical assistance team working to support the U.S. Department of Education's Smaller Learning Communities program, a collaboration of four organizations (The Millennium Group International, LLC, Great Schools Partnership, the Center for Secondary School Redesign, and FHI 360), which provided thoughtful feedback to an earlier draft of this guide. Most of all, we wish to thank Angela Hernandez-Marshall and Braden Goetz from the U.S. Department of Education, whose guidance and encouragement have been invaluable in shepherding this work.

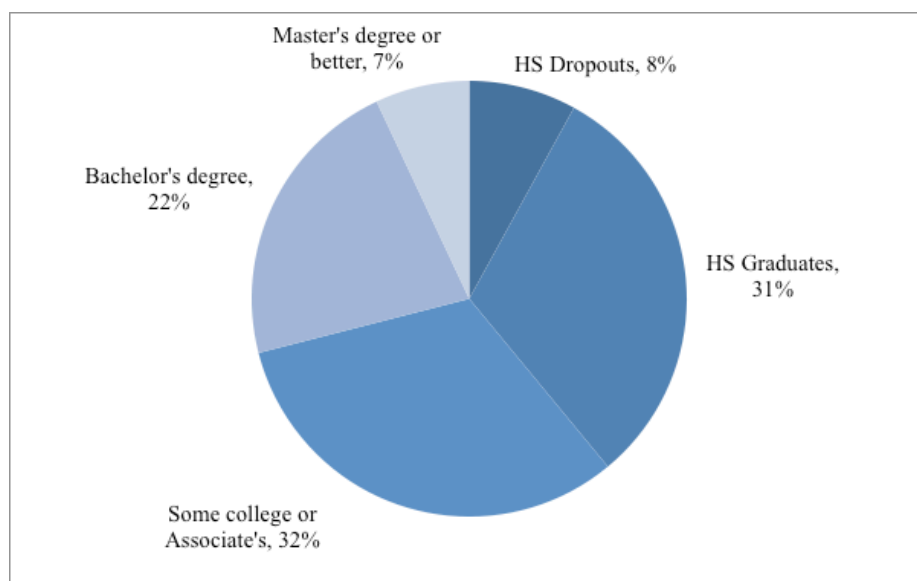
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<sup>3</sup> Mike Schmoker, *Results: The Key to Continuous Improvement* (Alexandria, VA: ASCD, 1999).

# Introduction

The stark reality for today’s high school students is that some form of postsecondary education is a necessary ticket of entry to a secure economic future. Figure 1, below, shows the educational background of workers with incomes in the middle four family-income deciles (\$30,000 to \$79,000 in 2007). More than 60 percent had at least some college education, while fewer than four in 10 of those in this income range had a high school diploma or less.

**Figure 1. Educational composition of the middle class workforce, 2007**



SOURCE: Anthony P. Carnevale, Nicole Smith, and Jeff Strohl, *Help Wanted: Projections of Jobs and Education Requirements Through 2018* (Georgetown Center on Education and the Workforce, 2010).

This pattern of increasing education requirements for well-paid employment is expected to continue. According to the Georgetown University Center on Education and the Workforce:

By 2018, our forecasts show the economy will create 46.8 million openings—13.8 brand new jobs and 33 million replacement jobs, positions vacated by workers who have retired. *Nearly two-thirds* of these 46.8 million jobs—some 63 percent—will require workers with at least some college education. About 34 percent will require a Bachelor’s degree or better, while 30 percent will require at least some college or a two-year Associate’s degree.<sup>4</sup>

Even following the 2007–2009 recession, recent graduates are doing much better economically than their peers who did not pursue a postsecondary education. In 2010, 88 percent of four-year college graduates were employed, earning an average weekly wage of \$581. For those with only a high school diploma, only 64 percent were employed, with an average weekly wage of \$305.<sup>5</sup>

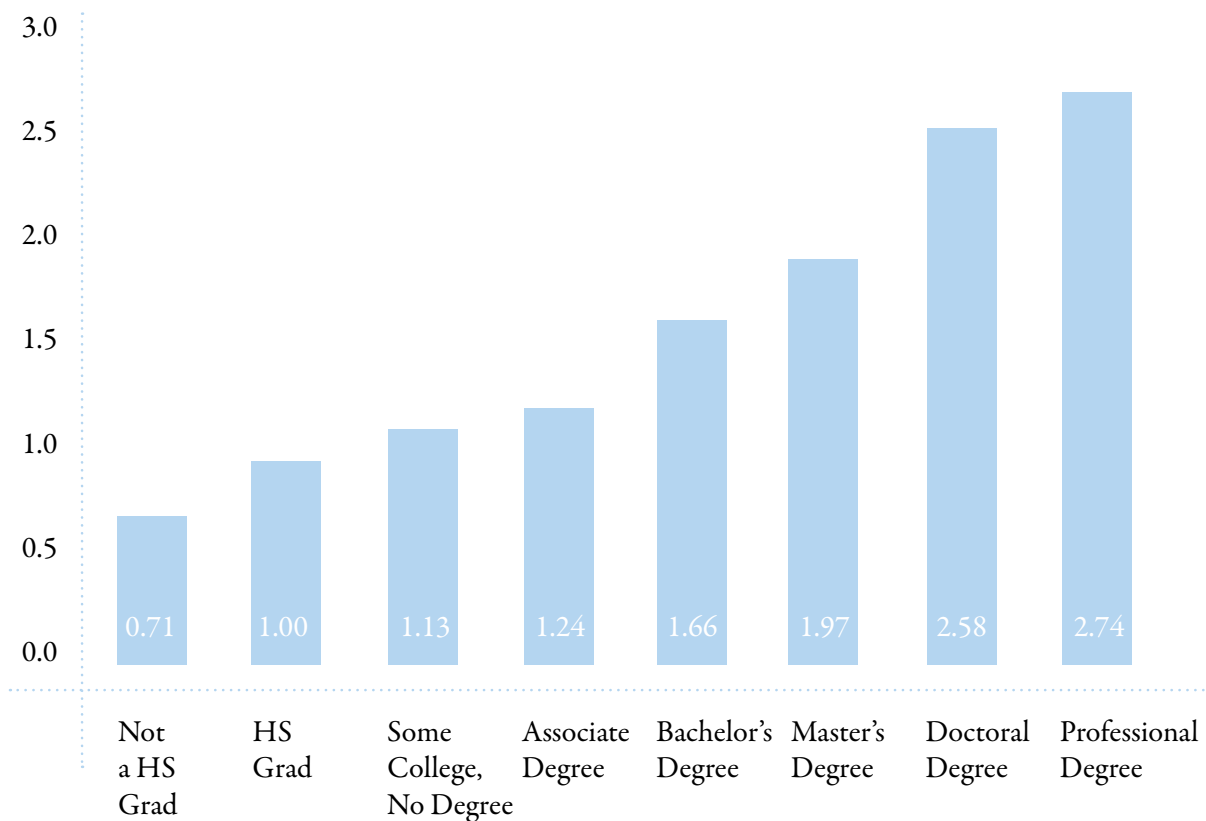
Over a lifetime, students who complete postsecondary education and training will earn far more than their less-educated peers. Figure 2 shows the ratio of lifetime earnings of each degree in comparison to

<sup>4</sup> Anthony P. Carnevale, Nicole Smith, and Jeff Strohl, *Help Wanted: Projections of Jobs and Education Requirements Through 2018* (Washington, DC: Georgetown Center on Education and the Workforce, 2010), 110.

<sup>5</sup> Michael Greenstone and Adam Looney, “How Do Recent College Grads Really Stack Up? Employment and Earnings for Graduates of the Great Recession,” *Brookings on Job Numbers Blog*, June 3, 2011, [http://www.brookings.edu/opinions/2011/0603\\_jobs\\_greenstone\\_looney.aspx](http://www.brookings.edu/opinions/2011/0603_jobs_greenstone_looney.aspx).

a high school diploma. For example, the lifetime earnings of someone with a master’s degree are likely to be nearly twice the earnings of a high school graduate.

**Figure 2. Expected lifetime earnings relative to high school graduation, by education level**



SOURCE: National College Access Network, *Creating and Operating a Statewide, Regional or Citywide College Access and Success Network*, 2011, p. 6.

Increasing the proportion of the population with postsecondary education also is critical to the nation’s economic future. Based on economists’ predictions, the Lumina Foundation warns:

What is now very clear is that, when structural job loss takes place in an economy with increasing skill requirements — such as ours, education and training are essential to putting people back to work. If we can’t supply labor markets with enough people who have the necessary knowledge and skills, economic growth will be choked off.<sup>6</sup>

### Using Data as a Tool to Increase Postsecondary Success

Given the extent to which “the labor market clearly has linked middle-class employability to postsecondary education and training,”<sup>7</sup> educators around the country are working to increase students’ readiness for, access to, and success at the postsecondary level. Concurrent with the push for higher levels of postsecondary education, the last decade has brought greater availability and comparability of data on student performance and of school and district use of data to inform efforts to improve student achievement.

<sup>6</sup> Lumina Foundation, *A Stronger Nation Through Higher Education*, March 2012, 5.

<sup>7</sup> Carnevale, Smith, and Strohl, *Help Wanted*, 110.

Two important sources of data on postsecondary success are the state-level longitudinal databases (SLDS) and the National Student Clearinghouse (NSC), which launched its secondary research initiative in 2009. These systems combine information from multiple sources for each individual student, allowing performance to be studied across time, schools, and institutional levels. In 2005 and 2009, the federal government invested in developing and expanding SLDS across the country. A primary goal of the investment was to provide researchers, policy makers, and practitioners the capacity to examine how well high school graduates are doing at the next level. High schools will be able to learn where their students enroll after high school and what they study, whether or not they need additional course work before taking credit-bearing classes, how well they do, how long they persist in their education and training efforts, whether or not they transfer to other institutions, and what degrees, certificates, or other forms of credentials they earn.

Even though more data are available, too many high schools have little reliable knowledge about what happens to their graduates. Most survey their seniors about their future plans, but this is self-reported data, and before the fact. (Unfortunately, the new sources of data have shown that too many students, particularly first-generation college-goers, do not enroll in postsecondary education even when they have been accepted.<sup>8</sup>) Nor do many high schools learn how well those students who enroll in college do in their course work or whether they need to take remedial classes before they can begin accumulating credits toward a degree or certificate.

### How Can Postsecondary Data Be Useful?

Using postsecondary data can help educators better understand important patterns of student achievement and difficulty, determine priorities for instructional improvement, and assess whether their implemented improvements have made a difference. By zeroing in on which groups of students do or do not succeed at the postsecondary level, educators can identify how to strengthen high school preparation for postsecondary education. Here are just a few examples:

- ***Data can reveal unknown problems that block student success.*** A 2008 study of postsecondary transitions by the Consortium for Chicago School Research found that roughly one in five students who had been accepted to a four-year college did not actually enroll in college.<sup>9</sup>
- ***Data can help pinpoint barriers to postsecondary access.*** The same study by the Consortium for Chicago School Research found that students who completed their Free Application for Federal Student Aid (FAFSA), which is designed to determine students' eligibility for federal financial aid, were twice as likely to enroll in a four-year college as those who did not.
- ***Data can help schools see the need for deeper change.*** In Tennessee, the Hamilton County Department of Education and the Chattanooga Public Education Foundation examined data from the two postsecondary institutions that received the greatest share of high school graduates, learning that half of these students had to enroll in remedial mathematics classes. This, in turn, led to an intensive strategy for improving secondary-level mathematics instruction.
- ***Data can overturn incorrect assumptions.*** Two recent longitudinal analyses of the qualifications of students enrolling in postsecondary education have challenged the assumption that students enroll in the most selective institutions to which they are accepted, showing that

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<sup>8</sup> Harvard Strategic Data Project, *The College Match: Do High School Graduates Enroll in Colleges that Maximize Their Chances of Success?* April, 2012.

<sup>9</sup> Roderick, *From High School to the Future*, 2008, 37.



roughly one-third enrolled in institutions for which they were overqualified.<sup>10</sup> Both studies also found that these students were significantly less likely to graduate than academically similar students who attended institutions that matched their qualifications.

These findings and those like them have informed the efforts of school leaders, teachers, and guidance and advisory personnel to help students prepare for postsecondary education and negotiate the process of identifying postsecondary options, applying for admission, and securing financial assistance. Understanding the intervention points on the pathway from high school to postsecondary enrollment can help increase the proportion of students who not only aspire to a postsecondary education—as so many of today’s young people already do—but also take the right steps to make see their aspirations realized.

## What Kind of Data Analysis Is Involved?

The current and growing abundance of data from multiple sources is daunting, particularly to those at the school level. Where should school staff begin? What data should they use? What level of analysis will be needed to yield effective guidance for positive change? As a way to consider the varying complexity of data, a 2009 guide to collecting and using postsecondary data proposed three levels of analytic work: highly detailed data analysis, detailed data analysis, and basic data analysis.<sup>11</sup>

The most complex, or what the guide refers to as “*highly detailed data analysis*,” requires the ability to manipulate and match multiple data sources and to conduct very sophisticated statistical analyses, using techniques such as hierarchical linear modeling. These analyses usually are conducted by researchers with access to large datasets and significant resources to support their investigations.

The guide calls the intermediate level “*detailed data analysis*.” These analyses combine basic student data and postsecondary data with transcript data and employ analytic approaches that involve “statistical tests (t-tests or nonparametric tests such as chi-square) to examine the relationship of one variable (such as the number of math courses completed in high school) with another (college enrollment).” These analyses could be done by district-level data analysts with access to the data and knowledge about which statistical tests are appropriate.

The third level is “*basic data analysis*.” While less complex from an analytic perspective, this level includes high leverage work at the school level. Administrators, teachers, and counselors review data that can easily be collected from their local district and from state or national postsecondary sources. They also can supplement these data with surveys and focus groups. These are “basic descriptive analyses (counting how many students do something numerically or by averages or percentages).” They can be completed using a spreadsheet program and displayed in easily interpreted tables and charts.

These different levels of research are interrelated. Very detailed analyses yield important research findings that guide the work of both practitioners and policy makers. Detailed data analyses can be used to evaluate the effectiveness of interventions that attempt to incorporate these findings. Both kinds of analyses help practitioners understand which elements are most likely to help them achieve desired outcomes.

Practitioners and district-level research personnel cannot and need not conduct highly detailed data

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<sup>10</sup> William G.W. Bowen, Matthew M. Chigos, and Michael S. McPherson, *Crossing the Finish Line: Completing College at America’s Public Universities* (Princeton, NJ: Princeton University Press, 2009).

<sup>11</sup> Neal Finkelstein et al., *Improving the Quality and Use of Postsecondary Data: A Guide for Smaller Learning Community Grantees* (Portland, OR: Northwest Regional Educational Laboratory, U.S. Department of Education, 2009), 28-31.

analyses such as those done by the Consortium for Chicago School Research. They have neither the time nor the resources. The great value of these analyses is that they lead the field to better understand what factors others can monitor using less complex analytic approaches. When district research staff and school personnel are informed research consumers, they are more likely to apply research findings from these cutting-edge studies in their own efforts to improve student outcomes.

## What Level of Technical Quality Do Postsecondary Data Need for Different Purposes?

A common concern among education practitioners is whether the data they are receiving are reliable and valid. This is an important concern, particularly for two purposes. For researchers who are trying to establish statistically significant relationships between different data elements, completeness and accuracy of the data are essential. Data accuracy also matters for teachers who are trying to tailor instructional strategies for individual students.

This guide, however, focuses on the use of data to reveal *patterns* of achievement and difficulty and the differential *distribution* of access and obstacles to postsecondary education. These patterns and distributions can provide guidance to policy makers and practitioners about where to focus their efforts across larger groups of students. While it is preferable to have clean and accurate data to the greatest extent possible, analyses of these sorts can survive minor problems of incompleteness.

What is important, however, is that the data be timely and able to be disaggregated (by gender, race/ethnicity, income, and disability), both by individual and combinations of student characteristics. This is essential for schools to examine which students are succeeding and which are having difficulty.

## What Do We Know about Effective Use of Data?

The growing availability of different kinds of data opens up exciting opportunities for educators. But it also presents daunting challenges as they try to make meaning from the data. Studies of effective use of data in the past decade provide some important lessons:<sup>12</sup>

- *Keep data presentation simple.* Simple charts and tables that focus on a few important questions are more powerful in producing school-level change than complicated data reports that only experts can use.
- *Make reviewing data part of regular school discussions.* Frequent examination of data is needed to develop a culture of inquiry that can produce changes in practice.
- *Discuss the data.* Collective discussion of data involving groups of educators leads to broader change than detailed analysis by individual teachers.
- *Use multiple forms of data.* Data from administrative sources like assessment results and postsecondary enrollment and performance data are useful but need to be supplemented by other sources of data that help educators better understand the reasons behind the results. These sources can include data from teacher-developed assessments, as well as from/ rubrics, surveys, and focus groups.

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<sup>12</sup> Mary Ann Lachat and Stephen Smith, *Data Use in Urban High Schools* (The Education Alliance at Brown University, 2004); Amanda Datnow, Vicki Park, and Brianna Kennedy, *Acting on Data: How Urban High Schools Use Data to Improve Instruction* (Los Angeles, CA: Center on Educational Governance, USC Rossier School of Education, 2008).

## Audience for the Guide

This guide has been prepared with three main audiences in mind:

- *Secondary school and district-level personnel* who want to understand how their graduates are doing in order to improve their students' readiness for, access to, and success in postsecondary education and training.
- *Institutions of higher learning*, particularly those that are building relationships with their feeder secondary schools and that often receive the largest share of any high school's graduates. They may benefit from guidance that helps them learn about the characteristics of their incoming students. As an example, in Texas, which has been a national leader in creating a longitudinal database that crosses the boundary between K12 and higher education, the Austin and Amarillo school districts have built strong data-sharing partnerships with area colleges and universities.
- *Community-based organizations, local education foundations, and other organizations* that are working in partnership with secondary schools to increase postsecondary access and success. In Tennessee, for example, a partnership between the Chattanooga Public Education Foundation and the Hamilton County Department of Education led to a focus on increasing not only high school graduation but also the proportion of students entering postsecondary education without the need for remedial course work.

## Layout of the Guide

We begin the guide with a brief discussion of the emerging conceptualizations of the precursors of postsecondary success. While many of the constructs in these frameworks are not yet easily measurable, the discussion forms an important backdrop for work designed to increase postsecondary readiness, access, and success.

Chapter Two turns to the ways we now are able to measure these concepts, based on highly detailed analyses of large datasets on the postsecondary careers of thousands of students. The findings from these studies identify the patterns of interest that can serve to guide school-level analyses of postsecondary data.

Chapter Three discusses the primary sources of administrative data that are currently available to schools, along with some of the opportunities and challenges associated with each of these sources.

Chapter Four turns to recent efforts to secure detailed data on students' postsecondary outcomes from local institutions. This chapter includes brief profiles of two such efforts, one of which illustrates the tremendous potential of using longitudinal data and the second of which shows what can be done even when longitudinal data for individual students are not available.

The next three chapters discuss practical ways to collect and use data. Chapter Five highlights the use of surveys and focus groups to gain additional insight into the findings produced by using longitudinal data. Chapter Six turns to the process of framing questions for inquiry, identifying the data needed to answer them, and making a request for data compliant with legal protection of student records. Chapter Seven discusses the process for working with data at the practitioner level. This chapter concludes with a profile of a consortium of high schools that worked with an outside partner to understand longitudinal data findings on the postsecondary outcomes of their graduates and to learn data-coaching skills that could be used to lead change in each of the schools.

# Thinking About Postsecondary Readiness, Access, and Success

This chapter discusses leading thinking about what constitutes good preparation for postsecondary success. After clarifying what we mean by postsecondary education, we explain why we are looking at readiness and access as separate, though related, ideas. The chapter will conclude by briefly describing two leading conceptualizations of college and career readiness.

## What Do We Mean by Postsecondary Education?

Most people think of two-year and four-year colleges as the primary postsecondary options, but *postsecondary education* can and should include a wide range of institutions and desired outcomes. Institutions of higher education encompass two-year and four-year colleges and graduate institutions, both public and private, as well as trade schools and vocational programs in every state in the nation, Washington, D.C., and the U.S. territories. The overwhelming majority of jobs in the future economy will require some form of higher education, but not all of them will call for a four-year bachelor's degree or beyond. By 2018, an estimated 29 percent of new jobs will require an associate's degree or professional certificate.<sup>13</sup>

## What Is the Difference between Increasing Readiness and Increasing Access?

Most discussions of how to increase postsecondary participation among today's students focus on one or both of two arenas for action. The first involves academic preparation for the course work students will need to take at the postsecondary level and the cognitive content and skills they will need to master to do well in postsecondary classes. We refer to this as *postsecondary readiness*. The second involves the process of learning about postsecondary options, selecting and applying to the postsecondary institutions for which one is qualified, and securing financial assistance, if needed. We refer to this as *postsecondary access*. Some aspects of these two sets of activities are interrelated, but to clarify what each one entails, we will talk about these two areas of focus separately.

## How Does Readiness Affect Postsecondary Success?

There is a difference between indicators of college readiness and evidence of readiness. The former is assessed while students are still in high school through the use of both quantitative and qualitative measures. The latter comes from data that tell us what really happened after a student leaves high school, including college enrollment, matriculation, persistence, and completion.<sup>14</sup>

Since 2005, thanks to the availability of school-level analyses from the National Student Clearinghouse (NSC), which now collects data from 96 percent of the nation's postsecondary institutions, some high schools have been able to collect the evidence of college readiness among their graduates. Combined with data at the individual and school levels from a range of sources, the NSC data enable school districts and individual schools to ask important questions about how well they are preparing students for postsecondary education and training.

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<sup>13</sup> Carnevale, Smith, and Strohl, *Help Wanted*, 14

<sup>14</sup> Anne Hyslop, *Data That Matters: Giving High Schools Useful Feedback on Grads' Outcomes* (Washington, DC: Education Sector, November 2011).

“Increasing qualifications is the single most important strategy for improving college access and college success.”<sup>15</sup> This conclusion from research by the Consortium for Chicago School Research indicates that students’ high school preparation is correlated with their success at the postsecondary level. However, the same body of research found considerable variation at the postsecondary level in how well different institutions educate the same kinds of students. In a 2006 study of the postsecondary trajectories of Chicago Public School graduates, institutional graduation rates for students with similar levels of high school preparation and economic background varied widely.<sup>16</sup> This suggests that we need to be cautious in attributing student postsecondary performance beyond the freshman year to the quality of high school preparation. However, similar to the importance of ninth grade success for high school graduation, how well students do in their first year of postsecondary studies is a strong predictor of whether they will earn a degree or a certificate.

## An Evolving Understanding of College and Career Readiness

Recent longitudinal analyses of data on student performance in postsecondary education have illuminated the pathway to postsecondary success. Beginning in 1999 with Clifford Adelman’s *Answers in the Tool Box: Academic Intensity, Attendance Patterns, and Bachelor’s Degree Attainment*, researchers have been able to examine how variations in student preparation were associated with differing outcomes at the postsecondary level. Adelman’s 2006 study, *The Toolbox Revisited*, confirmed and expanded his original findings.

At the same time, other scholars and practitioners have been trying to better understand and describe what constitutes appropriate preparation for postsecondary education. For the most part, these discussions involve knowledge and skills that are more difficult to measure than the elements in Adelman’s research.

David Conley identifies four components that constitute college and career readiness, as shown in figure 3. The first two columns show what Conley believes to be the essential knowledge and skills students must have to succeed in their academic work. These include the more traditional academic content knowledge and high-level cognitive skills that are needed for most postsecondary education course work. The third column includes self-management and study skills that a student will need to mobilize to succeed. The fourth column shows a set of knowledge and skills that students need to gain access to a postsecondary institution and to manage their academic life in that institution.

**Figure 3. David Conley’s conceptual framework for college and career readiness**

Key Content Knowledge	Key Cognitive Strategies	Key Learning Skills and Techniques	Key Transition Knowledge and Skills
<ul style="list-style-type: none"> <li>• Key terms and terminology</li> <li>• Factual information</li> <li>• Linking ideas</li> <li>• Organizing concepts</li> </ul>	<ul style="list-style-type: none"> <li>• Problem Formulation               <ul style="list-style-type: none"> <li>▪ Hypothesize</li> <li>▪ Strategize</li> </ul> </li> <li>• Research               <ul style="list-style-type: none"> <li>▪ Identify</li> <li>▪ Collect</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Time management</li> <li>• Study skills</li> <li>• Goal setting</li> <li>• Self-awareness</li> <li>• Persistence</li> <li>• Collaborative learning</li> </ul>	<ul style="list-style-type: none"> <li>• Admissions requirements</li> <li>• College types and missions</li> <li>• Career pathways</li> <li>• Affording college</li> </ul>

<sup>15</sup> Roderick, *From High School to the Future*, 2006, 90.

<sup>16</sup> *Ibid.*, 80-83.

Key Content Knowledge	Key Cognitive Strategies	Key Learning Skills and Techniques	Key Transition Knowledge and Skills
<ul style="list-style-type: none"> <li>• Common Core State Standards (in English literacy and mathematics only)</li> <li>• Standards for Success in Science, Social Sciences, Second Languages, the Arts.</li> </ul>	<ul style="list-style-type: none"> <li>• Interpretation <ul style="list-style-type: none"> <li>▪ Analyze</li> <li>▪ Evaluate</li> </ul> </li> <li>• Communication <ul style="list-style-type: none"> <li>▪ Organize</li> <li>▪ Construct</li> </ul> </li> <li>• Precision &amp; Accuracy <ul style="list-style-type: none"> <li>▪ Monitor</li> <li>▪ Confirm</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Technology</li> <li>• Retention of factual information</li> </ul>	<ul style="list-style-type: none"> <li>• College culture</li> <li>• Relations with professors</li> <li>• Social/identity issues in transitioning</li> </ul>

SOURCE: David T. Conley, Defining and Measuring College and Career Readiness, Educational Policy Improvement Center, University of Oregon. Presented at the Council of Chief State School Officers' PNxGL Innovation Labs Silver Spring, MD, September 21, 2011, Slide 9.

In Conley's review and analysis of efforts to define measurable indicators of college and career readiness, he sets this measurable benchmark for assessing college and career readiness:

The level of preparation a student needs in order to enroll and succeed—without remediation—in a creditbearing course at a postsecondary institution that offers a baccalaureate degree or transfer to a baccalaureate program, or in a high-quality certificate program that enables students to enter a career pathway with potential future advancement.

He further specifies:

Success is defined as completing the entry-level courses or core certificate courses at a level of understanding and proficiency that makes it possible for the student to consider taking the next course in the sequence or the next level of course in the subject area or of completing the certificate.<sup>17</sup>

Parallel to and drawing upon Conley's work, the John Gardner Center at Stanford University and the Annenberg Institute for School Reform at Brown University have been collaborating on a set of college readiness indicator systems or CRIS. For them, "College Readiness consists of three distinct yet interdependent dimensions: Academic Preparedness (AP), Academic Tenacity (AT), and College Knowledge (CK)." Each of these dimensions has two theoretical constructs:

*Academic Preparedness:*

- 1) Academic knowledge and skills necessary to succeed in college-level courses
- 2) Key cognitive strategies necessary to succeed in college-level courses

*Academic Tenacity:*

- 3) Behaviors of active participation and perseverance through adversity
- 4) Beliefs, attitudes, and values that prioritize success in school and drive student engagement and work

<sup>17</sup> David T. Conley, Defining and Measuring College and Career Readiness (University of Oregon: Educational Policy Improvement Center, PowerPoint Presentation, 2011).

### *College Knowledge:*

- 5) Knowledge, skills, and behaviors apart from academic content that allow students to successfully access college
- 6) Knowledge, skills, and behaviors apart from academic content that allow students to succeed once in college<sup>18</sup>

Consistent with the Conley and CRIS frameworks, a recent report on noncognitive factors in adolescent learning by the Consortium for Chicago School Research identified the five most important noncognitive elements linked to academic performance: academic behaviors, academic perseverance, academic mindsets, learning strategies, and social skills.<sup>19</sup> These conceptualizations are helpful in shaping and enriching our thinking about how best to prepare high school students for the challenges of accessing and succeeding at the postsecondary level. However, we do not have an easily used set of indicators for measuring how well schools and students are doing in their efforts to increase college and career readiness that align with either of these conceptual frameworks.

That does not mean, however, that schools trying to implement postsecondary readiness as described above are without data to guide their efforts. In addition to the more familiar sources of data (e.g., assessment results, course enrollment, and grades), they can collect data about the extent to which their school has offered students access to the practices described above that are consistent with these conceptualizations of effective postsecondary preparation. This was the case in one of Miami's high schools, as described below.

### Using Qualitative Data to Guide Practice: Westland Hialeah High School

Westland Hialeah is one of three high schools in Miami working with the Citi Postsecondary Success Program (CPSP), a Citi Foundation five-year grant to create a college-going culture, particularly among low-income and/or first-generation students. Through the grant, the Miami Education Fund provides support and services to Westland Hialeah to increase the college-going rates and decrease the barriers to college for many of its students.

As part of CPSP, Westland Hialeah High School participated in an asset mapping analysis using a tool developed by the CPSP technical support partner, FHI 360.<sup>20</sup> The tool is designed to help schools improve the coordination, quality, and reach of good practices already in place; to identify gaps; and to develop goals for improving college access and success among their students. Westland Hialeah's asset analysis identified trends

<sup>18</sup> College Readiness Indicator Systems (CRIS) Kick-Off Convening Materials, Glossary and Reference Document, April 4-5, 2011.

<sup>19</sup> Camille A. Farrington et al, *Teaching Adolescents To Become Learners: The Role of Noncognitive Factors in Shaping School Performance: A Critical Literature Review* (Chicago: Consortium for Chicago School Research, 2012).

<sup>20</sup> The asset analysis was conducted using a tool developed by the CPSP technical support partner, FHI 360; it can be found at <http://www.fhi360.org/resource/navigating-college-readiness-through-asset-mapping-fact-sheet>. This tool is based on David Conley's research on college readiness and organized into four categories: academic behavior, cognitive skills, contextual skills and content knowledge. It also draws from Educators for Social Responsibility's work on increasing college access, particularly the development of a continuum of support starting in the ninth grade, as discussed in "A Suggested Outline for Postsecondary Preparation," from *Increasing College Access through School-Based Models of Postsecondary Preparation, Planning, and Support*. (Cambridge, MA: ESR, January 2009); as well as the Pathways to College Network (PCN) College Readiness for All Toolbox, accessed December 10, 2009, <http://toolbox.pathwaystocollege.net/>.

within the school as well as barriers, opportunities, and gaps in services, support, and access. It also pointed to additional data collection and analysis needs.

Based on the asset analysis work, Westland Hialeah developed a comprehensive action plan for improving student preparation and readiness for college. The action plan focused on three areas of college readiness: 1) key content knowledge; 2) contextual skills and awareness; and 3) academic behaviors. For each area of college readiness, Westland Hialeah identified three specific skills that needed to be developed either in students or staff or in the school support and structure. For each skill that Westland Hialeah chose to work on, they developed an action plan.

One of the most significant goals that came out of the first asset mapping activity was Westland Hialeah's decision to begin preparing its students for college in the ninth grade. Staff redesigned the goals and content of their ninth grade orientation class to put students on the track to postsecondary success from the very beginning. Every student at Westland Hialeah takes the Freshman Seminar. This year-long required course walks students through the process of setting up their FACTS.org accounts<sup>21</sup> and guides them through the ePersonal Education Planner (ePEP). The ePEP planner helps students monitor their progress through high school and compares their transcript information with current requirements for graduation, scholarships, and even state university admissions. Students also develop postsecondary career goals and aspirations and explore the Florida postsecondary system in their freshman course. They complete a term paper and give a presentation that focuses on their projected career choices, using the data and information they have gathered about that field.

The asset mapping tool also calls attention to students' opportunities to participate in dual enrollment programs and earn college credit offered by local colleges and universities. At Westland Hialeah, nearly 12 percent of the school's 1,950 students were taking college course work through Florida International University in 2012. An additional 94 students attended classes at Miami-Dade College. According to the principal, the dual enrollment programs reflect a change in the culture of the school and have helped Westland Hialeah improve its grade on the state accountability system from a B to an A (Florida's high school framework gives schools credit for student participation and performance in accelerated course work).<sup>22</sup>

While we wait for better measures that assess students' readiness along the lines suggested by Conley and CRIS, the most useful currently available measures for looking at postsecondary readiness come from the two primary college-eligibility testing services: the ACT and the College Board, which offers the SAT examination. Both have done research on how well their tests predict postsecondary success, and recently, each has specified a level of performance on their tests that correlates to the ability to place into and succeed in credit-bearing classes at the postsecondary level.

For the SAT, a combined score of 1550 on the Critical Reading, Mathematics, and Writing tests "indicates a 65 percent likelihood of achieving a B- average or higher during the first year of college,

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<sup>21</sup> FACTS.org is Florida's Academic Counseling and Tracking for Students. Sponsored by the Department of Education and the Florida Center for Advising & Academic Support, this free online advising website helps students plan and track their education progress from middle school through college.

<sup>22</sup> Laura Isensee, "Getting a Jump on College (at a Discount)," *Miami Herald*, posted Feb. 22, 2012.



which in turn is indicative of a high likelihood of college success and completion.<sup>23</sup> The ACT research set benchmarks that predicted a 50 percent likelihood of achieving a B or higher and a 75 percent likelihood of achieving a C in first-year credit-bearing courses with ACT scores of 18 in English, 21 in Reading, 22 in Mathematics, and 24 in Science.<sup>24</sup>

The next chapter focuses on the ways we currently are able to assess college readiness, access, and success, as well as important questions schools can ask about how their students are doing on these measures.

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<sup>23</sup> College Board, “43% of 2011 College-Bound Seniors Met SAT® College and Career Readiness Benchmark, September 14, 2011,” press release, 2.

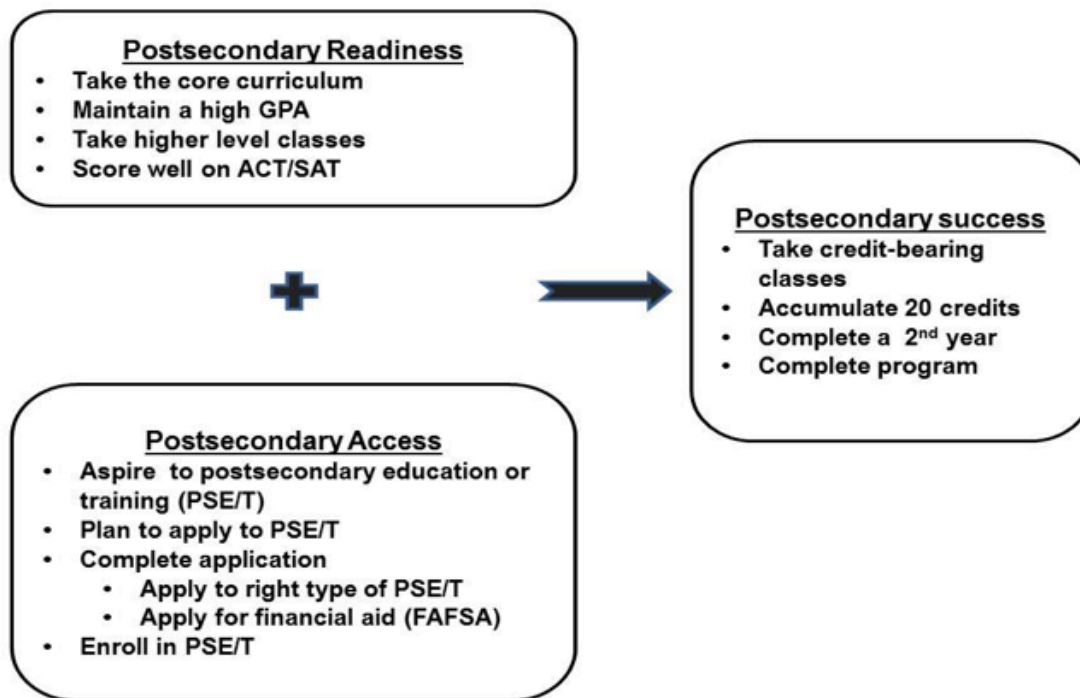
<sup>24</sup> ACT, *The Condition of College and Career Readiness, 2011*, <http://www.act.org/readiness/2011>.

# Key Leverage Points on the Pathway to Postsecondary Success

This chapter discusses elements that can be measured, using multiple sources of data, at critical junctures along the way to postsecondary success. It also articulates the key questions that need to be asked about each juncture as part of efforts to improve postsecondary access and success.

As the push for higher education and postsecondary training has grown, education policy makers and practitioners have worked to identify what schools and communities can do to increase postsecondary access and success. Figure 4 shows what we now can measure along the pathway to postsecondary success, based on available data elements and definitions.

Figure 4. Key leverage points on the pathway to postsecondary success



## Postsecondary Readiness

### *Four Leverage Points of Postsecondary Readiness*

Using Adelman’s research on the postsecondary trajectories of thousands of students as well as the studies done by both the College Board and ACT, we can identify four elements that constitute a set of measures of postsecondary readiness:

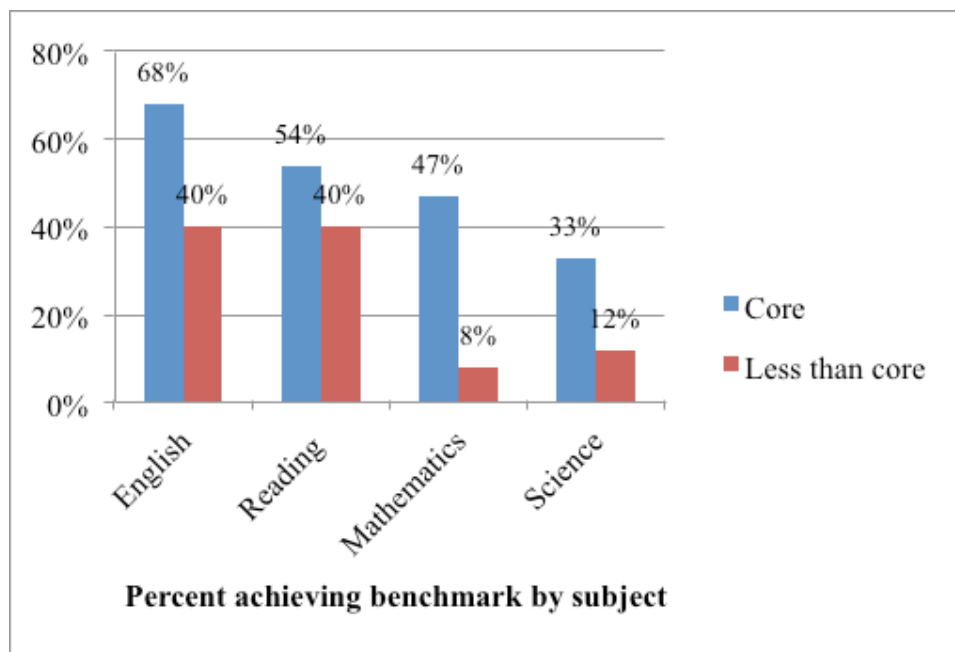
- Take the core curriculum classes that are generally recommended as part of a pre-college curriculum.
- Take additional higher-level classes, particularly in mathematics and science.
- Maintain a grade point average of B or better.
- Score well on the ACT or SAT tests.

Take the core curriculum and additional higher-level classes: In both Adelman studies (1999 and 2006), the academic curriculum intensity of a student's preparation was the single most powerful predictor of postsecondary success in completing a four-year college degree. (Adelman points out some students attend schools where they do not have access to all such courses.) In both studies, students who succeeded at the four-year college level had completed at least:

- 3.75 or more Carnegie units of English
- 3.75 or more Carnegie units of mathematics
- Highest mathematics of either calculus, pre-calculus, or trigonometry
- 2.5 or more Carnegie units of science or more than 2.0 Carnegie units of core laboratory science (biology, chemistry, and physics)
- More than 2.0 Carnegie units of foreign languages
- More than 2.0 Carnegie units of history and/or social studies
- More than 1 Advanced Placement course
- No remedial English; no remedial mathematics<sup>25</sup>

An ACT analysis of the high school preparation of students who took the ACT in 2011 shows how important these choices are to meet the ACT Benchmarks for postsecondary success.

**Figure 5. Percentage of ACT-tested high school graduates meeting ACT college readiness benchmarks by number of years of courses taken within subjects, 2011**



SOURCE: ACT, *The Condition of College and Career Readiness, 2011*, Slide 6.

It should be noted that these are the levels of course work associated with success at the four-year college level. Research on predictors of success at the two-year college level provides less guidance, in part because the range of students who attend these institutions varies so widely in age and preparation. However, Adelman's 2005 analysis of the postsecondary outcomes of community college students found that avoiding placement in remedial classes was critical to eventual completion, and that pass-

<sup>25</sup> Clifford Adelman, *The Toolbox Revisited: Paths to Degree Completion From High School Through College* (Washington, DC: U.S. Department of Education, 2006), 27.

ing a minimum of Algebra 2 in high school was required to complete at least one college-level mathematics course at the community college level.<sup>26</sup>

*Maintain a high grade point average:* Adelman also notes the 2006 study showed that class rank or grade point average (as an indicator of student effort) was as important as external senior tests (SAT or ACT) as measures of the academic resources students brought to bear on their postsecondary education. In its studies of the postsecondary trajectories of graduates of the Chicago Public Schools, the Consortium for Chicago School Research also found a high grade point average (GPA) mattered more than a high ACT score in determining access to any kind of college, to gaining admission to four-year versus two-year colleges and to more selective versus less selective colleges, and to succeeding in college. The study also found that nearly 60 percent of Chicago's graduating seniors had a C or D average, and that the GPAs of African-American and Latino students were significantly below those of white and Asian students.<sup>27</sup> A 2012 analysis of data from a statewide community college system found that high school GPA was strongly associated with both postsecondary GPA and credit accumulation.<sup>28</sup>

Score well on the ACT or SAT tests: Both the College Board and ACT have conducted analyses of how well their tests predict future academic success, each setting benchmarks for college readiness. Based on these benchmarks, they each were able to determine how well different groups of students were prepared for the postsecondary challenges that awaited them. The College Board found fewer than half (43 percent) of 2011 college-bound seniors who had taken the SAT in 2011 met the College and Career Readiness Benchmarks that indicate a high likelihood of succeeding in college.<sup>29</sup> In addition, according to ACT:

Of the 29 states where at least 40% of all 2011 high school graduates took the ACT, in only 1 state did more than half of the graduates meet at least three of the four College Readiness Benchmarks. In another 11 states, 40%–49% of graduates met three or four Benchmarks. In 12 of the 29 states, 30%–39% of graduates met at least three of the four College Readiness Benchmarks in 2011, while less than 30% of graduates did so in 5 states. In no state did more than 55% of ACT-tested graduates meet three or four Benchmarks.<sup>30</sup>

Worse, disaggregating the data shows stark differences between different groups of students, as shown in figure 6. The results tell us that there is much work to be done.

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<sup>26</sup> Clifford Adelman, *Moving Into Town—And Moving On: The Community College in the Lives of Traditional-age Students* (Washington, DC: U.S. Department of Education, Office of Vocational and Adult Education, 2005), 119.

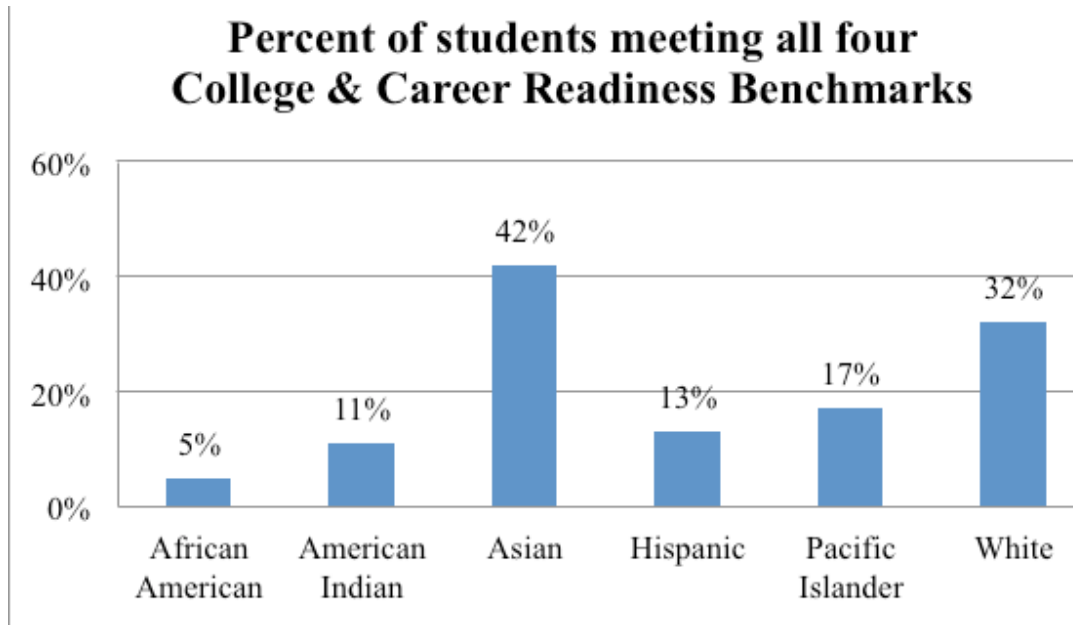
<sup>27</sup> Roderick, *From High School to the Future*, 2006, 43.

<sup>28</sup> Belfield, Clive R. and Crosta, Peter M., *Predicting Success in College: Predicting Success in College: The Importance of Placement Tests and High School Transcripts*, Community College Research Center, CCRC Working Paper Number 42, February 2012, pp. 17-19.

<sup>29</sup> College Board. *43%, of 2011 College-Board Seniors*, 2.

<sup>30</sup> ACT, *Condition*, slide 7.

Figure 6. Students meeting all four ACT College and Career Readiness Benchmarks



SOURCE: ACT: The Condition of College and Career Readiness, 2012, Based on Slide 5.

### What Questions Do We Need to Ask about College and Career Readiness?

Given the findings from national studies of students’ postsecondary readiness, what questions should districts and individual schools be asking about how well they are preparing their students for postsecondary academic success? We offer the following questions as a place to start (see table 1).

Table 1. Questions to ask about postsecondary readiness

Readiness Leverage Points	Questions
Taking the core curriculum classes that are generally recommended as part of a pre-college curriculum.	<ul style="list-style-type: none"> <li>What classes are our students taking that will prepare them for postsecondary success?</li> <li>What proportion of our graduates has taken the core curriculum?</li> <li>Are there substantial differences in which students are taking the core curriculum?</li> </ul>
Maintaining a grade point average of B or better	<ul style="list-style-type: none"> <li>What proportion of our students is earning a B or better grade point average?</li> <li>Are there substantial variations in the grades being earned by different groups of students?</li> </ul>
Taking additional higher-level classes, particularly in mathematics and science	<ul style="list-style-type: none"> <li>What advanced classes does our school offer?</li> <li>What advanced classes are our students taking?</li> <li>How well are students doing in these advanced classes?</li> <li>What proportion of our graduates has taken advanced level classes?</li> <li>Are there substantial differences in who enrolls in advanced classes?</li> <li>Are there substantial variations in how well different groups of students perform in advanced classes?</li> </ul>

Readiness Leverage Points	Questions
Scoring well on the ACT or SAT tests	<p>How many of our students are taking college entry tests? Which ones are they taking (PSAT/SAT, PLAN/ACT)?</p> <p>How well are students doing on these tests? Are there substantial variations in which groups of students are taking college entry tests?</p> <p>Do the performance levels of our students indicate that they are meeting the benchmarks for college and career readiness?</p> <p>Are there substantial variations in the way different groups of students score on these tests?</p> <p>What do our students' results on these tests tell us about where we need to improve?</p>

## Postsecondary Access

### *Six Leverage Points of Postsecondary Access*

Traditionally, guidance counselors helped students select and apply to postsecondary institutions in the junior and senior year of high school. More recently—especially in communities where students are likely to be the first in the family to get a postsecondary education—high schools are starting the process earlier. Through a series of studies on the postsecondary transitions of Chicago Public School (CPS) graduates, the Consortium for Chicago School Research has identified the following stages of gaining access to postsecondary education:

- Aspire to postsecondary education or training (PSE/T).
- Plan to apply to PSE/T.
- Complete an application.
- Apply to the right type of PSE/T.
- Apply for financial aid (FAFSA).
- Enroll in PSE/T.

*Aspire to postsecondary education or training (PSE/T):* Many more students are increasingly aware they will need postsecondary education and training. According to ACT, 89 percent of tested students in 2011 aspired to complete some level of postsecondary education.<sup>31</sup> For more advantaged students with higher levels of parental education, postsecondary aspirations are shaped early, often well before they enter high school. However, first-generation students often do not know what postsecondary options exist and which steps they will need to take to get into a college or technical training program.

Early exposure to postsecondary options has become more common in recent years. High school guidance curricula now usually include ninth grade sessions on planning for one's educational future. These often include career interest inventories to help students understand the role their education will play in attaining their personal and occupational goals. Students' early aspirations start the process of preparing for and gaining access to postsecondary options, but there are more steps to complete before a student enrolls in a college or a training program.

*Plan to apply to PSE/T:* Planning to complete a postsecondary education involves multiple activities such as researching postsecondary options, visiting different schools or programs, signing up for a set of course work, and completing sample college application forms or writing sample college essays. With little knowledge of what it will take academically to qualify or how the application process

<sup>31</sup> ACT, *Condition*, slide 9.

works, students without strong support systems are less likely to plan for their future education and apply, secure financial aid, and enroll even when accepted.

The gap between the proportion of students who aspire to a postsecondary degree or credential and those who attain one is substantial. Only 41 percent of Chicago seniors who stated that they aspired to complete a four-year degree actually applied to and enrolled in a four-year college.<sup>32</sup>

Many postsecondary planning activities require the kind of adult support that is more often available from parents in more affluent and education-savvy households than in economically challenged communities where few adults have completed a postsecondary education. To address this challenge, several states have launched postsecondary transition websites, such as What's Next Illinois or RU-ReadyND in North Dakota, that provide students, parents, and educators a wide array of information and self-planning tools for career and college planning. These sites also collect data that allow districts and schools to monitor some aspects of the college preparation process, such as the completion of FAFSA forms.

*Complete an application to a postsecondary institution:* Students in affluent families and communities often get help from parents and school or private counselors to help them through the complicated process of filling out college applications. For students without these supports, the process is intimidating. Some websites or software programs facilitate the process, but they are not always available to schools without cost. To increase the likelihood that more students will gain access to a postsecondary education, many schools try to integrate the process of completing applications into senior year English or advisory classes and even include applying to college as a graduation requirement.

Two aspects of the application process merit special attention: 1) matching students to institutions for which their academic credentials qualify them, and 2) filing financial aid forms early enough to secure scholarship assistance.

*Apply to an institution matched to one's ability:* Part of the choice of postsecondary institution involves matching students to the right kind for them. Longitudinal analyses of Chicago high school graduates found that students are more likely to persist in postsecondary institutions when they enter more selective colleges with demanding academic expectations, but that large percentages of students enrolled in colleges for which they were overqualified.<sup>33</sup> These findings were replicated by a study of five large school districts conducted by the Harvard Strategic Data Project.<sup>34</sup> A similar analysis in North Carolina found significant “undermatching.” It also found students from low-income or limited parental education were more likely to apply to schools for which they were overqualified.<sup>35</sup> The Chicago researchers believe that, at least in some cases, many students who enrolled in two-year colleges did so less out of choice and more as a default solution in the absence of guidance and information.<sup>36</sup>

*Apply for financial aid (FAFSA):* Securing financial aid is a critical step for most students, but gaining access to these valuable resources involves lots of paperwork and deadlines. To qualify for aid at most institutions, students must file the Free Application for Federal Student Aid (FAFSA), which requires their parents to complete a complex form. In addition, since most postsecondary institutions use the FAFSA in their scholarship decisions and make those decisions in April, it is important that students

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<sup>32</sup> Roderick, *From High School to the Future*, 2008.

<sup>33</sup> Roderick, *From High School to the Future*, 2008.

<sup>34</sup> Harvard Strategic Data Project, *The College Match*.

<sup>35</sup> Bowen, Chigos, and McPherson, *Crossing the Finish Line*.

<sup>36</sup> Roderick, *From High School to the Future*, 2008, 42.

and their families complete the form by the end of March of senior year. A 2009 study found that students who received assistance completing the FAFSA and information about financial aid were 40 percent more likely to apply for financial aid and 25 percent to 30 percent more likely to enroll in college.<sup>37</sup>

*Enroll in PSE/T:* Even with considerable support along the pathway to postsecondary education, some students who have been accepted into college do not enroll in the year following graduation from high school. The Chicago Consortium studies of postsecondary transitions found that as many as 10 percent of accepted students did not enroll in college. In many cases, the reasons may be financial. Students who did not file FAFSA applications may not have received financial aid or may have received insufficient assistance. Even with financial aid, the costs of attending college have risen steeply and, especially in an economically strapped family, the cost of foregoing income for a young person to pursue higher education can lead to family pressure (spoken and unspoken) for the young person to delay entry. A nationally representative survey of 1,600 dependent undergraduate college students and parents found that the average family spending on college declined in 2012 for the second year in a row, with more families reporting that they are making their college decisions based on the amount they can afford to pay.<sup>38</sup>

Chicago now monitors each of these steps, as described in the profile below.

### Chicago Public Schools—Increasing Access to Postsecondary Education

In 2003, in a concerted effort to increase access to postsecondary education, the Chicago Public Schools (CPS) created the Department of Postsecondary Education and Student Development. In doing so, it was the first large city school district to devote dedicated staff to helping students negotiate the transition from high school to college. CPS was also one of the first large districts to secure and use the National Student Clearinghouse data on postsecondary enrollment and persistence to guide its efforts. The Postsecondary Department also learned from the 2006 and 2008 reports analyzing the postsecondary trajectories of CPS graduates by the Consortium on Chicago School Research. Its mission was to design and implement an array of postsecondary, academic, financial, and social support programs and to build university, corporate, and civic partnerships designed to enhance college access.

In 2009, CPS created the Office of College and Career Preparation (OCCP), which combined the Department of Postsecondary Education and Student Development with the Department of Education To Careers. OCCP joined a larger unit called the Office of Pathways to College and Career in 2011. OCCP staff includes approximately 350 Academic Counselors and more than 40 College and Career Coaches who work at the school level, as well as a team of College and Career Specialists who focus on postsecondary preparation and work to support the school-based college and career coaches. OCCP also includes coaches for the Advancement Via Individual Determination (AVID) and Gaining Early Awareness and Readiness for Undergraduate Programs (GEAR UP) programs, and a team of Career and Technical

<sup>37</sup> Eric P. Bettinger et al., *The Role of Simplification and Information in College Decisions: Results From the H&R Block FAFSA Experiment* (Cambridge, MA: National Bureau of Economic Research, 2009).

<sup>38</sup> Sallie Mae, *How American Pays for College 2012: Sallie Mae's National Study of College Students and Parents Conducted by Ipsos Public Affairs* (Washington, DC: 2012).



Education (CTE) College and Career Academy Coordinators. All are working on helping CPS students chart pathways to postsecondary success.

### *ChooseYourFuture.org*

OCCP operates a website called *ChooseYourFuture.org*, which gives students easy access to “the resources they need to plan a successful path to graduation and post-high school success.”

The site includes a link to What’s Next Illinois (WNI) for postsecondary planning, a website operated by the Illinois Student Assistance Commission (ISAC), which has been working to increase access and affordability of postsecondary education for Illinois students. It offers students, parents, and educators a wide array of information and self-planning tools for career, high school, college, and financial aid planning. ISAC also allows districts and schools to monitor some aspects of the college preparation process, such as completion of the FAFSA forms.

ChooseYourFuture.org also provides a wide array of supports for staff to assist students and links to reports on CPS students’ FAFSA completion, college enrollment and retention, and employment. As these reports demonstrate, data play a key role in the work of OCCP, where the team monitors on-track performance attendance and behavior completion of CTE sequences test scores college applications percentage of applications where students’ qualifications are appropriately matched to the selectiveness of the institution FAFSA completion rates college acceptances scholarship dollars received enrollment and persistence in postsecondary education

### *The CPS FAFSA initiative*

The Consortium on Chicago School Research’s 2008 report found that, among CPS students who had been accepted to a four-year college, those who completed the FAFSA were 50 percent more likely to enroll than those who had not. More than one-third of the students who were accepted to a four-year college, but did not complete FAFSA, did not enroll at any postsecondary institution. Low-income students who do enroll in postsecondary education but do not complete the FAFSA pay considerably more for their education than those who file FAFSA forms, which compromises their ability to complete their education.

Submitting the FAFSA early in the calendar year is also critical to maximizing the amount of financial aid available to students from low-income families as most states and postsecondary institutions require aid applications to be submitted on or before April 1. Beginning in 2007, the CPS Department of Postsecondary Education and Student Development used data provided by the Illinois Student Assistance Commission to track FAFSA completion among its seniors, disseminating the data regularly to schools, and providing resources to support schools in helping students complete the FAFSA. Between 2007 and 2010, the CPS program increased the share of students submitting FAFSA forms from 64.5 to 86.4 percent. In 2010, by completing FAFSA forms, CPS students qualified for more than \$100 million in federal and state financial assistance.<sup>39</sup>

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<sup>39</sup> Chicago Public Schools, “CPS students post record FAFSA completion rate,” press release, February 28, 2011.

### *Monitoring the match*

Through OCCP, CPS now monitors the extent to which students' postsecondary applications are matched to their academic qualifications. In addition, in partnership with the nonprofit organization MDRC, CPS is piloting a College Match intervention in three CPS high schools. This program is based on the National College Advising Corps, based at the University of North Carolina.

“Beginning in the spring semester of a student’s junior year and extending through high school graduation, College Match delivers services through a combination of workshops and counseling by trained advisors who are recent college graduates themselves. These advisors replicate what is available to help students in more affluent schools and homes make informed decisions about college enrollment.”

Early results found that students served by the College Match program chose to attend more selective colleges and universities than students in the comparison group.<sup>40</sup>

Chicago’s efforts to increase postsecondary enrollment have paid off. As shown in the table below, there has been more than a 12% gain and 28% increase in postsecondary enrollment for CPS students. Moreover, the increases in postsecondary enrollment for African-American and Latino students have been even greater.

**Table 3: Percent of CPS graduates enrolled in postsecondary education**

	2004	2005	2006	2007	2008	2009	2010	gain	increase
Overall	43.5%	46.0%	47.9%	50.0%	52.5%	54.4%	55.7%	12.2%	21.9%
Caucasian	57.9%	58.7%	62.4%	65.6%	64.3%	67.5%	70.9%	13.0%	18.3%
African American	42.8%	46.7%	47.5%	50.2%	53.7%	54.9%	56.7%	13.9%	24.5%
Latino	34.4%	35.7%	38.9%	39.9%	43.2%	46.6%	48.0%	13.6%	28.3%
Asian	73.8%	76.5%	76.3%	75.6%	75.7%	77.2%	75.4%	1.6%	2.1%

SOURCE: Data from Annual reports of Chicago Public School Graduates Enrolled in Postsecondary Education based on National Student Clearinghouse data, including cohorts from 2004 to 2010. Reports downloaded from ChooseYourFuture.org.

## **What Questions Do We Need to Ask about Postsecondary Access?**

As the gap remains wide between students who aspire to a postsecondary education and those who actually complete a degree or certificate, what questions should districts and individual schools be asking about how well they are helping their students gain access to postsecondary options? Table 2 offers the following questions as a place to begin.

<sup>40</sup> Jay Sherwin, “Make Me a Match: Helping Low-Income and First-Generation Students Make Good College Choices” (MDRC Policy Brief, April 2012).

**Table 2. Questions to ask about postsecondary access**

Access Leverage Points	Questions
Aspire to postsecondary education or training (PSE/T).	<p>How many of our students aspire to go on to postsecondary education and training?</p> <p>Are there substantial differences between students who do and do not aspire to postsecondary education?</p> <p>Are there substantial variations between different groups of students in the kinds of postsecondary institutions and programs they aspire to attend?</p>
Plan to apply to PSE/T.	<p>What activities and services does our school provide to help students plan for their postsecondary future?</p> <p>What steps do our students take to learn about their postsecondary options?</p> <p>How many students have completed career interest inventories to help them plan their educational futures?</p> <p>How many students have visited postsecondary institutions?</p> <p>How many students have taken courses or attended programs on a college campus?</p> <p>Are there substantial variations between different groups of students in the number and kind of steps they take to plan their postsecondary education?</p>
Complete an application to PSE/T.	<p>How many students who aspire to postsecondary education apply to one or more postsecondary choices?</p> <p>Are there substantial variations in the number of applications submitted by different groups of students?</p>
Apply to PSE/T well-matched to their academic qualifications.	<p>What proportion of our students applies to institutions for which they are qualified?</p> <p>Are there substantial differences in which groups are more likely to apply to postsecondary institutions that match their academic qualifications?</p>
Apply for financial aid (FAFSA).	<p>How many students applied for financial assistance?</p> <p>How many students filed FAFSA forms before 3/31?</p> <p>Are there substantial differences in which groups of students are more or less likely to apply for financial aid?</p> <p>What impact does filing for financial aid have on applying to postsecondary institutions?</p> <p>What impact do filing FAFSA forms have on our students enrolling, if accepted?</p>
Enroll in PSE/T.	<p>How many students were accepted to postsecondary institutions or programs?</p> <p>What proportion of these students enrolled in postsecondary institutions or programs in the year following graduation?</p> <p>Are there substantial differences in which groups of students are more or less likely to enroll in postsecondary institutions? What factors are associated with students not enrolling in the postsecondary institutions to which they have been accepted?</p>

## Postsecondary Success

### *Four Indicators of Postsecondary Success*

Using Adelman's research as well as other studies of postsecondary outcomes, we can identify critical indicators of postsecondary success that reflect, at least in part,<sup>41</sup> the effectiveness of efforts to prepare students to succeed at the postsecondary level. These indicators vary depending on whether students attend two-year or four-year colleges. In addition, there is more complete information about postsecondary trajectories of students attending four-year institutions than for those attending two-year institutions and programs. This reflects the wider range of students who attend two-year institutions and the broader array of programs, degrees, and certificates at these institutions. Still, there are four important markers along the way to success:

Take credit-bearing courses in the first year of postsecondary studies.

- Accumulate 20 credits.
- Complete a second year of studies.
- Complete a degree or certificate.

*Take credit-bearing courses in the first year of postsecondary studies:* At both the two-year and four-year level, entering directly into credit-bearing course work without needing to complete remedial or developmental work is an important predictor of eventual success. Research has consistently shown that students who need to take significant numbers of noncredit courses are less likely to complete their postsecondary studies.<sup>42</sup> Noncredit course work still costs students money, using up often-limited resources for postsecondary education. In addition, students can become discouraged as they take general courses without taking beginning classes in their chosen field of study. This indicator also reflects most directly the quality of preparation.

*Accumulate 20 credits:* The threshold of 20 postsecondary credits appears to be an important predictor of completion for both two-year and four-year students. Research more clearly defines the time frame within which these credits need to be earned at the four-year level, where reaching this benchmark in the first calendar year of study (including summer school, if needed) is associated with higher levels of degree completion.<sup>43</sup> Because of the greater variation in student ages and attendance patterns at two-year colleges, the time frame is variable, but the 20-credit benchmark still predicts success, particularly for younger community-college students.<sup>44</sup> Passing credit-bearing mathematics course work appears to have particular importance at the two-year college level, where passing the second credit-bearing math course

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<sup>41</sup> The Consortium for Chicago School Research found significant variations in the graduation rates of similarly selective four-year colleges. See Melissa Roderick et al., *From High School to the Future: A First Look At Chicago Public School Graduates' College Enrollment, College Preparation, and Graduation from Four-Year Colleges* (Chicago: Consortium on Chicago School Research, 2006), 72-77.

<sup>42</sup> For four-year colleges, see Clifford Adelman, *Answers in the Toolbox, Academic Intensity, Attendance Patterns, and Bachelor's Degree Attainment* (Washington, DC: U.S. Department of Education, 1999). For two-year colleges, see Paul A. Attewell et al., "New evidence on college remediation," *Journal of Higher Education* 77 (2006), cited in Thomas Bailey and Sung-Woo Cho, "Developmental Education in Community Colleges," (Columbia University Teachers College: Community College Research Center, 2012).

<sup>43</sup> Alexander C. McCormick, *Credit Production and Progress Toward the Bachelor's Degree: An Analysis of Postsecondary Transcripts for Beginning Students at 4-Year Institutions* (Washington, DC: U.S. Department of Education, National Center for Education Statistics, 1999).

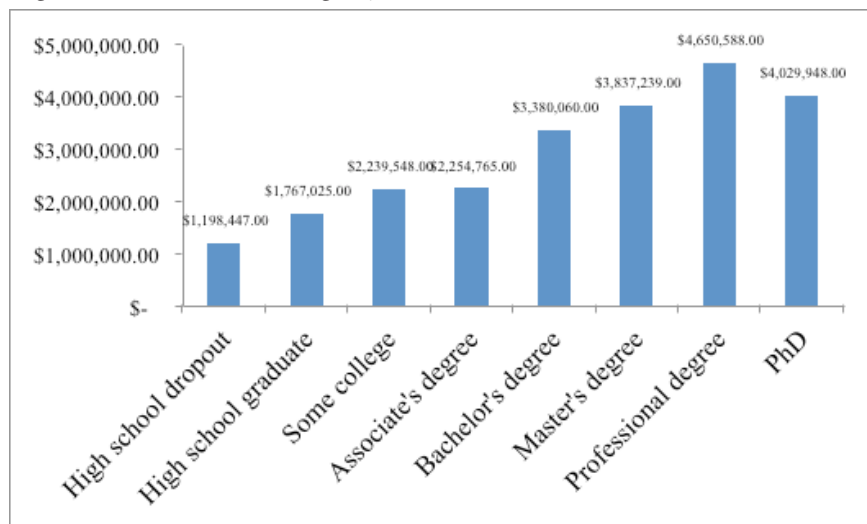
<sup>44</sup> Clifford Adelman, *Moving Into Town—and Moving On: The Community College in the Lives of Traditional-age Students* (Washington, DC: U.S. Department of Education, 2005). See also Juan Carlos Calcagno et al., "Stepping Stones to a Degree: The Impact of Enrollment Pathways and Milestones on Community College Student Outcomes," Community College Research Center Working Paper 4 (October 2006): 21.

is a predictor both of earning an associate's degree and transferring to a four-year institution.<sup>45</sup>

Complete a second year of studies: Researchers now talk about the importance of credit momentum toward earning a degree at both the two-year and four-year college level. Many four-year college students leave school during their first year of postsecondary studies, but a substantial additional group that return for a second year never gain enough academic traction—either in terms of credit accumulation or GPA—to complete a degree. At the four-year college level, finishing a second year of studies is a better predictor of degree completion than simply returning for a second year.<sup>46</sup> At the two-year college level, researchers examined the relationship between specific milestones, such as completing 25 percent, 50 percent, and 75 percent of the program, and finishing a degree or certificate. As one study found, “reaching milestones associated with credits earned or completing a portion of a program increased the probability of graduation for all students, but doing so had a greater impact on younger students than on older ones.”<sup>47</sup>

Complete a degree or certificate: The final indicator of success in postsecondary education is completion of a diploma or certificate. As shown in figure 7, completion has significant economic consequences for students.

**Figure 7. Lifetime earnings by educational attainment level**



SOURCE: Anthony P. Carnevale, Nicole Smith, and Jeff Strohl, *Help Wanted: Projections of Jobs and Education Requirements Through 2018* (Washington, DC: Georgetown Center on Education and the Workforce, 2010).

## What Questions Do We Need to Ask about Postsecondary Success?

Table 3 suggests questions about postsecondary success that can be used to reflect on how well high schools have prepared their students. It is important to recall that differences in how well different postsecondary institutions retain students with similar academic characteristics make it hard to attribute postsecondary outcomes beyond the first year to high school preparation.

<sup>45</sup> Adelman, *Ibid.* See also Colleen Moor and Nancy Shulock, *Student Progress Toward Degree Completion: Lessons From the Research Literature* (Sacramento, CA: Institute for Higher Education Leadership and Policy, 2009), 4.

<sup>46</sup> Adelman, *The Toolbox Revisited*, 2006, 55-57.

<sup>47</sup> Calcagno, *Stepping Stones*, 5.

**Table 3. Questions to ask about postsecondary success**

Success Leverage Points	Questions
Take credit-bearing courses.	<p>How many of our students enter directly into credit-bearing classes at the postsecondary level?</p> <p>What proportion of our students needs to take remedial classes in mathematics?</p> <p>What proportion of our students needs to take remedial classes in English?</p> <p>Are there substantial variations between the levels of remedial work needed by different groups of students?</p>
Accumulate 20 credits.	<p>What proportion of our graduates who enter postsecondary education accumulates 20 credits by the end of their first year of postsecondary study?</p> <p>Are there substantial differences between groups of students in whether or not they accumulate 20 credits by the end of their first year of postsecondary study?</p> <p>What high school factors are associated with students not accumulating 20 credits by the end of their first year of postsecondary study?</p>
Complete a second year at four-year colleges or 50% of their program requirement at two-year institutions.	<p>What proportion of our graduates who go on to postsecondary education completes a second full year at the four year colleges or 50% of their program requirement at two-year institutions?</p> <p>Are there substantial variations between different groups of students in whether or not they complete a full second year of studies or 50% of their program?</p> <p>What high school factors are associated with students not completing a second full year of course work or 50% of their program requirement?</p>
Complete a diploma or certificate.	<p>What proportion of our graduates earns a postsecondary degree or certificate?</p> <p>Are there substantial variations between groups of students in who did or did not earn a degree or certificate?</p> <p>What proportion of our graduates earns four-year college degrees?</p> <p>What proportion of our graduates earns two-year degrees or certificates?</p> <p>Are there substantial differences in which students are earning two- and four-year degrees or certificates?</p>

The following chapter discusses the public sources of data for answering questions about postsecondary readiness, access, and success.

# Sources of Data for Answering Questions about Postsecondary Readiness, Access, and Success

This chapter describes the three major public sources of data for answering questions about postsecondary readiness, access, and success: state longitudinal data systems (SLDS), the National Student Clearinghouse, and district-level data systems. Each offers a different slice of the data collected on student performance that may be used to better understand how students perform after they graduate from high school. Data from these systems may be used in different combinations depending on the attributes and limitations of the systems in each state.

## State Longitudinal Data Systems

In 2002, Congress passed the Education Sciences Reform Act and the Educational Technical Assistance Act. This legislation initiated an ambitious effort to establish comprehensive state longitudinal data systems (SLDS) in the states. These systems combine information from multiple sources for each individual student, allowing their performance to be studied across time, schools, and institutional levels.

“A few pioneering states—including Florida and Texas—had begun similar efforts spanning all education sectors from kindergarten through postsecondary education prior to 2002. However, the new laws had the objective of providing resources and guidance for building such systems to all the states and territories. Beginning in 2005, the U.S. Department of Education administered five separate rounds of grants intended to build and improve SLDS. So far, grants have been awarded to 47 states and the District of Columbia.”

Also, it is important to note that every state has committed to the objectives associated with SLDS development as a condition of receiving State Fiscal Stabilization Funding under the American Recovery and Reinvestment Act. Thus, the effort is nationwide.

The national SLDS program has five primary goals—to promote the use of education information in states to:

- improve instruction
- determine whether graduates have the knowledge and skills to succeed in postsecondary education and the workforce
- facilitate the transparency of education information for stakeholders through public reporting
- ensure the use of data to inform decision-making at all education levels
- generate and facilitate the use of accurate and timely data

The intent was to realize these goals in two ways. The first involved connecting detailed student-level data from preschool, K12 schools, and districts with postsecondary and workforce data. The second anticipated providing regular releases of information through reports, research findings, evaluation study results, and other mechanisms.

Initially, much of the focus was on building comprehensive, longitudinal K12 data systems at the state level. Developing K12 longitudinal data and reporting capabilities has remained a core objective in each round of grants, but later rounds also placed a priority on linking K12 data to postsecondary education and workforce data.

Developing the SLDS is a daunting undertaking, but most states have made substantial progress in building the kinds of systems anticipated by the legislation. Most states have SLDS systems that are operating while continuing to add new data sources and build capacity to provide information and insights to education policy makers and practitioners. The specific content and capabilities of the systems differ from state to state. Because the development processes are relatively recent and rapid, it is important to note SLDS content and capabilities are still changing and emerging.

As a condition of receiving flexibility around specific requirements of the Elementary and Secondary Education Act (ESEA), states must annually report college enrollment and credit accumulation rates by high school. Eleven states (CO, FL, GA, IN, KY, MA, MN, NJ, NM, OK, and TN) made this commitment when they submitted requests through the first round of ESEA waivers in November 2011.

## Kentucky's State Reports

Kentucky is one state that provides feedback reports on some aspects of postsecondary readiness. Each high school now receives a four-page report for each graduating cohort with the following information:

### *Performance of graduates in comparison with other high schools in the district and state*

- Number of graduates
- Average GPA
- Percent Free and Reduced-Price Lunch
- Average eleventh grade ACT scores of these students in English, Reading, Mathematics, and Science, and the composite across tests
- Dollars awarded to graduates in Kentucky Education Excellence Scholarships
- Percent of graduates attending postsecondary institutions (from Kentucky postsecondary institutions and National Student Clearinghouse data)
- Percent of graduates attending Kentucky institutions
- Percent of students attending out-of-state institutions

### *Profile of students attending postsecondary institutions*

- Number of students attending in-state or independent colleges
- Percent attending different types of institutions: four-year public, two-year public, independent
- Percent of students enrolled full-time
- Percent seeking different types of degrees (bachelor's, associate's, certificate, undeclared)
- Demographics of students enrolled in postsecondary education by race/ethnicity, gender, Special Education, free and reduced-price lunch

### *Types of institutions attended by graduates*

- Percent attending
  - In-state four-year and two-year public, and proprietary



- Independent institutions (both in and out of state)
- Out-of-state proprietary
- Not attending postsecondary
- Average composite eleventh grade ACT score by type of postsecondary education

In addition, the report provides a list of the institutions attended by graduates.

## Indiana’ State Reports

Indiana also provides each high school with a three-page College Readiness Report that compares its performance for each graduating cohort to other high schools in the state and includes the following information:

- Number of graduates in the cohort attending Indiana Public Colleges
- Percent of graduates needing remediation at the postsecondary level
- Percent of graduates needing remediation by subject in Math, English Language Arts, or both
- Number and percent needing remediation by different types of diplomas: honors, Core 40 (Indiana’s college preparatory curriculum), general or unknown
- Postsecondary enrollment by the type of degree sought: bachelor’s, associate’s, certificate (under one-year programs versus at least one year but less than two-year programs)
- Percent enrolled as full-time and part-time students
- Number and percent enrolled by institution types: two-year Indiana public and four-year Indiana public institutions
- Number and percent enrollment by program types: education; arts and humanities; social and behavioral sciences and human services; science, technology, engineering, and math; business and communication; health; trades, and undecided
- Average freshman year cumulative GPA by diploma type: honors, Core 40, general and other or unknown
- Average credit hours earned by institution type and full- or part-time status

Both states’ reports give individual schools valuable insights about their students’ postsecondary progress. Because the Indiana high school feedback reports include information on enrollment in remediation classes, high schools in this state can see how well their graduates are performing at the postsecondary level.<sup>48</sup> Samples of both feedback reports are included in Appendix A.

## Current SLDS Content and Capacity

The SLDS are a valuable resource for high schools as they try to chart a pathway to postsecondary success for their students. However, because the SLDS are still developing, printed materials about what each collects and makes available may soon be outdated.

Given the rapid development of the SLDS, no single resource provides information about the real-time status of each of the states’ systems. The Education Department’s web page for the SLDS state grants provides state-by-state information and the names of the key state contacts. ([http://nces.ed.gov/programs/slds/grant\\_information.asp](http://nces.ed.gov/programs/slds/grant_information.asp))

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<sup>48</sup> Because ACT has studied the relationship between scores on the ACT exams and placement in remedial classes at the postsecondary level, Kentucky high schools also can get a rough estimate of how many and what proportion of their students are likely to need remediation by looking at their ACT scores.

Those SLDS that are mature are most likely able to provide nearly all of the longitudinal data (spanning 2002–2012, for example) required for analytic work. In some states, the data will be housed in a single data repository such as a data warehouse. In other states where data collected by the SLDS are less extensive, data may be available through interagency data-sharing. Importantly, the SLDS will have in place all of the matching processes and algorithms necessary to combine district-level data with other data resources, such as those from postsecondary education. In addition, SLDS managers will have templates for the necessary agreements or contracts required to access the data at a single place and through a single process. In general, these kinds of agreements should be forged between the district and the SLDS, rather than by individual schools.

In the best of all worlds, the SLDS will provide access to most, if not all, of the requested data. However, given their varying stages of development, not all SLDS will be able to meet all school/district requirements. To enable schools to work with SLDS data, district data personnel should establish an early relationship with the managing entity for the SLDS in their state. Usually, this is a state organization such as a state education agency, but sometimes is a university, an education data research center, or a “K16” organization with SLDS responsibilities that spans secondary and postsecondary data sources. Whether or not the SLDS can meet all of the site’s data requirements, data experts at the state education agency may be able to provide valuable services, guidance, and facilitation with regard to accessing data resources.

Moreover, because the SLDS are still in development, the expressed data needs of districts and schools provide valuable information for SLDS managers. Most try to anticipate the kinds of analyses that will be most useful, but as they contemplate future design work and content considerations for the SLDS, the kinds of data requests they receive will inform their thinking.

## Working with the SLDS

Because the SLDS are continuing to mature, several issues should be kept in mind in obtaining and using data:

1. *Access.* Most states have established processes that provide an avenue for external organizations to request and gain access to student-level data from the SLDS. This can be expected to increase as SLDS access processes will be accelerated by work currently being done by the Institute for Education Sciences (IES), the research arm of the U.S. Department of Education.<sup>49</sup>

District data personnel should determine early on what the access processes are, the time frames involved, information needed in requests and agreements, and state expectations regarding managing and securing data resources. In addition, as in all cases involving access to student-level data, requirements and obligations regarding the handling of the data will be outlined in some form of a legal agreement or memorandum of understanding (see the discussion of FERPA and framing data requests in Chapter Six).

2. *Longitudinal Content.* To examine the trajectory of students beyond graduation, high schools need several years of data—at the very least enough to look back at the last two years of high school and forward through the first two years of postsecondary education. To meet this requirement, an SLDS would need to contain longitudinal data spanning at least those four years. While much of the SLDS developments in states began with federal grants in 2005, not

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<sup>49</sup> National Forum on Education Statistics, Forum Guide to Supporting Data Access for Researchers: A State Education Agency Perspective (NFES 2012-809) (Washington, DC: National Center for Education Statistics, U.S. Department of Education, 2012). IES worked with state education agencies through the NCES Forum during 2011 to develop the guide, which outlines considerations, processes, and templates for states to use in establishing consistent access policies and processes. Further, the Regional Education Laboratories have been reconstituted by IES, and much of their work will focus on using state longitudinal data systems to fulfill their research agenda.

all SLDS will have data covering the full period. However, all SLDS are designed with the expectation of continuous data collection going forward, and many can already provide useful longitudinal perspectives on the relationship between high school preparation and postsecondary performance and persistence.

3. *High School Data Content.* In the best-case scenario, the SLDS will have the same high school data in similar detail to what is available locally. These data will already be matched over time, in some cases with postsecondary data. Many SLDS already have the capacity to provide these data, but other states are still building their capacity to capture vital elements for examining postsecondary readiness and success.

This does not mean that these elements are not available elsewhere. For example, schools operating in states that do not collect student-level course completion or transcript data may be able to find those data elsewhere. They should check with their state education agency (SEA) to determine if these data are collected in some form at the state level but are not yet incorporated into the SLDS.

In some cases, the state system may participate in a transcript exchange service that collects and transfers this type of information from high schools to selected postsecondary institutions. The repository that facilitates this exchange may provide access to transcripts for local research purposes.

If this information is not available at the SEA, local school district data managers usually collect course-level data as a part of their district's management information and student support functions. Another alternative, although more labor-intensive and complicated, is to link or match data obtained from the local district containing course completion data to SLDS data provided to the school.

4. *Postsecondary Data Content.* Most states now "have the ability" to link K12 data to postsecondary data. This is good news from the perspective of using SLDS resources to answer questions about postsecondary success. Keep in mind, however, that this postsecondary content may not include all postsecondary institutions nor all desired data elements, such as:

*Postsecondary Coverage.* The term "postsecondary" covers a broad range of options. The options include private-for-profit, private-nonprofit (often referred to as "independent"), and public institutions. They include opportunities inside a state's boundaries as well as outside them. Within these categories, many states have an array of postsecondary technical institutions with programs of varying length, two-year colleges, four-year colleges and universities, and postgraduate institutions.

When states indicate that their SLDS has the "ability to link to postsecondary," they are likely referring to most but not necessarily all of the postsecondary options. In most cases, the SLDS includes data from in-state, public, two- and four-year institutions. In some cases, they also may include data from independent and proprietary institutions. For many schools, coverage that includes public two-year and four-year institutions within their state will be sufficient because it will cover the postsecondary experiences of most of their students.

*Postsecondary Data Elements.* When a state indicates that its SLDS links K12 and postsecondary data, this may include a range of data elements. Discussions with state SLDS contact persons will be needed to determine if the types of data elements needed by a school or district, such as postsecondary course completion, remediation, and overall completion, are captured or can be captured through the SLDS. In addition, as the SLDS are developing, it is important to determine whether the SLDS contains the needed data elements over a sufficiently long period of time to track graduates forward into postsecondary and through to completion.

It is likely that all of the desired postsecondary data elements may not be available in the SLDS. However, state-level postsecondary governance organizations<sup>50</sup> have detailed elements that can be provided either through an arrangement with the SLDS or through a separate arrangement.<sup>51</sup>

## National Student Clearinghouse Data

The capacity of most SLDS to provide information about postsecondary outcomes is limited to the institutions within each state. In addition, the SLDS sometimes do not include students who attend proprietary institutions. Another major resource for obtaining matched student-level high school data to postsecondary data is the National Student Clearinghouse (NSC). The NSC collects student-level postsecondary enrollment and related data from postsecondary institutions throughout the United States. It was originally established in 1993 as an enrollment verification mechanism for lenders providing loans to students enrolled in postsecondary education as authorized under Title IV of the Higher Education Opportunities Act. Since its inception, the NSC has expanded its services to include additional reports and analyses of use to high schools and postsecondary institutions.

Currently, over 3,000 postsecondary institutions throughout the country participate voluntarily in the NSC. The NSC's website<sup>52</sup> indicates that participating institutions account for 96 percent of the postsecondary enrollments in the United States. Participating institutions report data into the NSC on an average of every 45 days.

The primary service of interest to high schools is called StudentTracker, which includes data on the postsecondary enrollment, persistence, and completion of the school's graduates. Another service, DegreeVerify, enables high schools to verify degree and certificate completion. Statistical reports provided by NSC include a variety of high school feedback-types of analysis describing many aspects of student transition from high school to postsecondary education.<sup>53</sup> The detailed student-level matched datasets<sup>54</sup> include the following information:

- Identifiers—First Name, Middle Initial, Last Name (obtained from the high school)
- Student Characteristics—Birth Date (from the high school)
- Institution—College Code/Branch (OPE, FICE), College Name, State, two-year/four-year/less than two-year public/private (from StudentTracker)
- Enrollment—Begin/End date, status as full-time, half-time, less than half-time, leave-of-absence, withdrawn, deceased (from StudentTracker)
- Persistence—A derived measure based on matches across several defined enrollment periods (from StudentTracker)

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<sup>50</sup> Examples of postsecondary governance organizations include higher education coordinating boards, higher education commissions, boards of governors or regents, university of community college departments, and others. In some cases, coordinating boards and commissions collect most of the state's postsecondary data; in other cases, the data may be collected by several organizations.

<sup>51</sup> A good summary resource for state systems is *Strong Foundations: The State of State Postsecondary Data Systems: 2012 Update on Data Sharing with K-12 and Labor*, by the State Higher Education Executive Officers organization. The report, based on survey results, is available at <http://www.shceo.org/sspds/default.htm>.

<sup>52</sup> [http://www.studentclearinghouse.org/about/who\\_we\\_work\\_with.php](http://www.studentclearinghouse.org/about/who_we_work_with.php)

<sup>53</sup> Sample high school reports are available at [http://www.studentclearinghouse.org/high\\_schools/files/STHS\\_SampleReport.pdf](http://www.studentclearinghouse.org/high_schools/files/STHS_SampleReport.pdf)

<sup>54</sup> See format at [http://www.studentclearinghouse.org/high\\_schools/files/STHS\\_DetailReportGuide.pdf](http://www.studentclearinghouse.org/high_schools/files/STHS_DetailReportGuide.pdf).

- Graduation—Anticipated graduation date from StudentTracker, reported graduation from DegreeVerify

High schools and postsecondary institutions can avail themselves of NSC services by entering into an agreement designed to comply with FERPA requirements and by paying associated fees.<sup>55</sup> With agreements in place and fees paid, high schools participate by providing secure files containing individual student data elements, such as cohorts of graduates, to the NSC. The NSC then matches these students to the postsecondary data they have collected. Based on matched data, the NSC provides a variety of statistical reports as well as individual-level records.

The matching processes used by the NSC rely on matches between first and last names, middle initials, and birth dates. Their processes include a physical review of questionable matches such as those with partial information. As NSC works with institutions to collect other data elements, such as gender, additional processes will be explored to improve match accuracy. The NSC continues to collect more information as well as offer new or expanded services.

## District-Level Data Sources

Almost all school districts now have some kind of electronic data system. They typically include separate systems that have developed over time to collect and report data, often with the capacity to integrate and share data files across the original systems. Figure 8 shows the most frequently used systems.

**Figure 8. Types of electronic student data systems**

<p>Student information systems provide real-time access to student data such as attendance, demographics, test scores, grades, and schedules.</p> <p>Data warehouses are electronic data collection and storage systems that provide access to current and historical data on students, personnel, finance, and other factors.</p> <p>Instructional or curriculum management systems provide a unifying framework to support access to curriculum and instructional resources such as planning tools, model lesson plans, creation of benchmark assessments, linkage to state content or performance standards, and communication and collaboration tools (e.g., threaded discussion forums).</p> <p>Assessment systems support rapid organization and analysis of benchmark assessment data.</p>
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SOURCE: Jeffrey C. Wayman, “Involving teachers in data-driven decision making: Using Computer data systems to support teacher inquiry and reflection,” *Journal of Education for Students Place At Risk* 10, (2005): 295-308, cited in Barbara Means, Christine Padilla, and Larry Gallagher, *Use of Education Data at the Local Level: From Accountability to Instructional Improvement*, prepared for the U.S. Department of Education, 2010.

However, the results of a 2008 survey of more than 500 districts indicate some challenges remain to using district-level data. Despite multiple systems, most districts still face difficulty getting their systems to communicate with one another. More importantly for the focus of this guide, according to one study, “there is currently a misalignment between the types of data that districts feel are key for improving student achievement and the types of data that are being requested by the state for accountability purposes. Districts need student-level information to inform instruction and what is sent to the state is aggregated student achievement data, attendance, and student counts.”<sup>56</sup> The extent to which this limitation will pose problems for efforts to understand and improve postsecondary readiness and success will depend on the kind of individual student data the district maintains and on the

<sup>55</sup> <http://www.studentclearinghouse.org/colleges/fees.php>

<sup>56</sup> Means, Padilla, and Gallagher, *Use of Education Data*.

capacity of the district's data office to share the data in meaningful and teacher-friendly ways.

## Matching Datasets

The great advantage of longitudinal data systems is that they make it possible to follow individual students over time and across institutions. When longitudinal data are not available, individual student records can be matched across different data sets. Although this is sometimes described as a relatively simple process that uses a common identification number (where it exists), accurate matches require more precision.

As an example of the complexity of linking and matching, the Florida Department of Education manages the nation's longest-lived longitudinal data repository that joins secondary and postsecondary education data sources to other data. This repository contains data linking individual student records from K12, adult education, career and technical education, and associate's and bachelor's degree programs from 1996 forward. To ensure accurate matches across sectors and over time, the system uses various combinations of name, birth date, gender, school-assigned ID, and social security number with business rules designed to ensure reliably accurate matches.<sup>57</sup> The processes include physical reviews used to resolve questionable matches and to improve the matching processes defined as business rules.

Underlying business rules establish processes that deal with reporting anomalies that occur between systems and over time, including issues such as inconsistently reported data elements, changed elements, and elements that may no longer be reported.

We would discourage the development and use of matching and linking methodologies by schools or districts unless they are essential to the analyses being conducted and there are no other reasonable alternatives. Instead, we suggest using different sources of data to get a larger picture of student postsecondary success that drill down to potential ways to improve results.

The next chapter will discuss working with local postsecondary institutions to gather more fine-grained data on graduates.

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<sup>57</sup> The business rules are defined in a Florida K-20 Education Data Warehouse Meta data application at <http://edwapp.doe.state.fl.us/home.aspx>.

# Collecting Data from Postsecondary Partners

Researchers have learned that enrollment in remedial course work is an indicator of weak postsecondary readiness and, conversely, a negative predictor of future postsecondary success. But individual student data about this phenomenon have been difficult for high schools to acquire. Enrollment in remedial classes is not included in NSC data, and is only recently becoming available in some states' postsecondary databases. Yet this element, more than most others, is the one that most directly reflects back to high schools how well they have prepared their graduates for the rigors of postsecondary preparation.

High schools now can learn from SLDS or NSC data where their graduates have enrolled in postsecondary programs. Because many students attend institutions close to home, high schools and school districts can develop strategic partnerships with the top receivers of their graduates to learn more about the quality of their preparation. They also can build programmatic bridges to address weaknesses that compromise students' futures.

This chapter discusses the potential of working with the postsecondary institutions that receive large shares of a high school's graduates. It includes profiles of two different approaches to working with postsecondary data.

## Tapping into Resources within Reach

In many communities, students choose to attend a local community college, university or technical training institute. This decision is often reinforced by proximity to home, familiarity, assumed cost savings, local traditions, and sometimes a lack of proactive planning to go elsewhere. Once high schools identify which postsecondary institutions have enrolled large shares of their graduates, they can reach across the K12/higher education divide to create partnerships. These cross-sector relationships may help both levels discuss and align academic expectations and create feedback loops that, in turn, lead to improvement in students' preparation for success at the next level.

High schools can acquire some data from local institutions by getting reports from their SLDS or from the NSC. These sources will let them know which institutions students attend, whether they attend part-time or full-time, whether they continue attending in successive years, and whether they have graduated. However, these data only give a partial picture of students' postsecondary status. The data points do not provide adequate information about gaps in students' readiness and thus are not ones that high school teachers can easily see as within their reach to affect

Through a local partnership, both high schools and postsecondary institutions can get more granular, personalized, and nuanced data that, in turn, can help them better understand their students' academic strengths and challenges. These data can be most helpful in shaping new thinking and new practice. Here are a few examples of potential data points that postsecondary institutions can share with their high school feeders:

- Enrollment in postsecondary remedial or developmental course work
- Postsecondary GPA
- Postsecondary credit accumulation

- Postsecondary persistence
- Financial aid
- High School GPA and transcript information

Using these data, the partners can learn:

- How high school GPA correlates with enrollment in postsecondary remedial classes
- How high school GPA correlates with postsecondary credit accumulation
- Whether specific courses taken in high school (e.g., advanced mathematics, Advanced Placement) are associated with higher levels of postsecondary success
- Whether there are varying patterns of success among different racial, ethnic, economic, or language groups
- Whether completing FAFSA forms and receiving student postsecondary financial aid are associated with enrollment and persistence

## New York City Partnership

The partnership between the New York City Department of Education (NYCDOE) and the City University of New York (CUNY) is one example of a local arrangement. Through the negotiation of cross-institutional data agreements, longitudinal data records for individual students are now being used to understand and improve postsecondary success.

### Longitudinal Data-Sharing across Institutional Boundaries: New York City Public Schools and City University of New York

The City University serves 262,000 academic credit students and 269,808 adult, continuing, and professional education students. Almost 70 percent of all current CUNY students are graduates of New York City high schools. The CUNY system encompasses 23 separate institutions including six two-year community colleges and 11 four-year colleges, as well as a graduate school. The CUNY student population is very broad and includes many low-income and first-generation college students.

In 2008, the New York City DOE and CUNY forged a partnership that focuses on improving the postsecondary outcomes for all students in the city. At the core of the partnership is a unique data-sharing agreement that allows the two institutions to match students and track them over time by exchanging student-record-level data.

The joint data agreement enables NYCDOE to go beyond the data available for students enrolled at CUNY through the National Student Clearinghouse, allowing the district to collect and report on finer grain information such as which courses students have taken in college and how well they performed. Currently, the district is able to collect the following information on their students who have enrolled in the CUNY system:

#### *Admissions Data*

- Choice of college (when applying students rank CUNY colleges in order of preference)
- Demographics, including gender, date of birth, ethnicity, place of birth and native language



- SAT scores
- High school credits by subject
- Scores by subject on the New York State Regents examinations

#### *Initial Student Proficiency*

- Whether a student required remediation in reading, writing, or math when entering CUNY
- Scores on CUNY's basic skills exams in reading, writing, and math for those students who are not already exempt from remediation because of their Regents or SAT scores

#### *Enrollment History*

- Dates of semesters enrolled
- Credits attempted and earned
- Majors

#### *Course History*

- Course subject and title
- Credits attempted and earned
- Remedial courses attempted and passed
- Grade per course

#### *Degrees*

- Degree level
- Cumulative GPA
- Graduation date
- Major upon graduation

So far, two major outcomes have resulted from the data-sharing work.

***“Where Are They Now” Reports.*** Using the CUNY data, NYCDOE has created user-friendly reports entitled *Where Are They Now?* The reports, given to each individual high school principal, show the outcomes of different cohorts of their students in the CUNY system. Following the graduates for two years to report on their progress, and comparing them to overall NYCDOE results, each report includes:

- Number and proportion of a school's graduates who enrolled at CUNY in the fall semester following graduation and the type of program (AA/BA) in which they are enrolled
- Percentage of graduates attending CUNY who required remediation in reading, writing, or math
- Persistence of graduates enrolled at CUNY over the first four semesters, separated by whether or not they needed remediation;
- GPA and credits attempted, and credits accumulated, of graduates, separated by whether or not they needed remediation;

- Persistence of graduates enrolled at CUNY over the first four semesters, separated by whether they were enrolled in a BA or AA program;
- GPA and credits attempted, and credits accumulated, by graduates, separated by whether they were enrolled in a BA or AA program.

After the initial distribution of the reports, NYCDOE solicited input from the schools on how to make the reports more user-friendly and then made major enhancements. Now, rather than giving high schools static PDF documents with their data, NYCDOE produces dynamic reports that can be manipulated and disaggregated by school staff. The reports have dashboard pages and tabs that allow schools to toggle between different cohorts and subgroups, and they also allow schools to see trends over time.

***New School Report Cards.*** Each school in New York City receives an annual report card that reports on its school climate, student performance, and student progress. To increase the focus on postsecondary outcomes, NYCDOE has placed three new postsecondary data points into the high school report cards:

- The college preparatory course index, which measures the percentage of students in the cohort that entered high school four years earlier who have met at least one benchmark for college readiness;<sup>58</sup>
- The college readiness index, which measures the percentage of students who entered high school four years earlier who graduated and met the requirements for exempting from remedial coursework at CUNY;<sup>59</sup>
- The college enrollment rate, which measures the percentage of students who entered high school five years earlier who graduated and enrolled in a degree program at a two-year or four-year college by the end of the fall semester following their graduation.

Starting next year, these data points will be figured into the school report card grades and fully integrated into the accountability system in the district.

## A School-level Approach When SLDS Data are Not Available

The example below describes a school-level approach to working with postsecondary data when the desired longitudinal data are not available. At the core, however, the goal is the same: to improve the performance of the school's graduates in postsecondary education. It is important to note that this latter approach usually requires building a working relationship with an individual or group of individuals at the postsecondary level who can be helpful in shepherding the work of getting the remedial course data. If the postsecondary institutions have an office that addresses the problems of students with weak academic skills, this may be the best place to start.

<sup>58</sup> These include scoring 65+ on the Algebra II, Math B, Chemistry or Physics Regents exam, scoring 3+ on any Advanced Placement Exam, scoring 4+ on any International Baccalaureate exam, or earning a C or higher in a course for college credit.

<sup>59</sup> Students can exempt from remedial coursework by reaching score thresholds on the NY State Regents examinations, the SAT, and/or course standards accepted by CUNY.

## Using Data to Foster Curiosity and Engagement in Improving Postsecondary Readiness: Casa Grande High School and Sonoma State College

In Petaluma, California, Casa Grande High School's leaders have a pivotal school goal: to increase the number of college-ready students who graduate able to meet the California university system's A-G entry requirements<sup>60</sup> and able to succeed in college without remediation. The central role played by postsecondary data is reflected in the notes from collaborative teacher planning meetings in the school, which has been a Smaller Learning Communities Program (SLCP) grantee twice. Teachers ask one another, What can postsecondary data sources tell us about the effectiveness of our teaching? Which data sources should we use? How can we best help our seniors move from “conditional” to “college-ready” in math? To what extent do our students' results on final course exams correlate with state tests? How well do our students do at college?

School leaders at Casa Grande want the term “data-driven decision making” to be what they do, not just what they say they want to do. They have used their professional learning communities or PLCs (initially developed through their SLCP grants) as the vehicle to drive this way of integrating data into their everyday work. Teachers are organized into departmental PLCs as well as ninth- and tenth-grade Houses and four eleventh- and twelfth-grade clusters: Green Careers Pathway; Health Careers Pathway; Liberal Studies; and Marketing, Media and Management. PLC conversations occur during weekly meetings lasting one to three hours that sometimes voluntarily spill over to after school and weekend hours.

Through the PLC conversations, sobering schoolwide data can be cut reduced to a manageable size. Finding out that students earned 150 F's in core academic classes can be daunting. But realizing that those grades were received by 85 individual students and only 25 to 30 of those students are in a specific SLC can make the problem manageable. When names and faces replace the numbers, teachers can resist a sense of futility and be moved to action.

Casa Grande leaders know that data are only discrete bits of information, but they can pack a punch depending on the way they are presented and what they mean to individual teachers. Through trial and error, school administrators and teachers have learned to thoughtfully organize any data to be discussed, to know the purpose of the data discussion at hand, and to consider the impact from multiple perspectives.

A school data report card serves as the foundation for analysis at Casa Grande. Over time, school leaders have learned that less is more: they have selected a few high leverage data points from ninth through twelfth grade and from postsecondary sources. They have learned what data generate automatic resistance from staff, as well as what points encourage staff engagement and a desire to respond proactively.

What data cause negative reactions? Examples include state achievement tests requiring substantial class time for preparation and administration that are measured in the spring and reported in the fall when teachers no longer have contact with the students. Data summaries “done to” teachers, presented urgently under the assumption

<sup>60</sup> The A-G requirements include the sequence of high school courses needed to satisfy minimum eligibility requirements for the University of California and California State University systems

that teachers need to be prodded to improve, are not helpful to them.

What data prompt curiosity and a willingness to make adjustments? Data from the test administered under the California Early Assessment Program, measuring readiness for college reading and math, as described below:

The Early Assessment Program (EAP) is a collaborative effort among the State Board of Education (SBE), the California Department of Education (CDE) and the California State University (CSU). The program was established to provide opportunities for students to measure their readiness for college-level English and mathematics in their junior year of high school, and to facilitate opportunities for them to improve their skills during their senior year.<sup>61</sup>

The EAP tests are augmented California Standards Tests (CSTs) in 11th-grade English and mathematics; these tests are part of California's public school testing and accountability system and are required of all students. The augmented tests were developed by CSU and K-12 faculty, who made sure that both the California high school standards as well as the CSU placement standards were covered. The faculty added a writing sample to the English CST, as well as a few more test items, but they kept the time needed for testing to a minimum.<sup>62</sup>

Case Grande staff obtain the data early enough to absorb their meaning, take steps to help students meet postsecondary requirements, and discuss ways to improve what and how they are teaching to get better results. They also can download the data files in order to slice and dice the data by department and small learning community.

At Casa Grande High School, the Mathematics Department Chair, who also sits on the SLC Leadership Team, spearheads the school's EAP initiative. He coordinates with a data person at the Sonoma County Office of Education who is able to query the data; he can then compare those results with school math test performance and course-taking patterns.

The established staff credibility earned by the department chair, combined with his willingness to publicly share his professional concerns about his students' lack of college readiness, offers a powerful example of a teacher using test data to adapt and differentiate his lessons and course designs. His leadership and humble inquiry are paving the way for the English department to do likewise.

Working with the EAP data has led to partnerships with Sonoma State College and Santa Rosa Junior College, the two institutions that receive the majority of Casa Grande's graduates. A faculty member from Sonoma State also has come to speak to Casa Grande's juniors. She encourages them to take the EAP, which is voluntary, explaining how much money they will save if they enter directly into credit-bearing courses instead of remedial classes. Over the past three years, EAP participation has held steady at 99 percent for English, and participation in Mathematics has jumped

<sup>61</sup> Definition downloaded from <http://www.calstate.edu/eap/>. This website includes public access to school and district test results, private student access to their test results and an analysis of their areas of weakness, as well as support for both students and teachers.

<sup>62</sup> Description downloaded from [http://www.calstate.edu/eap/documents/eap\\_program\\_description.pdf](http://www.calstate.edu/eap/documents/eap_program_description.pdf).

from 59 percent to 100 percent.

Not only do the EAP data let students know their college preparedness, but also they challenge faculty to reassess the rigor of their courses. Casa Grande cannot link the students' records across the secondary and postsecondary divide, but they do their best to look at multiple sources of data over the trajectory of students' academic careers. Working with their postsecondary partners, faculty and administrators examine data from the remedial classes students are taking at Sonoma State College. They also look at other California state test data from the California Standards Test (CST) and the High School Exit Examination (CAHSEE), disaggregating the data for all the school's subgroups.

When the high school and its local postsecondary partners meet, the presentation of data is formal, but not uniform. Staff and leadership alike are trying to identify what data sets are the most informative and likely to impact practice, and they continue to study at what point in the school calendar the release of data is most likely to drive action.

These efforts are slowly bearing fruit. Although on the rise, the EAP data indicating college readiness are still alarmingly low, hovering around 31 percent in both English and Mathematics. The postsecondary data have enabled teachers to become deeply engaged in efforts to improve their students' readiness. As the Casa Grande assistant principal explained, "For teachers to change, they have to see a tangible connection between their high school work and what kids do in college. They can feel their impact in seeing students able to enter directly into credit-bearing classes and save money."

The next chapter will discuss some additional ways to collect school-level data that can be useful in understanding a range of factors involved in students' preparation for postsecondary success.

# Using Surveys and Focus Groups

Administrative data from state longitudinal data systems, the National Student Clearinghouse, and district databases can provide valuable guidance about the patterns of achievement and difficulty among different groups of students. Practitioners can form hypotheses about the factors that produce the patterns they see in the data and then gather school-based information to test these hypotheses and provide additional insights that can help guide strategies for improvement. Surveys and focus groups can ask questions that help identify and illuminate underlying issues that are associated with these patterns.

## Using Surveys to Gain More Insight about Patterns in the Data

As with any form of inquiry, it is critical to start by focusing on the questions that most need to be answered. What problems or dilemmas exist in your understanding of how well students—both as a whole and within particular groups—are doing in achieving their postsecondary aspirations? Then, who should be surveyed to find answers to these questions?

Most high schools administer some form of pre-graduation survey to students to find out their future plans. Some conduct follow-up phone or mail-in surveys of graduates, asking where they went after high school. According to one high school administrator, this has become easier in the age of the cell phone, as students often retain their cell phone numbers even after leaving home.

Research in recent years has increased understanding of the kinds of academic knowledge and skills needed to succeed at the postsecondary level. It also has confirmed the importance of a college-going culture and helped define the critical supports needed to increase both aspirations and access to the most appropriate postsecondary options. However, the typical pre-graduation surveys miss a valuable opportunity to ask some carefully chosen questions about how well students are prepared for postsecondary success.

A survey administered to seniors can ask about the extent to which they have been challenged to do the kind of academic work that helps them prepare for success at the next level and about the supports they have received when they encountered academic difficulty. Survey questions also can solicit information about the extent to which students have experienced the elements of a college-going culture or received critical guidance to help them select the right postsecondary options and course work or to help them apply for financial assistance.

In designing the survey instrument, it is important to be strategic in limiting the number of questions asked and to resist the temptation to seek too much information. School staff should begin by identifying what they believe is most important to learn first and from whom. With this in mind, they can develop questions or seek expert assistance to design the questions for any survey to ensure ease of data gathering and analysis.<sup>63</sup> Sites can then use free or low-cost tools, such as Zoomerang or SurveyMonkey, to create online, readily accessible instruments for students to fill out. For the most honest responses, students should be assured that their answers will be confidential, and the amount of identifying information students are asked to provide should be kept to a minimum.

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<sup>63</sup> The Consortium for Chicago School Research provides examples of past student surveys on its website (<http://ccsr.uchicago.edu/content/index.php>); these include several surveys with questions for high school seniors. In some cases, CCSR notes that permission to use these questions must be requested.

### *What Kinds of Survey Questions Are Helpful in Understanding Postsecondary Preparation?*

Student surveys provide a good opportunity for asking students how different actors in the school (teachers, counselors, administrators, and peers) shaped their thinking about what to do after graduation. For example, survey questions can ask about the following.

- The messages student hear in school about the importance of postsecondary education:
  - from teachers in classes
  - from counselors
  - in informal interactions with school personnel
  - from peers
- The extent to which students perceive that teachers expect all students to pursue postsecondary education options
- The extent to which teachers and counselors at the school have helped students plan for their future in such areas as:
  - career inventories and educational requirements of different career options
  - advice about the range of available career and college options
  - guidance about choosing appropriate postsecondary options
  - college-exploration activities (materials, websites, speakers, visits)
  - concrete assistance in negotiating the application process and filling out financial aid forms

Survey questions also can ask about the kind of academic preparation students have experienced.

- The extent to which students have had the kinds of challenging academic experiences that prepare them for postsecondary academic work, such as:
  - taking a college preparatory course load
  - writing research papers using external sources of information
  - taking advanced classes (honors, Advanced Placement, International Baccalaureate) or college courses
  - attending college programs in the summer
- The extent to which students have been able to get support from teachers that helped them succeed and take on more difficult course work
- The extent to which students have developed critical learning behaviors and study skills

The analysis of the survey data need not be complicated. Little statistical sophistication is needed to get a picture of how widespread these experiences are in the senior class. For a somewhat more fine-grained analysis that can identify differences in the extent to which groups of students have the same experiences and perceptions, the survey should include some basic descriptive questions about the student (gender, race/ethnicity, general level of academic performance<sup>64</sup>).

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<sup>64</sup> It is difficult to include socioeconomic status in surveys—usually measured by asking about eligibility for free and reduced-price lunch—as adolescents often are hesitant to reveal this information and sometimes do not know their free-lunch eligibility or economic status.

## Conducting Focus Groups to Tap Student Perceptions

Students often have valuable insights about which aspects of high school preparation truly helped or hindered them. These insights may not be evident in their responses to survey questions and may need to be collected through other means. Focus groups often are used to help illuminate the patterns that surface from analyses of quantitative data. Data collected through focus groups also can surface new questions that can be tested through survey and other quantitative data.

### Designing and Conducting Effective Focus Groups

Purpose: Focus groups are interactive, unpredictable, engaging, and variable. A focus group can generate interesting information that is unlikely to surface through other means. It can offer insights into ideas that can be followed up in more detailed interviews or document reviews. As such, focus group data are most valid when triangulated with data collected from other sources. The primary uses for focus groups as a data source include: problem identification, planning, implementation, and assessment.<sup>65</sup>

**Table 4. Characteristics of a focus group**

What A Focus Group Is...	What a Focus Group Is Not...
A qualitative research method best used in conjunction with other data gathering techniques	A source of information that can be generalized as also true for others
A guided group discussion eliciting participants' experiences and beliefs	A go-around where each participant must answer each question
Focused conversation with a series of planned questions	A free-for-all conversation about a topic
Dependent on participants' willingness to trust in the process and share relevant information	Required Q and A where participants are compelled to respond
An opportunity for the facilitator to listen carefully and clarify	A chance for the facilitator to share personal opinions or beliefs

*Structure and Process:* In planning a focus group, it is important to clarify the goal and purpose of the planned focus groups, which will in turn help determine:

- The degree of structure in the conversation
- How to recruit participants for the focus group and who should be represented
- How many and which participants should be in each group and how long it should last
- The number of groups to be conducted
- Logistics (room set-up, food, etc.)
- Confidentiality procedures, and
- The contents of the opening statement

*Importance of the Opening Statement:* The opening statement of a focus group is critical in setting the stage for the conversation and building an environment of openness and trust so that participants feel comfortable sharing their perspectives. Standard components of the opening statement include:

- Welcome and appreciation for participation
- Purpose of the focus group discussion
- What will be done with the records of the conversation (notes and tape)

<sup>65</sup> David L. Morgan and Richard A. Krueger, *The Focus Group Kit* (Thousand Oaks, CA: Sage Publications, 1998).



- Level of confidentiality guaranteed to participants
- Role of the facilitator
- What to expect as the conversation proceeds (time and process)
- Ground rules
- Request for participants' affirmation to abide by ground rules and proceed.

*The cycle of questions:* Focus groups follow a cycle that begins by engaging the participants and then move through an introduction into the core areas of inquiry. The table below shows the cycle of questions. (A script for the opening statement and suggestions for an initial activity to encourage engagement is included at the end of this chapter.)

**Table 5. The cycle of focus group questions**

Question Type	Purpose
Opening	Participants get acquainted and feel connected
Introductory	Begins discussion of topic
Transition	Moves smoothly and seamlessly into key questions
Key	Obtains insight on areas of central concern in the inquiry
Ending	Helps researchers determine where to place emphasis and brings closure to the discussion

It is important to ask questions that are concrete and not abstract. Participants should be queried for their personal experiences rather than general opinions. Questions should be open-ended and invite elaboration, without asking for explanations. When giving examples, it is useful to ask for positive and negative examples separately, beginning with positive ones.

Examples of some classic focus group questions:

- What do you expect to do after graduating from high school? Who in this school talks with you about your future plans?
- Has anyone talked to you about what it takes to get to college? What is involved in getting into college?
- Do you know anyone who goes to college? What does it take to get into college? What does it take to succeed in college?
- How do you decide whether you are “college material”? What are some ways that you can tell that you are capable of going to college?
- Have you thought about paying for college?
- How have you made your decisions about where you want to study after high school?

### **Adaptation of Focus Group Protocols for Less Formal Group Conversations**

In some cases, less formal group conversations may be useful in gathering individual stories from personal experiences and thoughts of students, teachers, and guidance staff. These conversations can be a productive way of collecting evidence of strategies that support student achievement and insights/opinions about weak postsecondary preparation.

Recommendations for adapting typical focus group protocols to structured small group conversations include:

- *Size:* Six participants maximum per group is ideal, but if a larger group appears they would not be turned away, and facilitators can adapt to a group interview format.

- *Time:* Short enough to fit within a class period to minimize school-day disruptions.
- *Introduction:* Clarification of purpose, process, confidentiality, and use of results.
- *Number of questions:* five to six maximum, due to shortened length of each focus group.
- *Content:* Relevant, concrete, open-ended questions that ask the perspective of each participant group. Questions should encourage the telling of stories and real experiences. Ask “what” and probe for clarification and detail; they should resist asking “why.”
- *Process:* A short, factual go-round at the start lets each participant speak; a brief paper and pencil strategy deepens engagement, especially for students. The goal is to seek facts, examples, and stories rather than engage in opinion-driven discussions or arguments.
- *Flexibility:* The facilitator can either run all communication through him/herself (like the hub of a wheel) or encourage intra-group conversation where participants react directly to one another’s statements.

There are different approaches to analyzing focus group data. The first involves reading carefully through the notes to pull out the recurring themes and examples of them in the conversations. A second approach after having conducted multiple focus groups on the same topic is more quantitative. Here, after pulling out the main themes, the occurrences of similar statements can be counted to get a sense of the frequency of a topic—e.g., teachers’ comments about continuing education after high school—that has taken place during the conversations.

### Sample Opening Statement for Focus Groups

Welcome and thanks for your willingness to help us learn more about what your high school is doing or can do in the future to improve students’ success in college. This information will help us give feedback to the leadership of this school and other schools like it.

I will take notes so that we can accurately remember your comments when we write our summaries. I will keep the notes and will not share them with others. I will never use your name or connect you with your comments; I will guarantee that this conversation is confidential. This conversation will not be anonymous since there are others who are aware that you are participating. Again, the information from this focus group will not be shared with anyone else in your school.

I will ask a series of questions. Not everyone will answer each question. Sometimes I may directly invite you to respond. You may always pass. I will try to make sure everyone can join in. If you’ve already made some comments, I may ask you to pass and let others participate.

Our focus group will last about XX minutes.

Ground Rules: Please let one person speak at a time. Speak from your own personal experience. You are not representing others or a group. Let’s show respect for different views. It is OK to differ. And, please refrain from using any names when telling a story – say “a teacher” or “a friend,” or something like that.

Can everyone agree to these guidelines?

Is everyone still willing to participate?

OK, let's begin.

### *Opening Strategies to Engage Participants*

One way to get participants engaged is to begin by asking them to do a brief writing exercise and then share their results.

- Ask participants to jot down three adjectives about X (something related to the topic).
- Mark an X on a continuum and explain why location of item is chosen.
- Complete a sentence about X.
- Make an analogy about X.
- Make notes about a positive or negative experience that exemplifies X.

The next chapter discusses how to begin to answer these questions. It will focus on framing the questions, identifying what kind of data are needed, and requesting the data from the common sources of longitudinal student data.

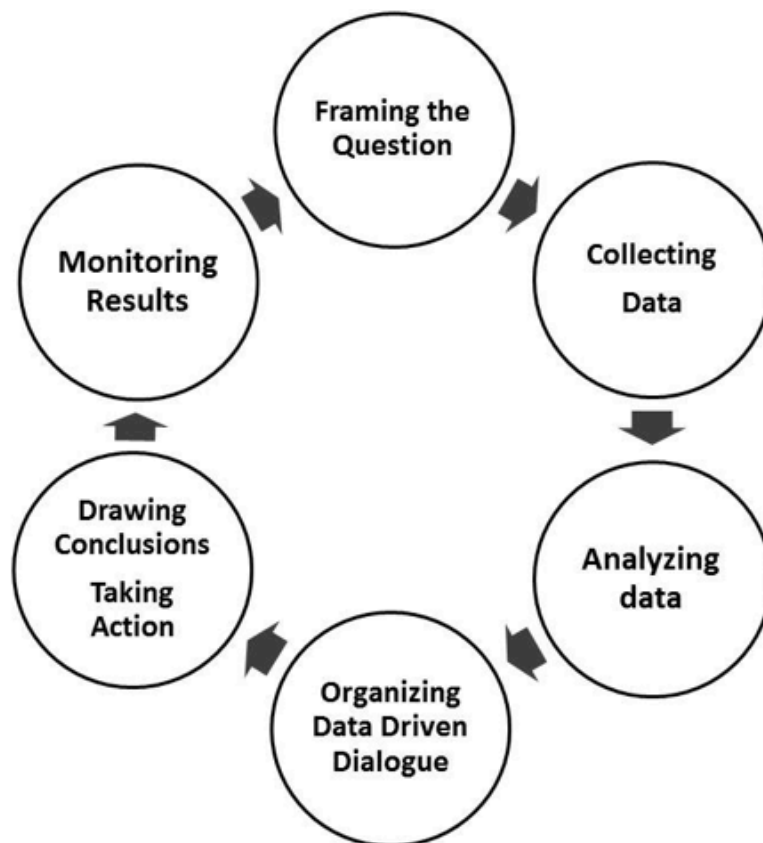
# Framing Questions and Collecting Data

This chapter begins by discussing the process of developing questions for inquiry about postsecondary readiness, access, and success. It will then provide practical advice on the process of collecting data, including how to determine what data are needed and the procedures needed to receive the data.

## Step One: Frame the Questions and Identify the Data Needed to Answer Them

The first step in planning a quest for data from any source is to identify what data elements are needed—a process that begins by framing the essential questions that are to be answered. Using data to inform the learning process is part of a cycle of inquiry, as shown in figure 9.

Figure 9. The cycle of collaborative inquiry



NOTE: Based on Nancy Love, *Using Data/Getting Results: A Practical Guide for School Improvement in Mathematics and Science* (Norwood, MA: Christopher-Gordon Publishers, Inc., 2002), p. 32.

It is best to start with a simple, clearly focused question that helps narrow down the data you will need to consult. The research described in Chapter Two provides guidance about the elements that may be most useful as the focus of inquiry. Here are a few examples of questions that emerge from the research on postsecondary readiness, access, and success.

*Postsecondary readiness:* Based on research that has shown higher levels of postsecondary success for students who have passed higher levels of secondary mathematics, the following questions could be asked:

- Which advanced mathematics courses have our students taken?
- Which students are taking advanced mathematics and science classes?
- What are the differences between students who have taken advanced mathematics classes and those who have not?

*Postsecondary access:* Based on research showing that attending postsecondary institutions for which a student is overqualified is linked to lower levels of postsecondary success, the following questions could be asked:

- Where do our students enroll in college?
- Do our students attend educational institutions that are matched to their qualifications?
- What are the differences between students whose choices match their qualifications and those whose choices do not?

*Postsecondary success:* Given the research showing that the ability to enroll directly in credit-bearing course work is a major factor associated with postsecondary persistence and success, the following questions might be posed:

- What percentage of our graduates needs to take remedial or developmental classes at the postsecondary level?
- What percentage of our graduates earns 20 credits in their first year of postsecondary study?
- What are the differences between students who earn 20 credits and those who do not?
- Once the questions are determined, you will compile a list of the kinds of data elements needed from secondary and postsecondary sources to answer them.

Table 6 provides examples of data elements needed to answer these questions for a specific cohort of students (e.g., students who entered ninth grade in 2009).

**Table 6. Examples of data elements**

Data Element	Synopsis	Likely Source of Data
Individual Identifiers	State Assigned ID	SLDS
	Name	District Data System
	Birth Date	
	Social Security Number	
	Home Address	
Student Characteristics	Gender	SLDS
	Race/Ethnicity	District Data System
	Free/Reduced Lunch Status	
	Limited English Speaking	
	Disability Status	
School	High School (s)	SLDS
	Middle School (s)	District Data System
Test Data	NCLB summative tests	SLDS
		District Data System
Course Data	Course name & taxonomic reference	SLDS
	Course Grade	District Data System
Acceleration Course Data	Dual or concurrent enrollment	SLDS
	Advanced Placement	District Data
	International Baccalaureate	
"Placement" Test Scores	ACT	SLDS
	SAT	District Data
	Common Placement tests	
Student Graduation Data	Diploma Type	SLDS
	Award Date	District Data
Postsecondary Enrollment	Postsecondary Institution Type	SLDS
	Postsecondary Institution Name	National Student Clearinghouse (NSC)
	Term date first entered	
	Term designation	
Postsecondary Remediation	Remedial English/Math/Both	SLDS
	Successful completion of remediation	Local Postsecondary
Postsecondary Credit Accumulation		SLDS
		Local Postsecondary
Postsecondary Persistence	Persistence second term	SLDS
	Persistence second year	NSC
Postsecondary Courses	Course name and taxonomic reference	SLDS
	Course Grade	Local Postsecondary
Postsecondary Graduation	Degree Type (associate's, bachelor's, certificate, employer certification)	SLDS
	Degree Major	NSC
	Award Date	

## Step Two: Define the Cohort for Which You Will Request Data

After defining which data elements are needed to answer your questions, the next step is to define a cohort of students whose data will be collected. This requires thinking about the breadth of information needed going “backwards and forwards.” You will need to have data that goes back far enough to capture the data points in high school that your questions require and forward enough for the postsecondary data system to have data on the outcomes you are interested in studying.

For example, if your questions involve how high school performance in advanced mathematics of recent graduates is related to postsecondary performance, you will need to follow a set of previous graduates backward at least two years to capture data from the years during which they would have taken advanced mathematics classes, and forward at least two years into their postsecondary education to see whether they needed to take remedial classes and how many credits they accumulated in the first year of postsecondary study.

On the other hand, if your inquiry concerns how well all students from your high school fared at the postsecondary level, you will need data that goes back to the beginning of their high school career to capture the full cohort. In addition, you will need data going forward enough for their graduation outcomes to have entered the postsecondary data systems—as much as four years after high school graduation.

Simply stated, the choice of a cohort beginning with 2012 high school graduates would provide little insight into postsecondary success in 2012. An optimal choice would be those students who graduated from high school in 2006 (those who were in the ninth grade in 2002) and who are likely to graduate from college by 2012. The K12 data system would need to be able to provide four years of course-taking data “backwards” and the postsecondary resource would need to provide six years of data going “forward.” In the best case, the objective will be to build a complete high school course-taking and related performance record for each student during his or her high school career.

An additional step may be required that involves translating the names of the data elements you need into a form that is recognizable as those from whom you are requesting data. In most cases, the “translation” will depend upon the data source. Although there will be some similarities, each one is likely to have its own conventions and definitions,

Most sources will have a “data dictionary” or a “meta data application” that provides data element definitions, naming conventions, reporting protocols and values, and a data element number. In most cases, the relationship between the types of data elements listed in table 10 and the elements identified in the data dictionaries will be straightforward.

To ensure that the desired elements are clearly defined, it is recommended that you take the additional step of translating the data elements you need into the form recommended in the Common Education Data Standards.<sup>66</sup>

## Step Three: Request the Data

The next step in the process is requesting the data from the appropriate source, such as the NSC,

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<sup>66</sup> The Common Education Data Standards (CEDS) process (see <http://ceds.ed.gov/elements.aspx>) has defined hundreds of data elements typical of secondary and postsecondary data systems. They were developed in collaboration with school districts, state education agencies, postsecondary institutions, state postsecondary systems, and national groups such as the Chief State School Officers, the American Association of Community Colleges, and the State Higher Education Executive Officers organization. While national, state, and local systems do not necessarily conform to the taxonomies contained in CEDS, CEDS is broadly recognized and provides a common, agreed-upon language for the type of work discussed here. The latest version of the standards has included more depth about adult education and CTE in addition to K12 and postsecondary, as well as elements related to employment and earnings.

state data organizations, school districts, and postsecondary institutions. The process for making requests varies from state to state and district to district, so it is important to check to see what each recommends as the process for requesting and receiving data. In addition, the request will need to be consistent with the protections required by the Family Educational Rights and Privacy Act (FERPA).

### *The Family Educational Rights and Privacy Act*

The Family Educational Rights and Privacy Act, known best as FERPA (20 USC 1232g), is a federal law that protects the privacy interests of parents and students in a student’s “education records.” FERPA affords parents the right to have access to their children’s education records, the right to seek to have the records amended, and the right to consent to the disclosure of personally identifiable information (PII) from education records, except as provided by law. The law applies to educational agencies and institutions that receive funds under any program administered by the Secretary of Education. This generally includes schools, school districts, colleges, and universities where students attend.

Under FERPA, a parent or eligible student (i.e., a student who turns 18 years old or enters a postsecondary institution at any age) must provide a signed and dated written consent before the educational agency or institution discloses education records or PII from education records. FERPA includes exceptions to the general consent requirement which are set forth in § 99.31 of the FERPA regulations. The exception that is particularly relevant to this guide pertains to the disclosure of information from education records to “organizations conducting studies for, or on behalf of, educational agencies or institutions for the purpose of developing, validating, or administering predictive tests, administering student aid programs, and improving instruction.”<sup>67</sup> This type of disclosure is permissible without requiring prior written consent if the study is conducted in accordance with the requirements in § 99.31(a)(6) of the FERPA regulations, including meeting all the requirements for written agreement under the studies exception. (Links to additional resources for addressing FERPA are included at the end of this chapter.)

It is important to recognize that every organization that collects and manages education data derived from education records will need to implement data-sharing procedures that address the confidentiality and security provisions of FERPA. These procedures may vary according to the way local educational agency officials choose to implement the requirements under FERPA and its regulations, as well as the policies and laws governing their own particular agencies.

The protective procedures need to be evident in data request applications and data exchange agreements, contracts, or memoranda of understanding. The common thread of the content in the agreements will be that they are intended to ensure compliance with the FERPA requirements in § 99.31(a)(6)(iii)(C). The common elements that need to be addressed in a written agreement or contract are as follows:

- 1) The agreement must specify the purpose of the study, describe the scope and duration of the study, and the information to be disclosed.
- 2) The agreement must specify that the PII from education records must only be used for the study identified in the agreement.
- 3) There must be a requirement that the organization conduct the study in a manner that limits access to PII from education records only to representatives of the organization with legitimate interests.
- 4) There must be provisions for destroying all personally identifiable information when the in-

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<sup>67</sup> SLDS Technical Brief, *Guidance for Statewide Longitudinal Data Systems (SLDS)* (NCES 2011-601, November 2010), 4.



formation is no longer needed for the purposes for which the study was conducted and the time period specified in which the information must be destroyed.

## Ensuring Data Security

As a potential recipient of confidential student data, the local school and district teams will need to establish security procedures designed to protect the data from inadvertent release.<sup>68</sup> The team should expect that it will have to describe its security processes as part of working with data providers on data-sharing agreements, covering three kinds of procedures:

- 1) **Technical Procedures:** These include establishing firewalls, network and physical security, data storage protocols, password processes, and secure data destruction processes.
- 2) **Nontechnical Procedures:** These define who can access and view what data, where the data can be accessed, and under what conditions.
- 3) **Publication Procedures:** These define the processes for reviewing data products to ensure individual identities are not inadvertently released because of small cell sizes or separate data displays that can be combined to reveal identities.

In some cases, the team may choose to establish and manage its own data security procedures; in others, they may work with an existing facility that has well-established FERPA-compliant procedures, such as their school district or a postsecondary institution data center.

Finally, it is important to allocate sufficient time and resources to develop the data request and negotiate the procedures needed to receive it. Once established, future data requests usually require less time and effort.

The next chapter discusses an approach to working with the data that can help practitioners better understand their situation and weigh options for action.

### ADDITIONAL RESOURCES FOR ADDRESSING FERPA

Recent revisions to FERPA Regulations in December 2011 (34 CFR Part 99) provide new and clarifying requirements related to SLDS systems and sharing data between secondary and postsecondary data resources. The December 2, 2011, regulations implementing FERPA are available at <http://www2.ed.gov/policy/gen/reg/ferpa/index.html>. Other information and resources are available on the Family Policy and Compliance Office website at <http://www2.ed.gov/policy/gen/guid/fpco/index.html>.

The U.S. Department of Education has established a Privacy Technical Assistance Center (PTAC) to act as the “one stop” resource for education stakeholders to learn about data privacy, confidentiality, and security practices related to student-level longitudinal data systems. PTAC provides timely information and updated guidance on privacy, confidentiality, and security practices through a variety of resources, including training materials and opportunities to receive direct assistance with privacy, security, and confidentiality of longitudinal data systems. Information about the resources and tools are available from <http://ptac.ed.gov/>.

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<sup>68</sup> A synopsis of procedures is available from the Privacy Technical Assistance Center at <http://www2.ed.gov/policy/gen/guid/ptac/technical-briefs.html>.

# Working with the Data

*“Despite the increased amounts of data available, many educators still feel ill prepared to analyze and use their school data effectively. They are data rich but information poor.”<sup>69</sup>*

The current focus on the power of data sometimes appears to assume that data constitute a self-actualizing tool. Datasets themselves do nothing. People improve schools; datasets inform the people, helping them make smarter—and at times difficult—decisions. The educators deciphering the data and receiving the messages within them must subsequently take action. A clear understanding of the meaning of a data set (or combination of them) can help practitioners understand their challenges and choose possible solutions. It also can strengthen their resolve to change ineffective practices or reinforce decisions and practices that appear to be on the right path.

This chapter will discuss the remaining elements of the data cycle of collaborative inquiry introduced in figure 9 in Chapter Six—analyzing data, organizing data-driven dialogue, drawing conclusions and taking action, and monitoring results.

## Step Three: Analyze and Present the Data

Using postsecondary data for the purpose of helping schools improve their work on postsecondary readiness and access does not require advanced statistical calculations. Charts of regression analyses are likely to be greeted by most teachers and administrators with blank stares. Rather, simple frequencies and cross-tabulations are generally what are needed to show the patterns that emerge when the data are analyzed. The analyses could be guided by findings from the highly detailed analyses carried out by researchers, as described in the Introduction to this guide.

Data themselves are neutral sets of information. Their power rests in their meaning to different audiences and in the actions emerging from discussions of that meaning. Therefore, there is no one right way to present data to practitioners or a broader community.

Often, data results must be reconfigured before being shared with others because they appear in dense, hard-to-decipher charts with confusing labels. Because people absorb information differently, multiple ways should be used to present the same data, including simple charts with numbers, graphic presentations that highlight important patterns, and verbal descriptions of what the data show.

For example, when analyzing the way different factors are related to students’ choices of postsecondary education options, a simple table could show the enrollment of graduates in postsecondary institutions with different levels of selectivity. This table would then be followed by a series of tables with the same enrollment results broken out by the graduates’ characteristics, such as gender and race/ethnicity, or by whether students had completed advanced courses in mathematics, or by their GPA and ACT or SAT scores, or by whether graduates had submitted FAFSA forms to receive financial aid. Each table could be coupled with a graph showing the results, as well as a short narrative description of what the graph and table present.

When urgent desires for improvement exist, data can appear to be handy tools to prod others to action. Resisting that seemingly easy approach is critical. Punitive use of data leads to low morale, creating more resistance than action. Alternatively, a positive use of data can leverage increased school and community support for improvement.

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<sup>69</sup> David Ronka et al., “Answering the Questions That Count,” *Educational Leadership* (December 2008/January 2009), 18.

## Step Four: Organize Data-Driven Dialogue

*“Our schools celebrate these data but I’m not sure they use them to impact practices to increase postsecondary access and success.”—Smaller Learning Communities Grant Project Director, November 2011.*

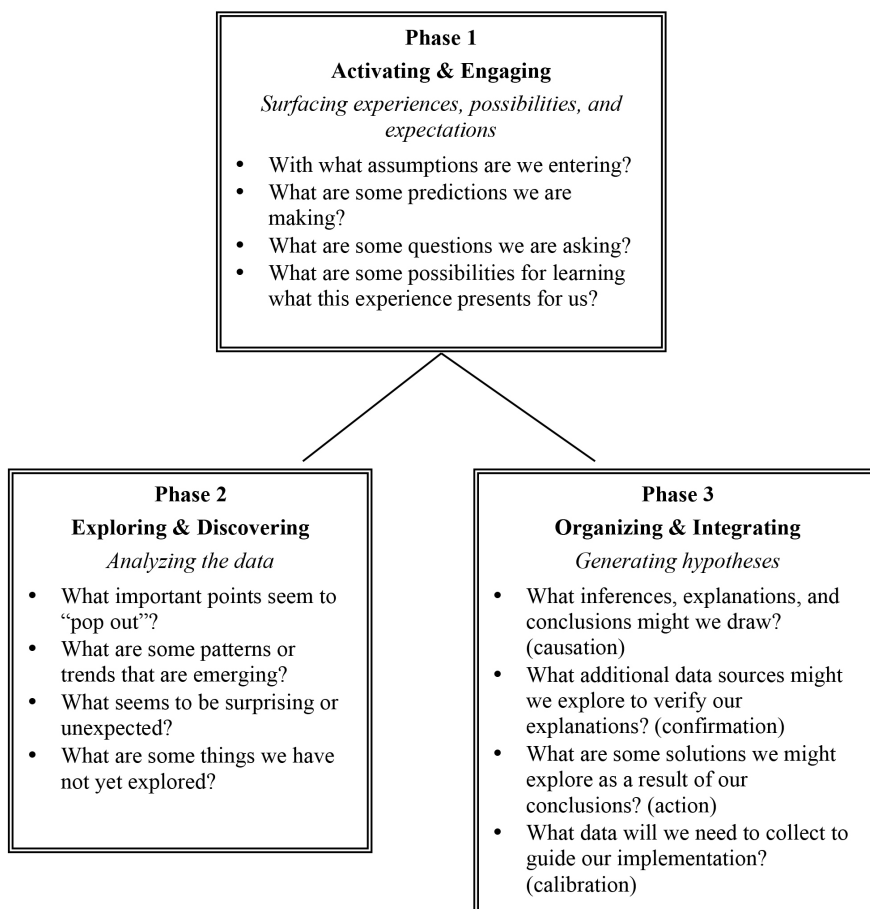
When presenting any data, consider some basic ground rules for data presentation:

- Who is the immediate audience?
- Why are you sharing the data with them?
- What do you expect them to do with the information?
- Are the datasets clear and easily understood? To what extent is explanation required to interpret the data?
- Who is best suited to determine what the data say—the presenter or the audience?

The answers to these questions can guide choices about what data to present and how to do it. It is important to think about a cycle of inquiry and where the particular data presentation sits in that cycle. Leaders need to make the best decisions they can at a particular moment in time and then move forward confidently, all the while knowing that they may need to make adjustments as new data are presented and reviewed as part of the cycle of inquiry for continuous improvement.

Figure 10 shows three recommended phases of collaborative dialogue to engage practitioners in discussion about data in ways that can inform changes in practice.

**Figure 10. Three phases of data-driven dialogue**



NOTE: Adapted from Bruce Wellman and Laura Lipton, *Data Driven Dialogue: Tools for Collaborative Inquiry* (Sherman, CT: Miravia, LLC, 2004), cited in Love, *Using Data/Getting Results*, p. 45.

The first phase, *Activating and Engaging*, lays the groundwork for productive discussions about the data by asking the participants to build on their experience and knowledge to think about the central questions of their inquiry and what they expect to learn. The second phase, *Exploring and Discovering*, asks the participants to take one or two elements of data and examine them, trying to see the patterns or trends. This phase is about observing what appears in the data rather than trying to explain it.

Data discussions sometime raise new questions about other variables and how they might affect the patterns in the data. In some cases, these additional questions can be anticipated, and the analyses of the data needed to answer these new questions will be easily available in the detail that breaks out the data by different categories. Sometimes, new questions will require new data collection, such as student surveys or focus groups, to help examine what might explain the patterns in the data.

The third phase, *Organizing and Integrating*, moves participants toward generating hypotheses and advancing possible explanations for the patterns in the data, helping them to zero in on the underlying factors that need to become their focus for action. In this phase, participants can discuss what the patterns in the data suggest might work to change those they have observed, and begin to stake out benchmarks to measure in the future to see whether the action they take has the desired effects.

### Step Five: Draw Conclusions and Take Action

The next step in the cycle is to draw conclusions about the factors that appear to be most important to address in changes in practice. It is important to remember to maintain the focus on the factors that can be addressed by the school and district, rather than those external to it. In addition, because schools are complex systems, discussions about next steps should place the actions being contemplated in the context of the larger school system, and identify what resources will be needed to move forward.

### Step Six: Monitoring Results

To complete the cycle of inquiry, the next step is to determine a set of concrete and measurable benchmarks to monitor progress toward improving postsecondary readiness, access, and success. For example, if the central question of the inquiry has been disparities across groups in the numbers of students taking advanced mathematics courses, the progress indicators could include improved grades achieved in lower-level mathematics courses (reflecting a stronger foundation for taking advanced classes), the number and proportion of students from different groups enrolling in advanced mathematics course work, and their average grades in these classes.

The following case study shows how this process played out when five high schools in Maine banded together to improve student outcomes.

#### Maine Smaller Learning Communities Consortium: Data-Driven Planning

In 2006, a consortium of five comprehensive high schools in Maine were awarded a Smaller Learning Communities Program (SLCP) grant from the U.S. Department of Education to convert their schools into small personalized learning environments. In an effort to monitor the progress of the SLCs and gauge their effectiveness on stu-

dents, Bonny Eagle, Lewiston, Noble, Oxford Hills, and South Portland high schools sought out the University of Massachusetts Donahue Institute (UMDI) to serve as a third-party evaluator.

To carry out the evaluation, UMDI generated a longitudinal student database that compares student data by subgroups (e.g., gender, ethnicity, grade, SLC, and course grades) and analyzes trends over time. The database also incorporates qualitative data such as teacher and student surveys, a longitudinal study done over the life of the grant, and annual site visits. The next step was to incorporate NSC data to identify postsecondary trends.

### **First Step: Central Questions for the Program Evaluation**

UMDI conducted this work over a two-year period, from February 2010 to June 2011. UMDI's goal for the first year was to answer the following questions:

- What is the profile of students who attend postsecondary education? How does this compare with students who do not attend further education or pursue other options (if available)?
- What happens to high school graduates (by all subgroups including gender, race, income status, special education status, etc.) after matriculating in higher education? Do they successfully continue?

*Collecting the data:* The student data needed to answer these questions came from two sources: individual student records from the five high schools and the NSC. Individual student records were collected from the high schools for the 2006–2007 through the 2010–2011 school years, including demographic characteristics, grades, attendance, academic performance, and postsecondary plans. The NSC consisted of data for the 2007, 2008, 2009, and 2010 high school graduates, including college attendance, dates of enrollment, names of institutions (two year and four year), graduation date, and field of study. Of all the 2007–2010 graduates, 50–71 percent of students were found to have attended some form of postsecondary institution, depending on which of the five schools they attended.

UMDI's findings varied slightly across the schools but identified common trends. Most of the findings were not surprising: Special Education students, students who receive free or reduced-price lunch, and students with poor attendance or violence- or alcohol-related suspensions or expulsions or course failures, were less likely to attend a postsecondary institution. Performing well on the SAT examinations, mathematics, or English courses or taking at least one AP-level course increased a student's likelihood of postsecondary matriculation.

*The importance of core course failures.* Because of the wide scope of data collected, UMDI was able to look at postsecondary persistence as well as access. Students who failed a core course were less likely to enroll in college. Among students who failed one or more English Language Arts (ELA) courses, only 13 percent enrolled in college, versus 59 percent for those students who passed all of their ELA courses. For students who failed at least one course in any of the core subjects, 28 percent enrolled in college, while 63 percent of students who passed all of their core subjects enrolled. Failing a core course also had an effect on persistence in postsecondary education. Overall, 53 percent of students who failed one or more core courses persisted in col-

lege, while 84 percent of those who passed all of their courses persisted.

### **Second Step: Data Retreats**

Once the data have been collected and analyzed, what do you do with it to lead to change? Members of the Maine consortium asked themselves that exact question. The answer was to engage in a series of data retreats to learn to take part in meaningful discussions about the data that can then inform an action plan. Each school created a four-person team made up of the SLC coordinator, data coordinator, an administrator, and a guidance counselor. These teams met three times a year for a full-day data retreat.

The data retreats used protocols from the book *The Data Coach's Guide to Improving Learning for All Students*.<sup>70</sup> The central purpose of the retreats was for each team to learn how to analyze and discuss data in a way that is meaningful and could inform sustainable action. The teams would then take back their new knowledge and skills to their respective high schools to share with the rest of the staff.

The focus of *The Data Coach's Guide* is three-pronged:

- To contribute to “dramatic and permanent school improvement”
- To support the ethical determination that school will be good for every student
- To provide the technical process by which to accomplish purposes one and two

The retreats focused on two questions: “What are the commonalities among students who enroll in postsecondary institutions?” and “What can we do to give all students access to these common characteristics?”

The teams examined the data to discuss what was behind the UMDI evaluation findings. They began to see that, once past the usual red flags (i.e., attendance, core course failure, and behavior), the factor that appeared to be most associated with postsecondary persistence (being enrolled in a postsecondary institution in the fall of the second year following graduation) was taking and being successful in at least one Advanced Placement (AP) course.

Now that a postsecondary student profile had been uncovered, the teams needed to put it into action. The action plans varied by school, but all had a common theme: to increase the number of students taking AP-level courses. Some of the high schools eliminated the “gatekeepers” for their AP courses, such as prerequisite honors courses, teacher recommendations, or GPA requirements. Another high school partnered with the local community college to create a satellite site in the school where high school students could take college evening classes for credit.

These efforts have paid off, as table 10 shows. National Student Clearinghouse data indicates that four of the five schools now are sending more students on to postsecondary education.

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<sup>70</sup> Nancy Love et al., *The Data Coach's Guide to Improving learning for All Students*. (Thousand Oaks, CA: Corwin Press, 2008).

**Table 10: Percent of graduates enrolled in postsecondary education**

	2005	2006	2007	2008	2009	2010	gain
Bonnie Eagle	46%	48%	56%	44%	52%	61%	15%
Lewiston	55%	59%	52%	64%	57%	60%	5%
Noble	37%	41%	48%	54%	53%	58%	21%
Oxford Hills	51%	45%	46%	52%	49%	49%	-2%
S. Portland	66%	64%	57%	57%	62%	67%	1%

Source: NSC Reports, Spring 2011.

The data analysis in this example, as well as the others cited in the earlier profiles, does not depend on sophisticated statistical analyses. But with a collaborative review of fairly simple data, sometimes with external assistance, teachers and counselors have made invisible factors that were holding their students back visible and made targeted action possible. In doing so, they have been able change the numbers and to alter the lives of the young people they serve.

# Closing Remarks

The advent of longitudinal data systems has greatly increased the capacity of researchers, policy makers, and practitioners to learn about students' trajectories over time and institutions. As this guide is being written, the state longitudinal data systems (SLDS) are still evolving, as is the research base on what factors matter most in preparing today's young people to be tomorrow's successful adults.

But even as the systems improve and our knowledge grows, the challenge remains in how to translate the advances in research and improvements in data access to changes at the classroom and individual student level. The approaches described in this guide to working with data with the goal of improving the postsecondary chances of students are solid and time-tested ways that practitioners can turn data into action.



# Footnotes

- <sup>1</sup> The asset analysis was conducted using a tool developed by the CPSP technical support partner, FHI 360; it can be found at <http://www.fhi360.org/resource/navigating-college-readiness-through-asset-mapping-fact-sheet>. This tool is based on David Conley's research on college readiness and organized into four categories: academic behavior, cognitive skills, contextual skills and content knowledge. It also draws from Educators for Social Responsibility's work on increasing college access, particularly the development of a continuum of support starting in the ninth grade, as discussed in "A Suggested Outline for Postsecondary Preparation," from *Increasing College Access through School-Based Models of Postsecondary Preparation, Planning, and Support*. (Cambridge, MA: ESR, January 2009); as well as the Pathways to College Network (PCN) College Readiness for All Toolbox, accessed December 10, 2009, <http://toolbox.pathwaystocollege.net/>.
- <sup>2</sup> FACTS.org is Florida's Academic Counseling and Tracking for Students. Sponsored by the Department of Education and the Florida Center for Advising & Academic Support, this free online advising website helps students plan and track their education progress from middle school through college.
- <sup>3</sup> Laura Isensee, "Getting a Jump on College (at a Discount)," *Miami Herald*, posted Feb. 22, 2012.
- <sup>4</sup> Chicago Public Schools, "CPS students post record FAFSA completion rate," press release, February 28, 2011.
- <sup>5</sup> Jay Sherwin, "Make Me a Match: Helping Low-Income and First-Generation Students Make Good College Choices" (MDRC Policy Brief, April 2012).
- <sup>6</sup> These include scoring 65+ on the Algebra II, Math B, Chemistry or Physics Regents exam, scoring 3+ on any Advanced Placement Exam, scoring 4+ on any International Baccalaureate exam, or earning a C or higher in a course for college credit.
- <sup>7</sup> Students can exempt from remedial coursework by reaching score thresholds on the NY State Regents examinations, the SAT, and/or course standards accepted by CUNY.
- <sup>8</sup> The A-G requirements include the sequence of high school courses needed to satisfy minimum eligibility requirements for the University of California and California State University systems.
- <sup>9</sup> Definition downloaded from <http://www.calstate.edu/eap/>. This website includes public access to school and district test results, private student access to their test results and an analysis of their areas of weakness, as well as support for both students and teachers.
- <sup>10</sup> Description downloaded from [http://www.calstate.edu/eap/documents/eap\\_program\\_description.pdf](http://www.calstate.edu/eap/documents/eap_program_description.pdf).
- <sup>11</sup> Nancy Love et al., *The Data Coach's Guide to Improving learning for All Students*. (Thousand Oaks, CA: Corwin Press, 2008).

# Appendix A:

## Sample High School Feedback Reports

# Kentucky

# Kentucky High School Feedback Report

## College Going, Class of 2009-2010

The Kentucky High School Feedback Report is produced by the Kentucky P-20 Data Collaborative, a joint effort from the Kentucky Department of Education, Council on Postsecondary Education, Education Professional Standards Board, the Kentucky Education and Workforce Development Cabinet, and the Kentucky Higher Education Assistance Authority. This report provides the most complete and accurate data about college going that exists for this school. It follows students who graduated from high school in 2009-2010 and were enrolled in a college or university during the 2010-2011 academic year.

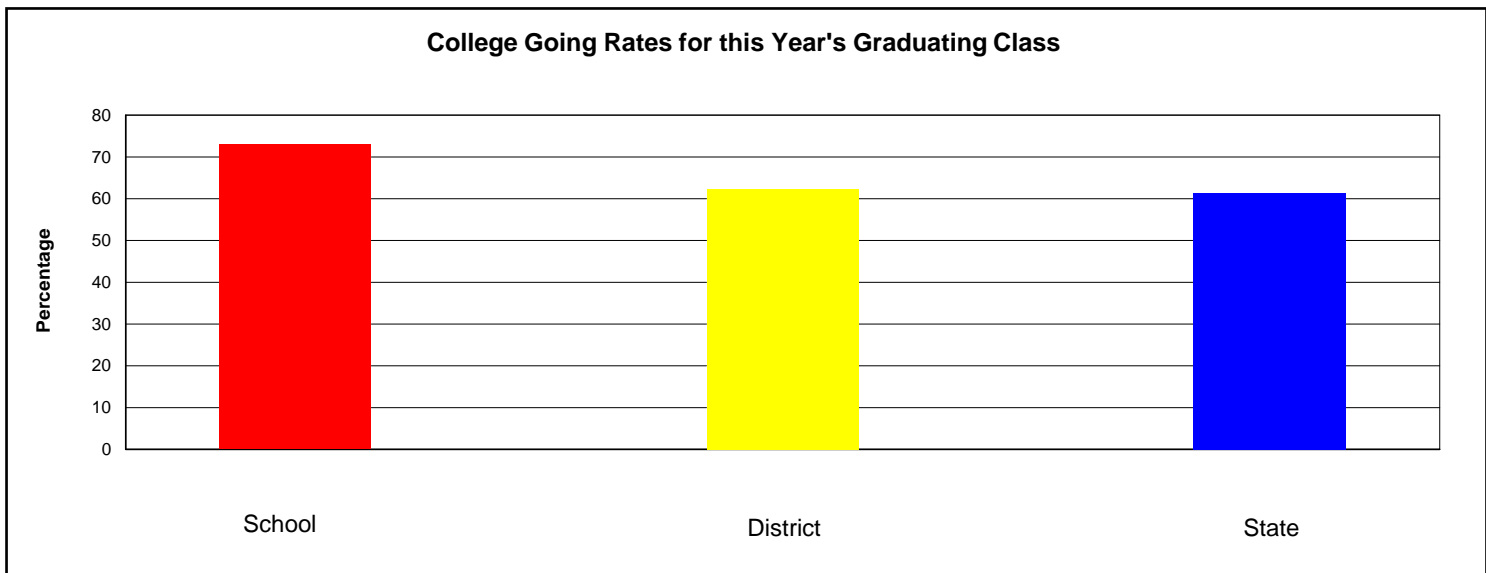
### A. Overall, how do graduates from High School compare to others in Kentucky?

	School	District	Kentucky
1. Number of high school graduates	211	5,948	43,711
2. Average high school GPA	2.58	2.65	2.84
3. Percent of high school graduates in this class who qualify for free and reduced lunch	80.1%	44.0%	42.6%
4. Average Junior ACT scores for these high school graduates by subject			
English	14.8	17.3	17.7
Mathematics	15.7	18.2	18.5
Reading	16.0	18.5	18.7
Science	16.2	18.5	18.8
Composite	15.8	18.3	18.6
5. Average Kentucky Education Excellence Scholarship (KEES) Awards earned by these high school graduates	\$727	\$1,000	\$1,024
6. Overall college-going rate for these high school graduates	73.0%	62.4%	61.4%
7. Percent of high school graduates who go to an in-state college or university	65.4%	55.3%	56.7%
8. Percent of high school graduates who go to an out-of-state college or university	8.1%	7.3%	4.8%

**Quick Statistics About This School**

<b>High School Graduation Rate (KYAFGR)</b>	<b>79.3%</b>
<b>Overall College-Going Rate</b>	<b>73.0%</b>
<b>* % of Graduates Ready for college-level math</b>	<b>8.0%</b>
<b>* % of Graduates Ready for college-level English</b>	<b>27.6%</b>
<b>* % of Graduates Ready for college-level reading</b>	<b>18.6%</b>

\*Math, English, and reading readiness calculations are based on the average Junior ACT scores for these graduates using CPE's systemwide benchmarks.



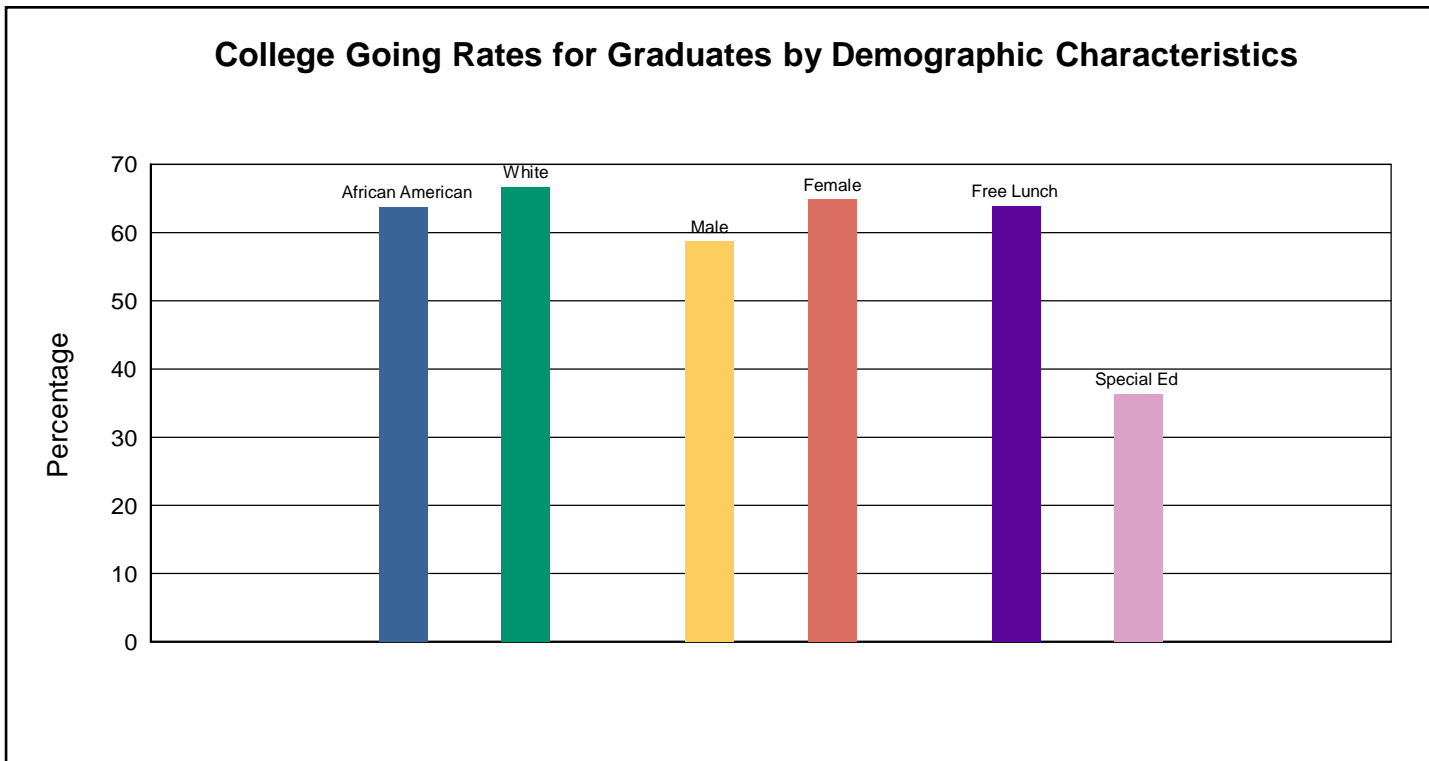
Note: This high school feedback report was produced using the Kentucky P-20 Data System and provides information at a deeper level and in a different format than previous reports. If you intend to compare data from this report to others, please review the technical notes for each to ensure that the data are comparable. For more information, please visit <http://KentuckyP20.ky.gov> or email [P20@ky.gov](mailto:P20@ky.gov).



**B. What types of colleges and universities did graduates from High School attend?**

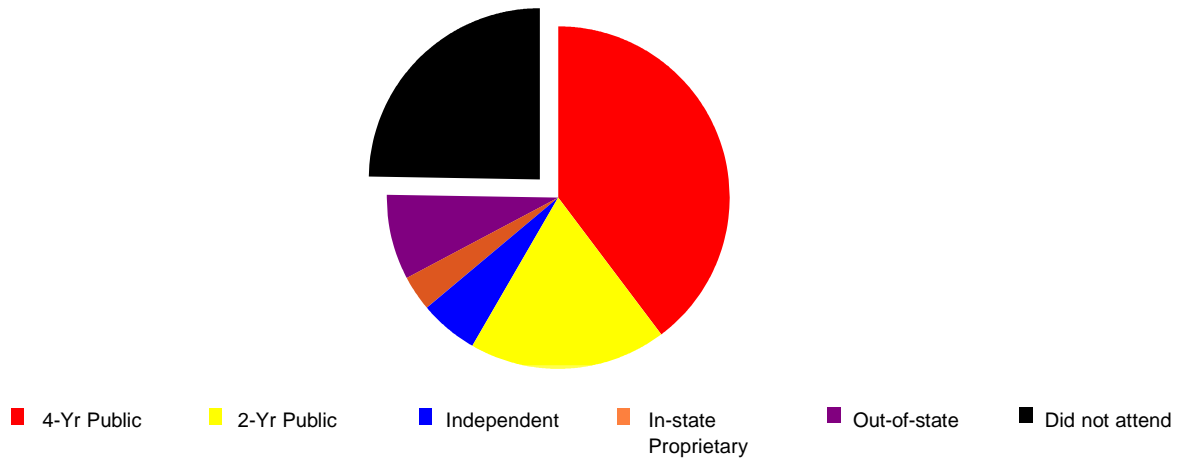
	School	District	Kentucky
1. College enrollment of 2009-2010 graduates entering an in-state or independent college (*)	132	3,047	24,066
2. Type of college or university attended			
a. Four-year public university	67.4%	56.0%	48.2%
b. Two-year public community or technical college (KCTCS)	31.8%	37.1%	42.0%
c. Independent	9.1%	10.9%	13.9%
3. Started college full-time	85.6%	86.8%	92.0%
4. Type of degree or credential sought			
a. Bachelor's degree	50.8%	54.5%	49.4%
b. Associate's degree	25.8%	17.1%	23.6%
c. Certificate or Diploma	6.8%	3.6%	4.0%
d. Undeclared or no degree	16.7%	24.8%	22.9%

(\*) The P-20 Data Collaborative is able to produce more detailed reporting about graduates who attend in-state public and independent institutions than for graduates who attend other in-state private or proprietary and out-of-state institutions.

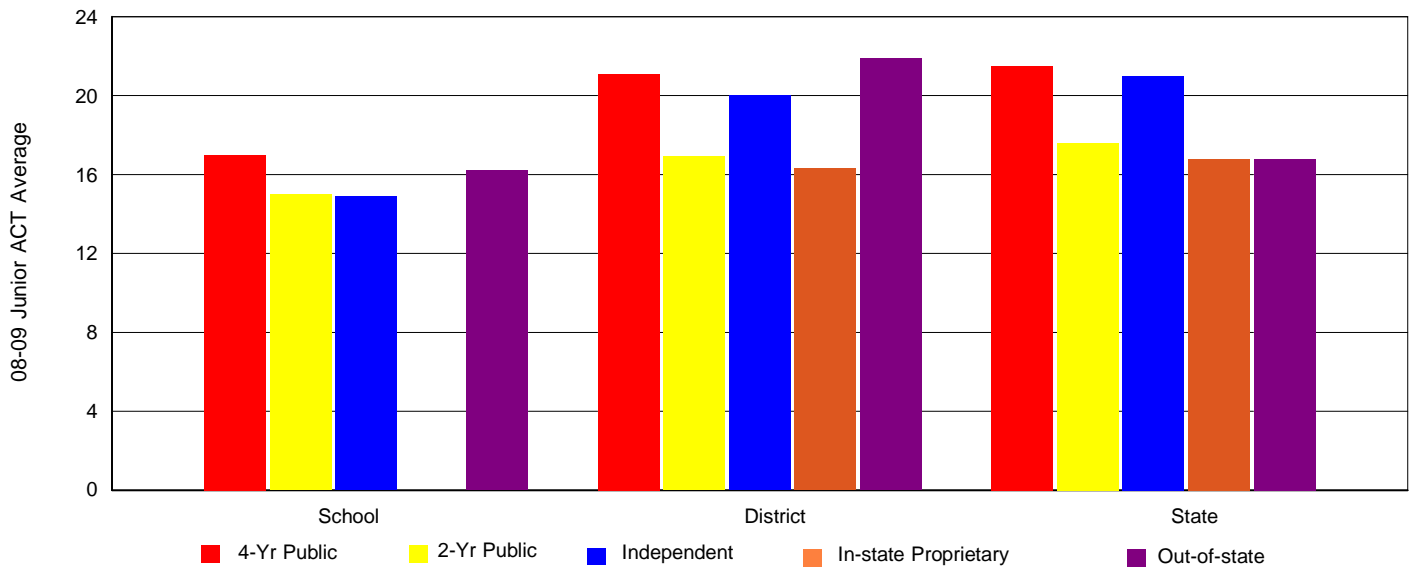


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Type of Postsecondary Institution Attended by these High School Graduates



Average Junior Year ACT Composite Scores by Enrolled Institution



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C. Which colleges and universities did the graduates from High School attend?

Count by College or University Attended

Jefferson Community & Technical Colleg	34
University of Louisville	23
Western Kentucky University	20
University of Kentucky	17
Eastern Kentucky University	17
Spalding University	10
Bluegrass Community & Technical Colle	8
Indiana University Southeast	7
Kentucky State University	6
Northern Kentucky University	3
Morehead State University	3
Spencerian College	2
Sullivan University	2
Tennessee State University	2
Vanderbilt University	2
Brown Mackie College Louisville	2
Clark Atlanta University	1
College Of Wooster	1
Community College Of Baltimore County	1
Daymar College	1
Feather River Community College	1
Howard University	1
Oakwood University	1
Georgetown College	1
Murray State University	1
Campbellsville University	1

Note: This high school feedback report was produced using the Kentucky P-20 Data System and provides information at a deeper level and in a different format than previous reports. If you intend to compare data from this report to others, please review the technical notes for each to ensure that the data are comparable. For more information, please visit <http://KentuckyP20.ky.gov> or email [P20@ky.gov](mailto:P20@ky.gov).



# Indiana



# Indiana College Readiness Report

## 2010 Graduates ██████ High School



### Graduates Attending Indiana Public Colleges

	██████ High School	Statewide
Count of 2010 graduates	456	69,054
Unduplicated count of 2010 graduates attending Indiana public colleges	232	32,493
<b>% attending IN public colleges within 1 year</b>	<b>51%</b>	<b>47%</b>



### Graduates Needing Remediation

	██████ High School	Statewide
Count of 2010 graduates enrolled	232	32,493
Count needing remediation (Math, E/LA, or Math and E/LA)	45	10,195
<b>% needing remediation</b>	<b>19%</b>	<b>31%</b>



### Remediation by Subject \*

Subject	██████ High School		Statewide	
	Count	%	Count	%
Math Only	24	10%	5,692	18%
English/Language Arts Only	5	2%	1,051	3%
Both Math and English/Language Arts	16	7%	3,471	11%
<b>No Remediation</b>	<b>187</b>	<b>81%</b>	<b>22,519</b>	<b>69%</b>



### Remediation by Diploma Type \*

Subject	██████ High School			
	Diploma Type			
	Honors	Core 40	General	Unknown/Oth
Math Only	0	16	5	3
English/Language Arts Only	0	1	2	2
Both Math and English/Language Arts	0	4	6	6
No Remediation	81	85	11	10
<b>Total % Needing Remediation</b>	<b>0%</b>	<b>20%</b>	<b>54%</b>	<b>52%</b>
Subject	Statewide			
	Diploma Type			
	Honors	Core 40	General	Unknown/Oth
Math Only	816	3,232	896	758
English/Language Arts Only	50	491	326	185
Both Math and English/Language Arts	54	1,497	1,164	758
No Remediation	12,038	8,236	1,080	1,351
<b>Total % Needing Remediation</b>	<b>7%</b>	<b>39%</b>	<b>69%</b>	<b>56%</b>

# Indiana College Readiness Report

## 2010 Graduates ██████ High School



### Enrollment by Degree Type \*

Degree Type	██████ High School		Statewide	
	Count	%	Count	%
Bachelor's degrees	161	69%	21,810	67%
Associate degrees	64	28%	10,636	33%
Awards at least 1 but less than 2 academic years	6	3%	247	1%
Awards of less than 1 academic year	1	0%	167	1%
Unclassified undergraduate	0	0%	52	0%



### Enrollment by Status \*

Status	██████ High School		Statewide	
	Count	%	Count	%
Full-Time	163	70%	21,616	67%
Part-Time	69	30%	11,187	34%

Full-Time = 12 or more total credit hours reported for both fall and spring



### Enrollment by Institution Type and Institution \*

Institution Type	██████ High School		Statewide	
	Count	%	Count	%
<b>2-year Indiana Public Institution</b>	<b>57</b>	<b>25%</b>	<b>10,393</b>	<b>32%</b>
Ivy Tech Community College of Indiana	54	23%	8,589	26%
Vincennes University	3	1%	1,845	6%
<b>4-year Indiana Public Institution</b>	<b>175</b>	<b>75%</b>	<b>22,486</b>	<b>69%</b>
Ball State University	16	7%	3,086	10%
Indiana State University	3	1%	2,125	7%
University Of Southern Indiana	3	1%	1,816	6%
Indiana University-Bloomington	29	13%	4,401	14%
Indiana University-East	0	0%	272	1%
Indiana University-Kokomo	0	0%	334	1%
Indiana University-Northwest	0	0%	564	2%
Indiana University-Purdue University-Indianapolis	3	1%	2,734	8%
Indiana University-South Bend	0	0%	672	2%
Indiana University-Southeast	0	0%	795	2%
Indiana University-Purdue University-Fort Wayne	97	42%	1,368	4%
Purdue University-Calumet Campus	0	0%	780	2%
Purdue University-North Central Campus	0	0%	519	2%
Purdue University-West Lafayette Campus	25	11%	3,607	11%

# Indiana College Readiness Report

## 2010 Graduates ██████████ High School



### Enrollment by Program Type \*

Program Type	██████████ High School		Statewide	
	Count	%	Count	%
Education	28	12%	2,928	9%
Arts and Humanities	29	13%	5,101	16%
Social and Behavioral Sciences and Human Services	19	8%	2,693	8%
Science, Technology, Engineering, and Math (STEM)	56	24%	6,115	19%
Business and Communication	49	21%	4,719	15%
Health	25	11%	2,744	8%
Trades	11	5%	1,941	6%
Undecided	15	6%	6,852	21%



### Average Freshman Year Cumulative GPA by Diploma Type

Diploma Type	██████████ High School	Statewide
Honors	3.3	3.1
Core 40	2.4	2.2
General	2.2	1.9
Unknown/Other	1.7	2.1



### Average Credit Hours Earned by Institution Type and Status

	██████████ High School	Statewide
<b>2-year Institutions</b>		
Full-Time	22.5	21.4
Part-Time	7.6	7.9
<b>4-year Institutions</b>		
Full-Time	27.6	27.6
Part-Time	12.1	11.9

Full-Time = 12 or more total credit hours reported for both fall and spring

\* Data in this report represent the entire 2010-2011 fiscal year. Some students may have been enrolled at more than one institution during FY2010-2011. Those students may appear more than once in some tables. As such, counts in each table may not equal total count of students attending a public postsecondary institution and percentages may not equal 100%.

\*\*\* Cells with fewer than 10 students represented are suppressed for privacy reasons

**Data sources:** Total 2010 graduate counts: Indiana Department of Education GR (graduates) report; All other data: Commission for Higher Education SIS data submissions (FY2011)



U.S. Department of Education

## From Information to Action

A Guide to Using Postsecondary Data to Improve  
Students' Chances for Postsecondary Success

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