How Education Leaders Can Use Longitudinal Data to Accelerate Student Success on the Pathway from Education to the Workforce

By 2031, 72 percent of jobs in the U.S. will require some form of postsecondary education.

Leaders need more information about student pathways to and through college and into the workforce to fulfill the promise of public education.

Given the demand for college-educated workers, it is crucial for states to address the gap between the current number of qualified young adults and the anticipated workforce needs. Identifying and removing barriers to a postsecondary education requires education leaders and policy makers to understand students' movements through educational pathways, where many fall off, and who ultimately completes those pathways.

Newly modernized longitudinal data systems allow education leaders to unlock local insights about how students navigate pathways from K12 education into higher education and the workforce and where students may be faltering. To do so, education agencies do not need to reinvent the wheel. SDP has designed a set of diagnostic research questions and resources that every state can use as a first step toward understanding patterns in workforce and educational attainment. Here we highlight the key questions you can answer using The Strategic Data Project Education to Workforce Pathways Diagnostic Toolkit, provide examples of some visualizations you can generate with the tool, and lay out next steps to drive strategy.

What pressing questions should every state be asking?

1) **Is your state on track to meet its education attainment goals?**
Gauging progress toward attainment goals will enable states to identify areas needing improvement and allocate resources effectively to ensure the future success and prosperity of their citizens.

2) **Who needs support enrolling in college?**
Analyzing patterns in college enrollment will help states identify and support students who may require assistance navigating the college-going process, ensuring equal access to higher education opportunities and fostering a more educated workforce and society.

3) **Who needs additional support making it through college?**
Answering this question is essential for states to identify and provide tailored support to students who encounter difficulties in completing their college education, thereby promoting retention, improving graduation rates, and enhancing overall educational outcomes.

4) **Who earns a livable wage?**
Which education pathways in the state lead to economic prosperity? If so, for whom? Knowing this will help enable leaders to implement targeted policies that further promote economic well-being.

USING THE DIAGNOSTIC TO GAIN INSIGHT

Using the SDP Pathways Diagnostic, your agency will be able to conduct descriptive analyses with longitudinal data and generate informative visualizations that address key questions about students' progression from high school, through college, and into the workforce. Below we provide information about the analyses provided in the Diagnostic that will help you answer key questions about students in your state.

Key Question 1: Is your state on track to meet its education attainment goals?

To establish a foundational understanding of students' educational outcomes after they depart from high school, you can use the diagnostic to answer these questions:
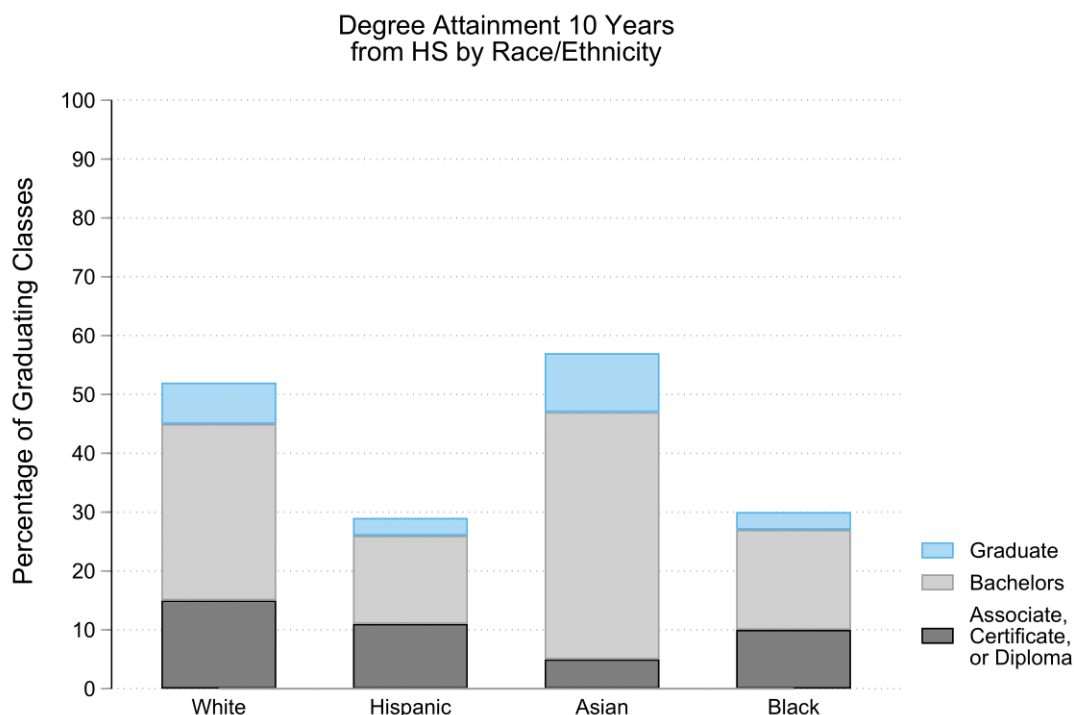
- Which state high school graduates are earning postsecondary credentials?
- Are some students more likely to earn certain postsecondary credentials than others?

These analyses will help your state gain insight into which students may be less likely to attain postsecondary credentials than their peers and may need additional support on the path to credential attainment.

EXAMPLE

Where are your disparities in credential attainment?

To uncover disparities in attainment, this analysis plots the percentage of students from a given high school graduating class by highest credential 10 years from graduation, broken out by focal populations and academic characteristics. The results of these analyses will help you identify groups of students who may need additional support accessing and completing postsecondary education.

Degree Attainment 10 Years from HS by Race/Ethnicity

Legend:
- Graduate (light blue)
- Bachelors (light gray)
- Associate, Certificate, or Diploma (dark gray)

Key Question 2: Who needs support enrolling in college?

As you explore Key Question 1, you may find that certain students are less likely to earn college credentials than others. To understand whether these completion rates are driven by barriers to college access, use the Diagnostic answer the following questions:

- How many high school graduates go to college? Where and when do they enroll?
- Are some students more likely to enter postsecondary pathways than others?

Answering these questions will allow you to better unpack the drivers of credential completion rates in your state and will help your state identify the students in need of support making the transition from high school to college.

EXAMPLE

How do your college enrollment rates vary by student population?

This analysis displays variations in college enrollment rates across student groups by examining the extent to which academic achievement explains variation in college going across students. This analysis is useful to identify students with similar incoming achievement profiles but divergent college enrollment rates, or, on the other hand, students with similar college-going rates but different academic performance. Understanding the extent to which college enrollment rates may vary for students with different academic and demographic characteristics can help school districts identify potential strategies for supporting these students on the road to college.

Percentage Enrolled in College 1 Year after HS by Sex and Math Test Score Quartile
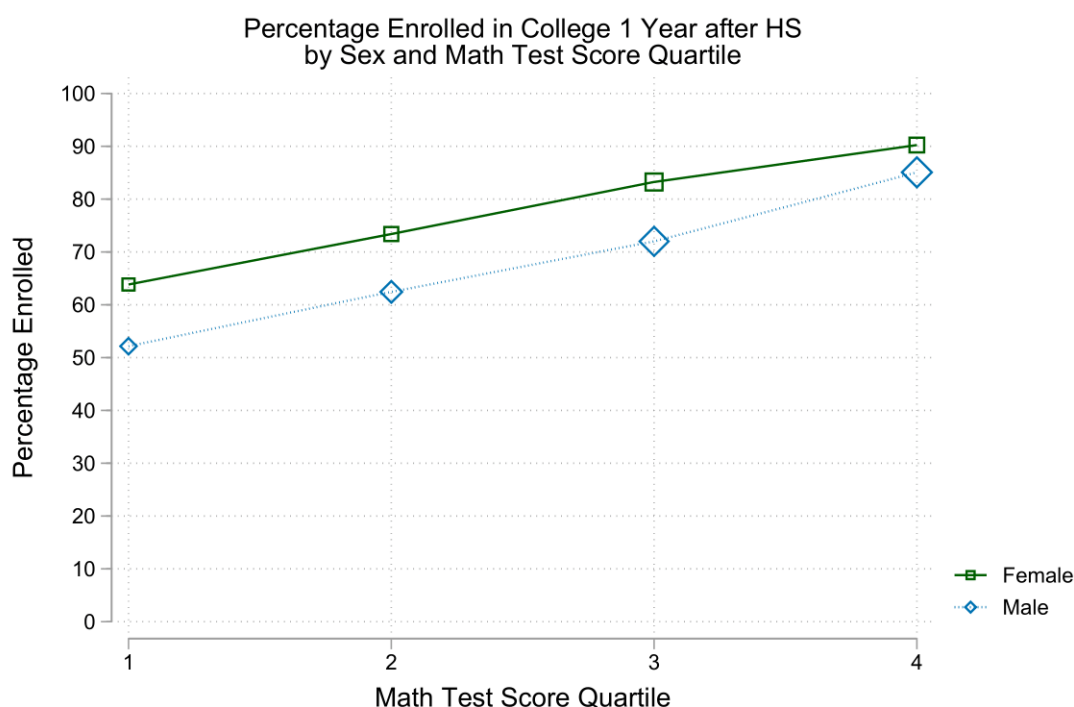
Key Question 3: Who needs additional support making it through college?

While enrolling in college is a crucial step in a students' educational journey, it is vital that students persist to graduation to enjoy the full benefits of their education. To gain further insight into the potential drivers of degree attainment rates in your state, use the Diagnostic to ask:

- Which state high school graduates stop out of college? Which students are more likely to stop out than others?
- What are the re-enrollment behaviors of college stop outs?

Answering these questions will help your state identify student groups in need of additional support in college, as well as key junctures for stop out prevention interventions.

EXAMPLE

When and where should you target stop out prevention campaigns?

Students' experiences, especially their academic performance, once enrolled can influence their persistence to degree completion. To help institutions identify key junctures for stop out prevention interventions, we look at the relationship between students' academic performance in their first term, specifically credit accumulation and GPA, and stop out.

Percentage of Sub-Baccalaureate Degree Attempters who Stopped Out by Number of Credits Earned in First Semester
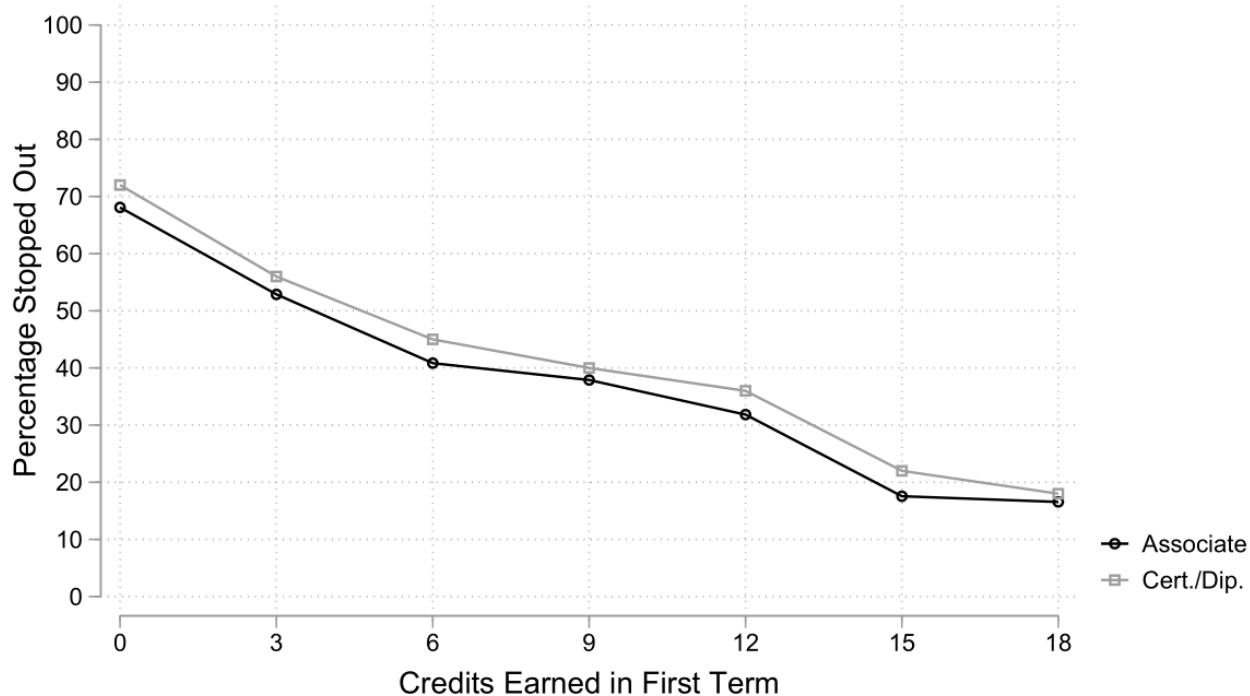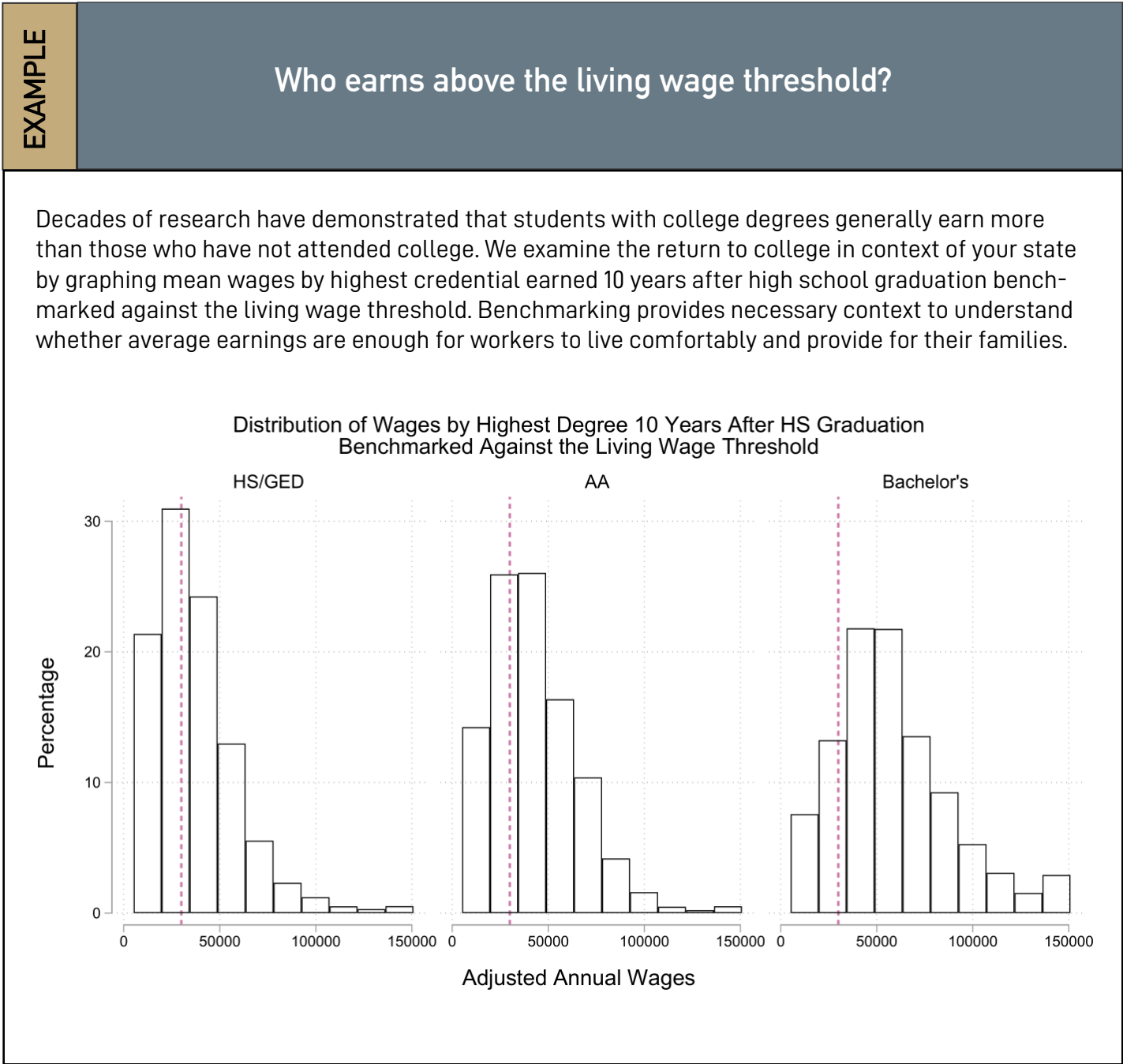

Credits earned in the first term are grouped into three-credit intervals, labeled by the maximum of the interval.

Key Question 4: Who earns a livable wage?

In light of national discussions about the increasing costs of higher education and daily living expenses, it is crucial for your state to understand the financial benefits of a college education and identify the populations that may face challenges in meeting their basic needs. Use the Diagnostic to provide further insight into workforce outcomes by asking:

• How do earnings vary by educational attainment and student characteristics?

Results from these analyses will help you understand the returns to college in your state, as well as for whom the returns are greatest. These insights can help drive targeted workforce development efforts in your state.

EXAMPLE

Who earns above the living wage threshold?

Decades of research have demonstrated that students with college degrees generally earn more than those who have not attended college. We examine the return to college in context of your state by graphing mean wages by highest credential earned 10 years after high school graduation benchmarked against the living wage threshold. Benchmarking provides necessary context to understand whether average earnings are enough for workers to live comfortably and provide for their families.

Distribution of Wages by Highest Degree 10 Years After HS Graduation
Benchmarked Against the Living Wage Threshold

USING THE DIAGNOSTIC TO DRIVE STRATEGY

Step 1: Generate state insights

The analyses and visualizations presented in the Diagnostic offer critical information for informing policies aimed at supporting the success of your students and strengthening your workforce. As you work toward generating state-specific insights using this Diagnostic consider:

- What data will you need to collect?
- How to use the open diagnostic resources?
- How to work with SDP to do it if you have limited capacity to do it yourself?
- How to replicate these analyses over time to stay up to date on a changing landscape?

Step 2: Host data conversations with key stakeholders

Approaching this Diagnostic as a resource to spark conversations and questioning around student outcomes will allow you to focus on the issues most relevant to your context and to determine next steps to support student success. As you think through sharing the findings from your analyses consider:

- When should stakeholders engage with the questions and give input on key customizations?
- Who should be at the table for dissemination?
- How can these findings inspire actionable change?

By working through these questions with stakeholders, you can determine what challenges your states faces, and potential root causes you could address. Once you have identified key areas of improvement in your state you can work with education leaders and to brainstorm potential actions that may alleviate the issue you have identified and evaluate these interventions for their effectiveness when implemented.

- [Learn more about completing the Strategic Data Project Education to Workforce Pathways Diagnostic Toolkit](#).
- **For information about the Strategic Data Project or assistance implementing the Diagnostic, contact us at sdp@gse.harvard.edu.**
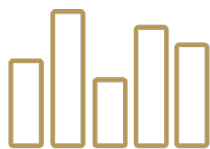
STRATEGIC DATA PROJECT

Harvard's Strategic Data Project works with education agencies to find and train data leaders to uncover trends, measure solutions, and effectively communicate evidence to stakeholders. Our inspiring network of system leaders, fellows, and faculty come together to share how to best use data to make a difference in the lives of students.

Learn more at **sdp.cepr.harvard.edu.**