
CAREER PATHWAYS-RELATED INDICATORS

FINDINGS FROM THE NEW
SKILLS FOR YOUTH INITIATIVE

NEW SKILLS FOR YOUTH

JPMORGAN CHASE & CO.

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INTRODUCTION

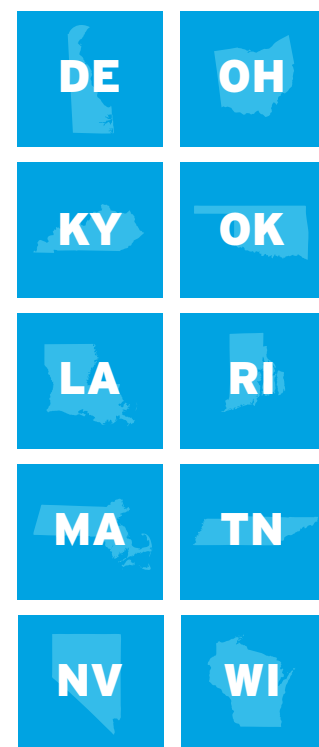
New Skills for Youth is a \$75 million initiative funded by JPMorgan Chase to increase the number of high school students completing high-quality career pathways and pursuing postsecondary opportunities and high-skill, high-demand (HSHD) careers. Following a 6-month planning period, cross-sector state teams in 10 states—Delaware, Kentucky, Louisiana, Massachusetts, Nevada, Ohio, Oklahoma, Rhode Island, Tennessee, and Wisconsin—were awarded implementation grants of \$1.95 million each in January 2017. In addition to grant funds, the states receive technical assistance and coaching from the NSFY Project Team, which includes the Council of Chief State School Officers, Advance CTE, and the Education Strategy Group.

The New Skills for Youth (NSFY) initiative requires the 10 grantee states to provide statewide quantitative data on career pathways-related indicators. Robust statewide data on college and career readiness are critical for understanding the effects of career pathways on students' educational and employment outcomes. The data can likewise reveal areas of strength and opportunity. Data on career pathways access and completion and on student participation in pathways-aligned postsecondary opportunities and work-based learning (WBL), for example, can inform how states allocate resources and develop and improve programs.

Investigating differences in student experiences and outcomes by subgroup also can shape efforts to improve equity. Subgroup differences in pathways participation may indicate a need to revisit student recruitment and program offerings. Gaps in student achievement could imply a need for additional support for underserved students or the educators who work with them.

Without high-quality data, decision makers lack the information needed to align education and workforce systems effectively to meet state economic needs. Inadequate data could lead to erroneous assumptions, ineffective policy, and decisions based on entrenched interests rather than the best interests of students and state economies.

10 NSFY States



were each awarded
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\$1.95
MILLION

CONTEXT FOR DATA COLLECTION AND REPORTING

Since 1990, states have been required to report annual accountability data on career and technical education (CTE) programs funded by The *Carl D. Perkins Vocational and Technical Education Act*. States' current capacity to report on career pathways-related indicators reflects the accountability requirements of the Act's 2006 reauthorization (*Perkins IV*). Additionally, 40 states have introduced state accountability measures of college and career readiness in accordance with the *Every Student Succeeds Act* of 2016.¹ The strengths and limitations of state data systems for collecting career pathways-related indicators reflect legislative requirements and, in many states, the emergence of state longitudinal data systems to link data across education levels and to workforce outcomes (Exhibit 1).

A recent national survey on state capacity to report data on CTE programs echoes the strengths and limitations

listed in Exhibit 1. The survey documented limited use of data for programmatic decision making, gaps in data system alignment, and reliance on unvalidated, self-reported data. Recognizing the limitations of their data systems, most state CTE directors reported that improving CTE data quality was a priority.²

The final year of NSFY coincides with state implementation of the *Strengthening Career and Technical Education for the 21st Century Act (Perkins V)*, which was passed in July 2018. *Perkins V* includes changes to accountability requirements, such as a program concentrator definition and a program quality indicator, with opportunities to report on attainment of postsecondary credentials or credit and participation in WBL, with the potential to strengthen states' ability to report data on pathways students.

EXHIBIT 1

Strengths and limitations of state education data systems to collect career pathways-related data

STRENGTHS OF STATE DATA

- Ability to identify students participating and concentrating in CTE programs
- Ability to provide data disaggregated by subgroups included in federal reporting requirements
- Growing capacity to report on student career readiness in response to new state and federal legislation, such as *Perkins V* and the *Every Student Succeeds Act*
- Improved ability to link data sources as states adopt state longitudinal data systems

LIMITATIONS OF STATE DATA

- Limited ability to compare data across states due to a lack of common indicator definitions
- Limited information on non-CTE career pathways
- Limited or inconsistent data on components of high-quality career pathways, such as early postsecondary opportunities, career advising, and WBL
- Limits on combining data across agencies due to differing indicator definitions and restrictions on data sharing

¹New Skills for Youth, CCSSO, Advance CTE, ESG, and Achieve. 2019. *Making Career Readiness Count 3.0* <https://www.achieve.org/publications/making-career-readiness-count-30>

²Advance CTE, CCSSO, ESG, Data Quality Campaign, and Workforce Data Quality Campaign. 2019. *The State of Career Technical Education: Improving Data Quality and Effectiveness* https://cte.careertech.org/sites/default/files/files/resources/State_CTE_Data_2019.pdf

THE NSFY INDICATORS

In accordance with the *New Skills for Youth State Grant Competition Guidelines* (CCSSO et al. 2016), each of the 10 Phase 2 NSFY states is required to report data annually on all secondary students who:

- 1.** Have access to high-quality career pathways in high-skill, high-demand (HSHD) industry sectors that span secondary and postsecondary levels; offer focused career guidance and advisement systems; blend rigorous core academic and career-technical instruction; include high-quality WBL experiences; and culminate in postsecondary or industry credentials with labor market value;
- 2.** Complete one or more career pathways meeting the criteria listed above;
- 3.** Complete dual enrollment courses in high school and earn college credit in academic and/or CTE subject areas;
- 4.** Earn industry-recognized credentials (IRCs) in HSHD sectors as defined by the state; and
- 5.** Enroll in college within 6 months after high school graduation or secure employment in HSHD sectors within 6 months after high school graduation.

States report the data disaggregated by racial, gender, and income subgroups, and they also have the option to include disaggregated data for students with disabilities and English language learners.

This report summarizes the findings of the NSFY initiative's third-party evaluator, RTI International, on states' ability to report statewide data associated with career pathways developed through NSFY. The findings provide an overview of states' current reporting capacity, the usefulness of available data for making programmatic decisions, and information gaps. Where relevant, examples of promising data collection processes from the NSFY states are highlighted in text boxes.

Exhibit 2 provides an overview of the topics and questions addressed in this report, which correspond to the NSFY indicators and elements of high-quality career pathways defined by NSFY.

EXHIBIT 2

Career pathways data topics and corresponding research questions



CAREER PATHWAYS ACCESS:

Which students have access to career pathways, and where are there gaps?



GUIDANCE AND ADVISING:

To what extent are students participating in focused career guidance and advising?



LABOR MARKET ALIGNMENT:

To what extent are career pathways aligned to state labor market and employer needs?



WORK-BASED LEARNING:

To what extent are students participating in pathway-aligned, high-quality WBL experiences?



EARLY POSTSECONDARY OPPORTUNITIES:

To what extent are students involved in early postsecondary opportunities?



POSTSECONDARY OUTCOMES:

What are the postsecondary educational and labor market outcomes of secondary career pathway graduates?



INDUSTRY-RECOGNIZED CREDENTIALS:

Do career pathways students earn IRCs with labor market value?

Which students have access to career pathways, and where are there gaps?



KEY STRENGTH

- **Ability to assess CTE program availability and participation within districts and schools**



KEY CHALLENGES

- **Inability to assess access to the universe of career pathways opportunities**
- **Limited data on local barriers to access**

State education agencies have information on school and district pathways offerings, but neither state agencies nor districts track access at the student level. As a result, 7 out of the 10 NSFY states counted students as having access to high-quality career pathways if they were enrolled in a school or district offering at least one state-approved CTE program. When pathway access is measured in terms of school pathway program offerings, NSFY states typically report that 90 percent or more of students have access to pathways in any reporting year. This approach to measuring access cannot account for local factors that may impede access, such as:

- **Physical barriers:** Distance (and transportation needs) from home schools to CTE centers or WBL locations;
- **Administrative barriers:** Admissions policies, scheduling constraints, and costs (particularly for dual enrollment coursework); and
- **Capacity barriers:** Oversubscription of popular programs can result in waitlists or inability to meet student interests, or programs may lack the supports needed to serve students with disabilities or English language learners.

States and districts might address the lack of data on local barriers by piloting local data collection initiatives or systematically collecting data on barriers through state-led program approval or monitoring processes. Access might also be evaluated through the local needs assessments new under *Perkins V*, which requires applicants for *Perkins* funding to demonstrate that local CTE programs are sufficient in size, scope, and quality to meet students' needs. Finally, career pathways participation and completion data disaggregated at the school, program, and subgroup level can indicate where pathways access might be lacking or inadequate. In addition, states' approaches to measuring access may not adequately account for all pathway options, such as:

Non-CTE and local pathways

Some districts offer career pathways and local pathways not supported by federal funding for CTE and thus not subject to CTE reporting requirements. State data would more accurately reflect career pathway access if the data collected reflected all pathway options, including those in non-CTE fields or supported by local funds.

Online delivery of courses

Some states offer career pathways courses online. Although all students may technically have access to virtual courses, state staff noted that student awareness varies by district, in part because districts may not promote online instruction because they view it as competition with their own courses. To assess the role of online learning in student pathway access, states need to examine the extent to which students are using this option statewide and by district.

STATE EXAMPLE: MAPPING CAREER PATHWAYS ACCESS



- The Ohio Department of Education has worked with the federally-funded College & Career Readiness & Success Center to develop maps showing the locations of schools, employers, and CTE centers using geographic information systems.
- State staff use the maps to assess the distribution of pathways programs and WBL opportunities across the state, and identify physical and distance barriers to access.

STATE EXAMPLE: ASSESSING PATHWAY ACCESS



- Massachusetts is developing data infrastructure to collect data on student participation in and completion of High-Quality College and Career Pathways, which are offered outside of the state's traditional CTE system.
- The state conducted a statewide analysis of waitlists for CTE programs and considers waitlist data when measuring access.
- The state reviews school program offerings and student participation in career pathways when assessing access.

Career Pathways Access: Indicator Considerations



STATE POLICY

Does the state mandate access to CTE programs? If so, how is access defined, and what are the limitations associated with this definition?

OPTIONS

Are students enrolling in pathway programs that are not reflected in state education data, such as local or non-CTE career pathways? What are the implications of these data gaps for the accurate assessment of pathway access?

VIRTUAL LEARNING

To what extent are students accessing career pathways courses virtually? How effective is online instruction for ensuring access?

CAPACITY ISSUES

To what extent are programs able to serve all students interested in the program, in terms of numbers of students who can enroll and supports for special populations?

ADMINISTRATIVE BARRIERS

What data are available on barriers related to how pathway programs are offered, including admissions policies, scheduling constraints, and costs to the student?

PHYSICAL BARRIERS

What is the travel burden, in terms of distance and time, for students to access pathway courses or WBL opportunities?

To what extent are career pathways aligned to state labor market and employer needs?



KEY STRENGTH

- **Ability to track student participation in pathways by pathway field at the district level**



KEY CHALLENGE

- **Establishing robust processes for analyzing labor market information and consulting stakeholders to identify HSHD occupations**

Instituting processes to align career pathways programs to workforce needs is a focus of NSFY. To determine which occupations are HSHD states must analyze labor market information (LMI) and consult stakeholders. To identify pathways aligned with HSHD occupations, states typically:

1. Identify sources of labor market information;
2. Develop processes and criteria for designating occupations as HSHD; and
3. Map targeted occupations to career pathways.

To identify HSHD occupations, states must first identify reliable sources of robust LMI, typically from workforce and economic development agencies. States commonly distinguish among occupations by analyzing data on compensation, job openings, and short- and long-term (5 or more years) employment projections. Some states also consult real-time LMI (drawn from job postings) for information on credential and experience requirements. Though some states identify broad industries as drivers of economic growth, variability in demand and needed skills within industries suggest that occupation-level projections may be more useful for guiding pathways program development.

States also establish processes for convening employers at the state, regional, and local levels to review LMI. States can ensure that the review process is rigorous by establishing clear criteria for assessing demand and skills. Employers' knowledge of industry conditions can strengthen the conclusions drawn from quantitative data, particularly in rapidly developing or new sectors for which historical data are lacking or misleading. NSFY state teams emphasize the value of multiple sources of data on workforce needs to compensate for the shortcomings of any one source. They also noted that consensus among stakeholders regarding LMI sources lends legitimacy to the state education agency's career pathways priorities.

Once states identify HSHD occupations, they must map the occupations to pathways programs using processes such as:

- **State-level mapping**

State education agencies and their partners map pathways to occupations, using North American Industry Classification System (NAICS), Standard Occupational Classification (SOC), and Classification of Instructional Programs (CIP) codes.

- **Program certification or designation**

Several states have program certifications or designations requiring candidate programs to demonstrate alignment to state (or regional) HSHD occupations, some of which were developed during the NSFY initiative.

- **Program approval**

In some states, the pathway program approval process requires districts to furnish LMI indicating demand for program graduates. States relying on districts to provide data noted that local stakeholders often need assistance with accessing and interpreting LMI.

States' HSHD career pathways vary because of differences in state economies, LMI sources, HSHD definitions or criteria, employer feedback, and processes for linking HSHD occupations to career pathways.

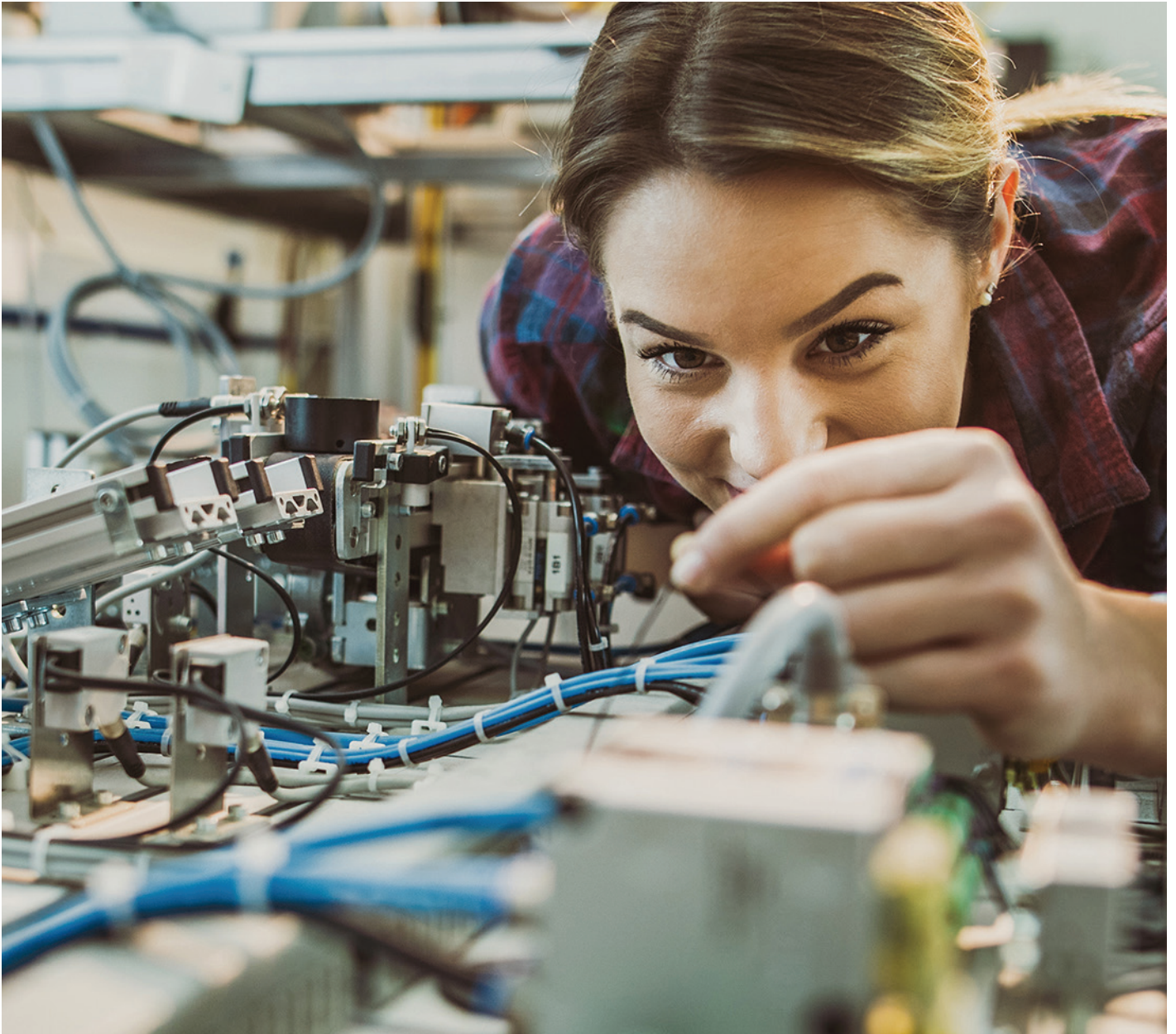
Among NSFY states, the number of pathways aligned to HSHD sectors ranges from fewer than 20 in Tennessee and Wisconsin to more than 100 in Kentucky and Oklahoma.

The NSFY states' HSHD pathway designations are too new to assess the association between pathways designated as HSHD and student educational and economic outcomes. Further, comparing the employment outcomes of students completing HSHD-aligned and other pathways requires high-quality longitudinal data, including employment and earnings, that most states currently lack.

STATE EXAMPLE: PRIORITIZING ECONOMIC SECTORS



- Kentucky's Cabinet for Economic Development sets occupational priorities using data from the Kentucky Center for Statistics - the state's legislated authoritative source of LMI.
- High-demand = The top 5 industry sectors in the state in terms of projected job openings over the next 5 years.
- High-skill = Occupations in sectors in which the average annual salary in the state for the entire sector is \$35,000 or greater.
- The list of occupations meeting the HSHD criteria is vetted by employers regionally to identify supporting occupations, such as teaching, and economic growth priorities for which current projected job openings may be low, such as IT in specific areas of the state.



**STATE EXAMPLE:
OCCUPATIONAL STAR RATING SYSTEM**



- The Louisiana Workforce Commission assigns stars to jobs based on their projected demand in 4 and 10 years, projected percentage of job growth, advertised job openings in the past year, and wages.
- The stronger the demand and growth of a particular job, and the higher the pay, the more stars assigned (up to five).
- The system has been adapted by other states, including Massachusetts and Rhode Island.

Labor Market Alignment: Indicator Considerations



OUTCOMES

How will states assess whether pathways aligned to HSHD occupations result in better student and economic outcomes?

MAPPING PATHWAYS

What process will be used to map HSHD occupations to career pathways?

IDENTIFYING WORKFORCE NEEDS

- **Sources of labor market information:** What agencies or data sources might serve as a state or regional authority on workforce data?
- **Measures of labor market needs:** What data are available on current and projected labor market demand? What criteria signal that an occupation is in demand?
- **Occupational criteria:** What criteria signal meaningful levels of skill, such as credentials and experience?
- **Employer feedback:** What mechanisms currently exist for collecting input from employers?

To what extent are students involved in early postsecondary opportunities?



KEY STRENGTH

- **Ability to track student participation in dual or concurrent enrollment courses**



KEY CHALLENGE

- **Limited ability to assess whether participation in dual and concurrent enrollment courses culminates in postsecondary credit aligned to students career interests**

For NSFY, states submit data on the number of students earning high school and college credit for at least one dual or concurrent enrollment course, excluding postsecondary credit earned through Advanced Placement, International Baccalaureate, the College Level Examination Program, and Cambridge. Even when opportunities are limited to dual and concurrent enrollment, high school students typically have multiple options to earn early college credit. Tennessee high school students, for example, can earn postsecondary credit through statewide articulated courses, local articulation agreements, and prior learning assessments. NSFY states have found that the quality of data on early college credit can vary by the type of early postsecondary opportunity and source. Massachusetts, for example, has been working to ensure that data on dual credit are reported consistently, regardless of whether the dual credit course was offered at a high school or on a college campus.

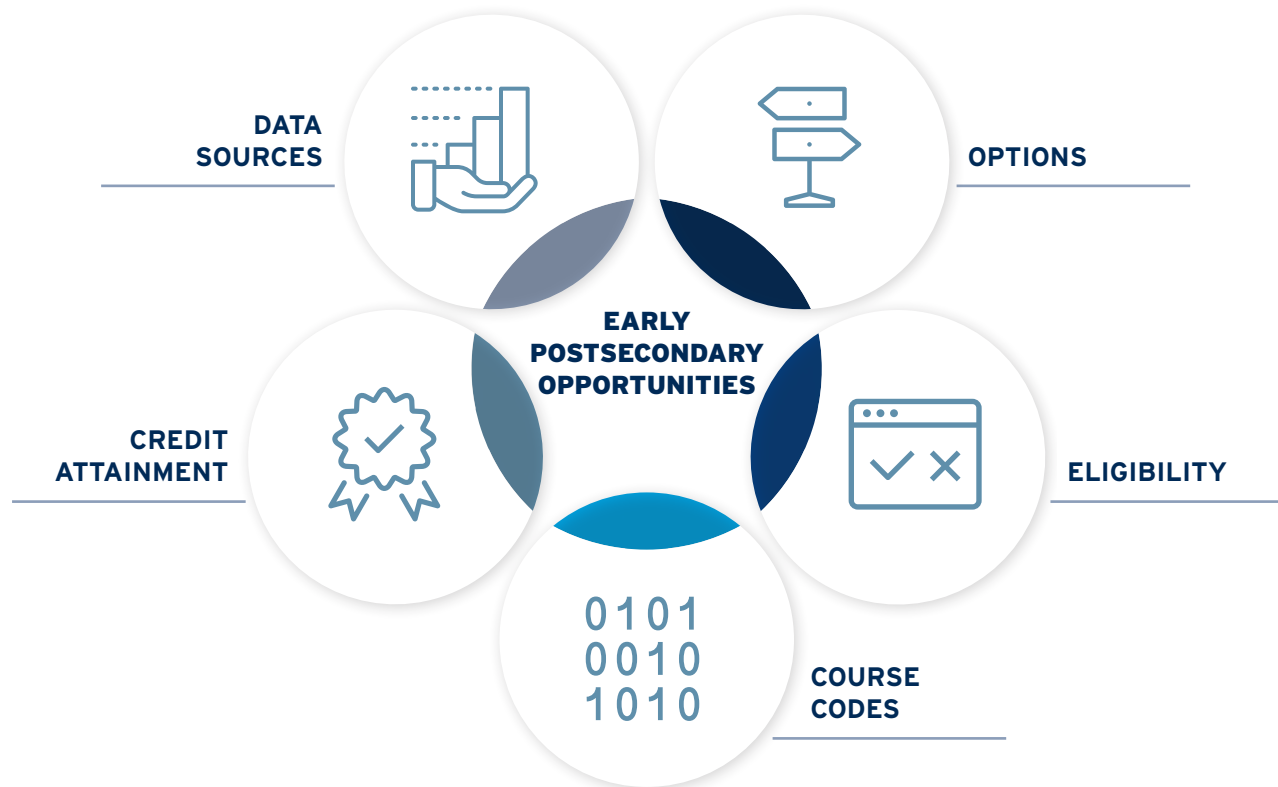
Although nearly all NSFY states can report data on student enrollment in courses offering high school and college credit, fewer states have data on whether students meet the requirements for earning postsecondary credit or actually are awarded credit. Without data on credit awarded, states do not know whether students actually succeed in earning early college credit in courses offering that option, nor can they assess the value of early college credit for improving educational outcomes, such as postsecondary enrollment and reduced time to postsecondary degree.



Ideally, students would earn postsecondary credit that is aligned with their career pathway and fulfills postsecondary degree program requirements. Some states can assess the relevance of secondary dual or concurrent enrollment coursework to students' secondary career pathways using course codes, but they typically cannot confirm whether students who earn dual credit in high school go on to use the credits to meet the requirements of a postsecondary degree program.

States can improve data on dual credit attainment in several ways. Statewide articulation agreements awarding transcribed credit are one solution; any student meeting the requirements indicated in the agreement (such as passing the course) has earned credit. States can also create special course codes for dual and concurrent courses with guidelines for their use, as in Massachusetts, or connect secondary data systems with postsecondary registrars, as Ohio is attempting. Ideally, postsecondary data systems would track students' use of credits earned in high school to meet postsecondary requirements and share this information with the secondary system. Lastly, some students are ineligible to participate in dual or concurrent enrollment courses because of placement exam scores or grade point average (GPA) requirements, and capturing data on students' eligibility for dual credit may be helpful for assessing equity in access to early credit opportunities.

Early Postsecondary Opportunities: Indicator Considerations



DATA SOURCES

What data do postsecondary institutions capture on credit earned while in high school? Can high schools access data on credit attainment and use?

CREDIT ATTAINMENT

Are data available on whether students enrolled in courses offering postsecondary credit succeed in earning it?

OPTIONS

What options do high school students have to earn college credit? Which are included in state data?

ELIGIBILITY

Do eligibility rules or remediation requirements prevent students from participating in dual or concurrent enrollment courses? If so, what data are available on student eligibility?

COURSE CODES

Does the state use course codes that clearly signal which courses culminate in postsecondary credit? Can these course codes be linked to specific career pathways?

Do career pathways students earn IRCs with labor market value?



KEY STRENGTH

- **Increasing state capacity to track student attainment of industry-recognized credentials (IRCs) as a result of accountability and other incentives for IRC attainment**



KEY CHALLENGES

- **Limited ability to distinguish between IRCs with and without labor market value**
- **Low-quality data resulting from self-reporting, weak vendor data, and challenges in linking education and vendor data**
- **Data on IRC attainment in most states is collected for CTE students only**

NSFY states submit data on the number of students earning IRCs aligned to HSHD sectors and IRCs attained regardless of sector. NSFY states' definitions of IRCs vary and include the following credentials alone or in combination: certifications or credentials offered by third-party organizations; credentials awarded by postsecondary institutions; state-approved assessments; and pre-apprenticeships and other WBL experiences. Seven of the 10 NSFY states collect IRC data only among students in state-approved CTE programs. As with dual credit, few states have data allowing them to assess alignment between students' IRCs and their career pathways.

High-quality IRCs help employers identify job applicants with the knowledge and skills they need. States commonly count students as having attained IRCs of value to employers if they earn an IRC while enrolled in a HSHD career pathway program. A more precise measure would differentiate between IRCs by labor market value. Most NSFY states are currently in the process of soliciting district and employer input to distinguish among IRCs based on their value to employers. Using district and employer input, states create lists of state-approved IRCs and limit data collection to those (e.g., Kentucky), or they rate IRCs according to their labor market value and include the ratings in their data system (e.g., Louisiana). In Delaware, IRCs are vetted through the pathway program approval process, which requires evidence of credentials' value to employers and pathway alignment. Processes to identify and collect data on high-quality IRCs are being developed in parallel with accountability and funding incentives to encourage attainment of IRCs valued in the labor market.

States collect IRC data from local education agencies, directly from vendors who issue credentials, or both. Local education agencies typically collect self-reported data from students or teachers; these data are verified by the state through program monitoring or by requiring submission of virtual copies of certificates naming the student. Among NSFY states, Delaware, Kentucky, and Tennessee use vendor data to assess IRC attainment. Though vendor data do not require the verification steps needed for data from school districts, these data present other challenges:

- Establishing data-sharing agreements with vendors can be time consuming, especially as the number of vendors grows;
- Vendor data may not include enough identifying information to conduct an accurate match with state education data; and
- Vendor data can vary in accuracy.

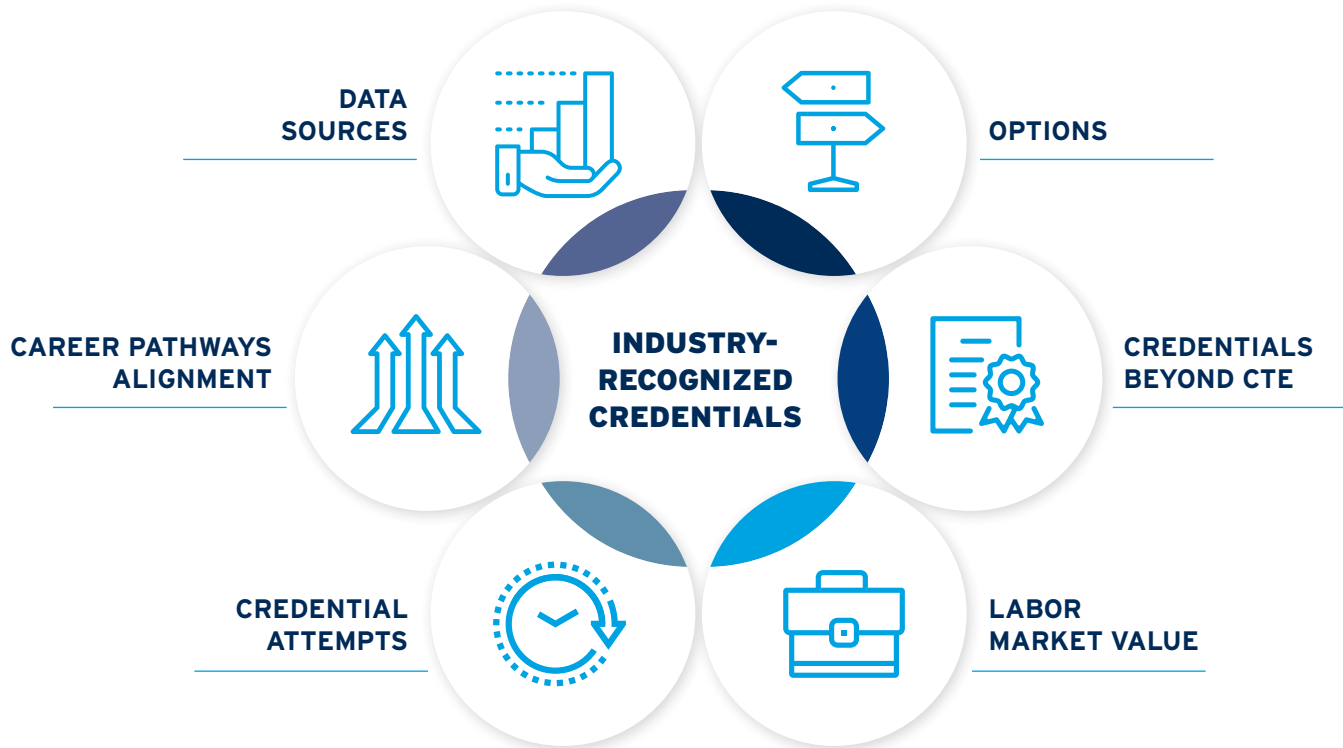
Options for improving the value of IRC data for tracking student outcomes include tracking IRCs by type, collecting data on IRC attainment among all students, and collecting additional information on IRCs' labor market value and career relevance. States might also collect data on students' IRC pass rates to assess the quality and equity of student preparation. To improve data quality, states are collaborating with vendors to collect additional identifying information for matching IRC and education data and providing feedback to improve data accuracy.

STATE EXAMPLE: INDUSTRY-RECOGNIZED CREDENTIAL DATA



- Tennessee collects data on IRC attainment through data-sharing agreements with third-party vendors.
- The state plans to collect virtual copies of student IRCs to address IRC data gaps and vendor data lacking sufficient identifying information for matching to education data.
- To address vendor-education data match rates as low as 50 percent, Tennessee is working with other states and vendors to increase the amount of identifying information collected from test takers.

Industry-Recognized Credentials with Labor Market Value: Indicator Considerations



DATA SOURCES

How does the state capture IRC data - from districts, vendors, or both?

- **District-reported:** What processes does the state use to ensure data quality?
- **Vendor-provided:** Which vendors provide data? Is identifying information collected from test takers adequate for matching to state education data?

CAREER PATHWAYS ALIGNMENT

Can the state assess whether IRCs are related to specific career pathways?

CREDENTIAL ATTEMPTS

What data are available on student attempts to earn IRCs?

OPTIONS

What types of credentials are available to students?
What kinds of credentials are included in state data systems?

CREDENTIALS BEYOND CTE

What data are available on credentials earned among non-CTE students?

LABOR MARKET VALUE

Which credentials, according to employers, signal student readiness for employment? How is this information incorporated into state data systems?

To what extent do students participate in focused career guidance and advising?



KEY STRENGTH

- **Expansion of requirements and web-based platforms for students to develop individualized career and academic plans**



KEY CHALLENGE

- **Limited data on student-level career planning that can be merged into other education and workforce databases**

Quantitative data on career guidance and advising was not collected for the NSFY initiative, but the NSFY definition of high-quality career pathways included “focused career guidance and advisement systems.” Most NSFY states have (or are implementing) statewide career and academic planning systems that require high school students to create and regularly update individual graduation plans, and enhancing career guidance has been a focus of states’ career pathway activities. Relatively limited data, however, are available to assess the quality and consistency of students’ career planning.

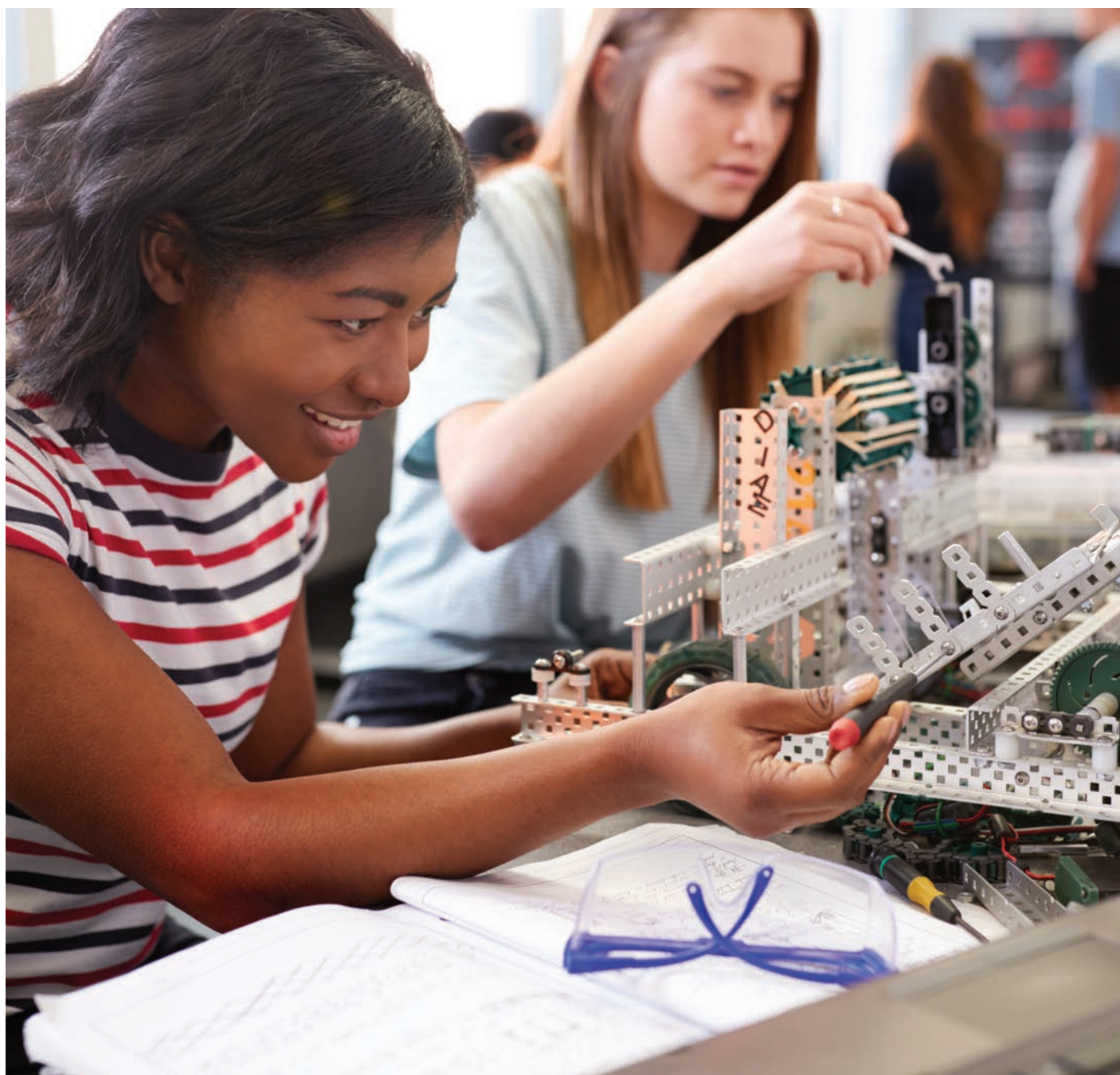
None of the NSFY states currently link data from their online career planning platforms to other K-12 education data. In some states, platform data are limited to plan creation and the frequency of updates, but more and richer data have become available as platform functions have expanded. Wisconsin’s system, for example, collects data on students’ use and completion of career exploration and planning activities as indicators of student engagement, beginning in middle school. Platforms can also track advising or planning portfolios, teacher and parent input, and milestones such as completion of college applications or the Free Application for Federal Student Aid (FAFSA). Such links would allow states to examine gaps in planning by district and student demographics and study associations between career planning activities and student outcomes.

STATE EXAMPLES: DATA ON CAREER ADVISING



- Nevada is developing a data system module to track CTE students' academic plans and educational progress, including assessment results, certifications, and GPA.

- Tennessee is linking the statewide advising portal (CollegeforTN.org) to the statewide student information system to share data between systems.



Career Guidance and Advising: Indicator Considerations



MILESTONES

What data are available on key career guidance and advising milestones, such as career advising and exploration coursework, completion of WBL exploration activities, and the completion of postsecondary and financial aid applications?

DATA LINKS

How is career advising data linked to career pathways coursework and experiences that promote career development, such as WBL?

DATA SOURCES

What are the options for connecting data from college and career advising platforms to other student data?

ADVISING ACTIVITIES

Do state data include different types of guidance and advising activities and activities from all relevant levels of education (elementary, middle, and high school)?

ENGAGEMENT

What data are available on the participation and engagement of students, parents, and educators in career guidance and advising processes?

To what extent are students participating in pathway-aligned, high-quality work-based learning experiences?



KEY STRENGTHS

- **Use of secondary course codes to capture data on time-intensive WBL experiences, such as semester-long internship programs**
- **State-wide definitions of work-based learning that can inform work-based learning indicator development**



KEY CHALLENGES

- **Limited collection of data on the full-spectrum of WBL experiences, including job shadows or mentoring**
- **Collecting data on the quality of work-based learning experiences and assessing student learning**

As with advising, NSFY states are not required to report quantitative data on student participation in WBL, but the NSFY definition of high-quality career pathways includes “high-quality WBL experiences” and expanding WBL has been a focus in most NSFY states. Most NSFY states offer career pathways students the option of participating in WBL, and some pathways in Louisiana, Massachusetts, and Rhode Island require WBL for graduation. Looking beyond NSFY, many states have selected WBL as an indicator of career readiness for the *Every Student Succeeds Act* and as a measure of program quality for *Perkins V*.

Currently, WBL data collection in most of the NSFY states is limited to students in CTE programs. States are changing and expanding their collection of WBL data to students outside of CTE, however, and also beginning to address other data considerations, including:

- **Levels of WBL activities**
States increasingly are conceptualizing WBL as a continuum that moves from career awareness to career exploration and then to employer-based and longer-term career preparation activities, such as internships. State data systems tend to focus on more intensive activities and exclude career awareness and exploration activities, thereby limiting their ability to track students’ career preparation trajectories.

- **WBL courses**

A growing number of states use course codes to capture data on longer-term WBL experiences, such as internships. States have found that multiple and pathway-specific codes are needed to link WBL data to pathways and account for students with multiple WBL placements.

- **Access**

NSFY states lack data to assess whether students can access WBL. Especially within rural communities with low business density, schools may find it difficult to create WBL placements for students in all pathways. Targeted local-level data collection on school-level barriers to WBL access (see the career pathway access indicator) might inform WBL program improvement.

- **Outcomes**

High-quality WBL experiences allow students to gain professional skills through detailed plans that establish expectations for skills development. Some states are starting to capture data on student participation in WBL activities and educator and employer assessments of student skills using mobile applications and other software. Looking ahead, states might enhance their data systems by linking data from WBL platforms to other education data.

State data on WBL thus could be improved using strategies comparable to those suggested for early postsecondary opportunities and IRCs: collect data on access to and outcomes associated with the full range of WBL options, and collect sufficient information on WBL activities to assess the relevance of the WBL experience to students' career pathways.

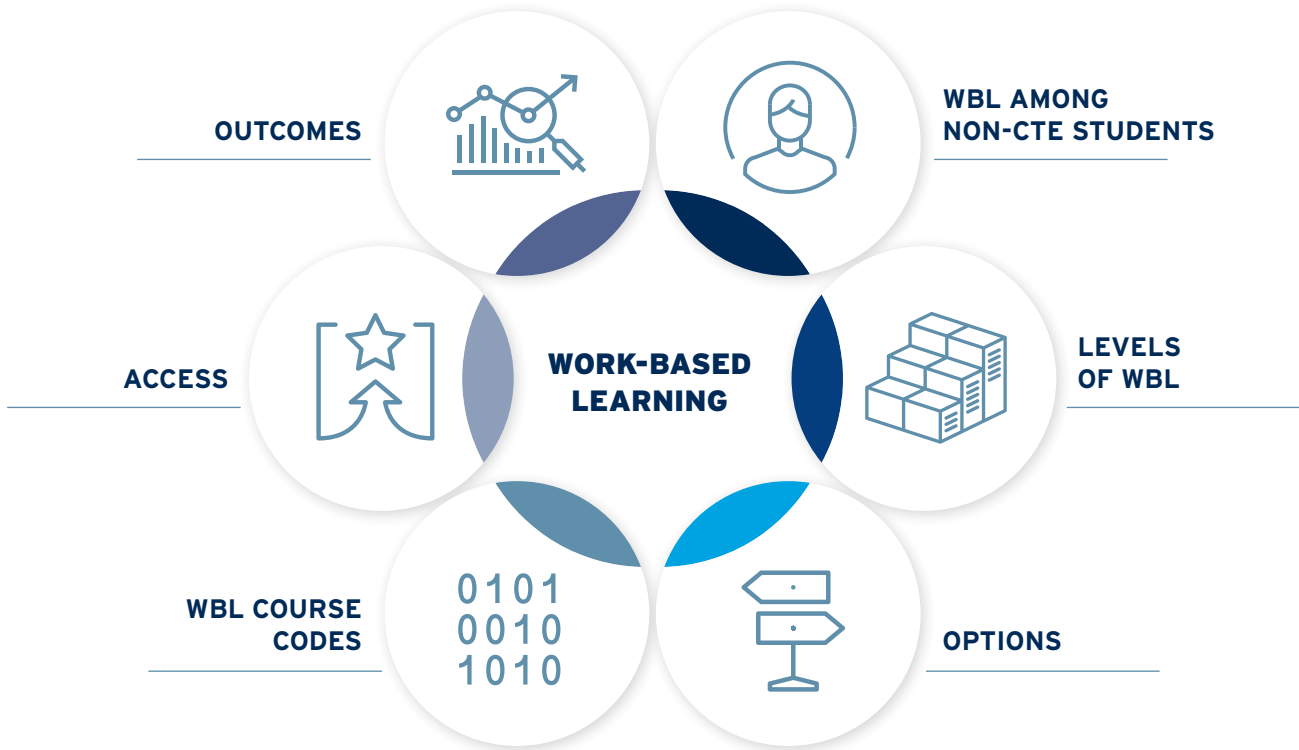
STATE EXAMPLE: WORK-BASED LEARNING DATA



- Ohio CTE students who participate in WBL are tracked using WBL course codes.
- The state's new Personalized Professional Pathway (P-3) program extends WBL opportunities to students who are not enrolled in a CTE program. In the program, WBL experiences are aligned to a CTE course, allowing students' participation to be tracked using course codes.



Work-Based Learning: Indicator Considerations



OUTCOMES

To what extent are states able to assess whether WBL experiences helped students build knowledge and skills?

ACCESS

What data are available on barriers to student participation in WBL?

WBL COURSE CODES

If participation is tracked through course codes, can the data be linked to pathways? Is it possible to collect data on students participating in multiple WBL experiences?

WBL AMONG NON-CTE STUDENTS

Do states collect data on WBL for students in certain types of programs only, or can WBL be tracked among all students?

LEVELS OF WBL

Do state data reflect all components of the WBL continuum and experiences at the elementary, middle, and high school levels?

OPTIONS

What types of immersive WBL opportunities are available to students? Which types are reflected in WBL data, and how?

What are the postsecondary education and labor market outcomes of secondary career pathways graduates?



KEY STRENGTH

- **Widespread use of the National Student Clearinghouse to track postsecondary enrollment in and out of state**



KEY CHALLENGES

- **Connecting education and employment data**
- **Assessing employment outcomes at the occupational level**

High-quality career pathways are designed to connect high school students to aligned postsecondary opportunities, such as entry-level employment in HSHD careers or advanced education and training. Accordingly, NSFY states track two types of student outcomes: postsecondary enrollment and employment within 6 months of high school graduation.

Eight of the 10 NSFY states report postsecondary enrollment data from the National Student Clearinghouse (NSC), which tracks enrollment in public and private postsecondary institutions, including 2-year/4-year, graduate, public/private, trade, vocational, and other settings nationwide. Kentucky and Oklahoma, the two NSFY states that do not use NSC data, cannot provide data on higher education out of state. Although the NSC includes data for most institutions, the data do present some limitations. Data on student majors and degree attainment, for example, are not available until credentials or degrees are conferred, delaying states' ability to assess the relationship between students' secondary and postsecondary programs. States also establish unique agreements with NSC, resulting in state-level differences in when the data are collected and reported. For example, neither Nevada nor Ohio receive NSC data in time for the regular NSFY reporting schedule.

NSFY states access employment data from two sources: 5 of the 10 states tap unemployment insurance (UI) wage record data from their state departments of labor, and the rest collect self-reported data collected through 6-month follow-up surveys of CTE graduates instituted to meet *Perkins* accountability requirements. UI data include all workers in state earning a wage or salary except for self-employed workers, military personnel, select government workers, and other workers ineligible for unemployment benefits. There is no standard source of individual-level employment data for persons excluded from UI data.

Unlike surveys of CTE graduates, UI data are drawn from employer records and include students outside of *Perkins*-funded CTE programs. The data are not self-reported, but have other limitations:

- **Privacy laws**

Some states, such as Louisiana and Ohio, have privacy laws that prevent education agencies from linking education records to UI data.

- **Variable database match rates**

Among NSFY states accessing UI data, match rates between education and workforce databases range from about 50 to 95 percent.

- **Lack of out-of-state employment data**

Individual-level UI data are limited to students employed in a state. The national Wage Record Interchange System 2 provides aggregate data only.³ In response to this limitation, some states have or are exploring cross-state or regional data-sharing agreements, such as the Multistate Longitudinal Data Exchange pilot among 10 western states.⁴

- **Limited occupation-level data**

UI data include the industry of employment but not occupation, making it difficult for states to determine whether students graduates are in HSHD occupations.

Despite the limitations of NSC and UI data, these are still the best available options for assessing students' postsecondary education and labor market outcomes. To improve their understanding of students' postsecondary outcomes state agencies continue to seek opportunities to improve them by combining data sources, seeking new strategies to address privacy laws, developing more robust strategies for matching records across state agencies, and collaborating with other states.



³For more information about this system, see https://www.doleta.gov/performance/wris_2.cfm

⁴For more information about this project, see <https://www.wiche.edu/longitudinalDataExchange>

Career Pathways Postsecondary Outcomes: Indicator Considerations



CAREER PATHWAYS ALIGNMENT

What state data are available to assess whether students continued their education or entered the workforce in fields aligned to their career pathways?

OUT-OF-STATE GRADUATES

What options are available for collecting outcome data on graduates working or, if NSC data are unavailable, attending school out of state?

PRIVACY LAWS

Does state policy allow for data sharing across education levels and among agencies? If not, could a third-party organization or agency link data?

DATA LINKS

What identifiers can be used, alone or in combination, to match data from different sources? What is the match rate?

CONCLUSIONS

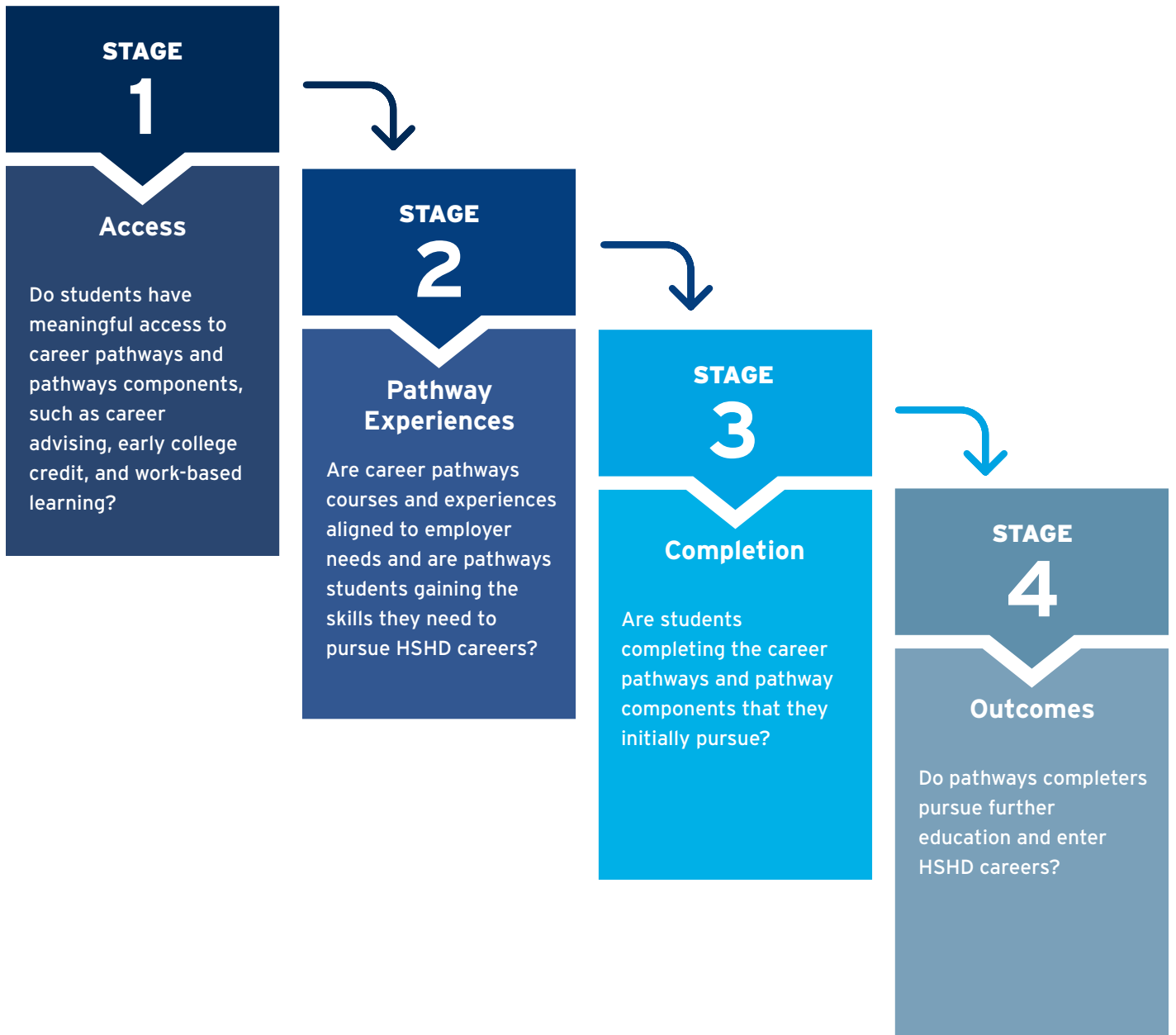
States collect data on students' college and career readiness using data systems closely aligned with federal CTE reporting requirements. Existing federal requirements have encouraged states to collect considerable data on students' participation and completion of CTE programs. As states expand their pathways development beyond federal CTE requirements, notable gaps remain with respect to measuring career pathways access, workforce alignment, early college credit, IRC attainment, guidance and advising, WBL, and postsecondary outcomes. States are working actively to improve their reporting capacity in response to changing state and federal policies promoting career readiness for all students.

Robust career pathway data would address four stages: access, pathways experiences, completion, and outcomes (Exhibit 3). More and higher-quality data at each stage would help educators and other stakeholders follow students' progress through pathways and beyond and identify best practices and areas for improvement. Crucial to ensuring access to pathways benefits all students will be disaggregating data by district, program, and student subpopulations.



EXHIBIT 3

Stages of student career pathways experiences for data collection and monitoring



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