BUILDING A YOUTH APPRENTICESHIP DATA ECOSYSTEM

A STARTER KIT

ADVANCE › CTE
State Leaders Connecting Learning to Work

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INTRODUCTION

Collecting reliable, accurate and timely data is critical to supporting continuous improvement and equitable access to youth apprenticeship opportunities. As youth apprenticeship becomes a more popular strategy for connecting the classroom to the world of work, state and local intermediaries must establish a strong data foundation to ensure they can monitor progress and scale up high-quality programs.

Collecting and using youth apprenticeship data is challenging because it involves multiple partners across education and industry, each with unique responsibilities, roles and interests. Each partner brings a different piece of the puzzle, and only by working together, establishing trust, and building a sturdy data infrastructure can youth apprenticeship partners begin to piece together a full picture of who is participating in and completing youth apprenticeship and transitioning successfully into high-wage employment.

In 2020, Advance CTE, through the Partnership to Advance Youth Apprenticeship (PAYA), released **Improving Youth Apprenticeship Data Quality: Challenges and Opportunities**, which described common challenges and barriers to collecting youth apprenticeship data. These challenges include:

Determining What to Measure	**Clarifying Roles and Responsibilities**	**Building the Infrastructure**	**Accessing the Data**	**Scaling and Sustaining**
For new intermediaries, identifying and prioritizing relevant metrics to collect and report can be difficult.	With multiple partners across education, industry and the non-profit sector, partners struggle to identify who has access to or should be responsible for collecting what data.	State and local intermediaries must build systems that simultaneously protect learner-level records and enable relevant partners to access the data they need.	Partners must be able to access contextualized information about youth apprentices on a recurring basis to inform program implementation and monitor equity and access.	Youth apprenticeship data must be designed with scale and iteration in mind, allowing intermediaries and programs to grow as they engage new learners and new employer partners.

This toolkit is designed to address these challenges by compiling tools and resources that state and local intermediaries can use to improve the quality of youth apprenticeship data. It includes templates, guides and links to external resources that can be adapted and modified to suit different program needs. The toolkit was informed by ongoing meetings of the PAYA Data Workgroup, which consists of PAYA network partners.

STEP 1

DETERMINE WHAT TO MEASURE AND WHY

The first challenge is determining what to measure and why. Youth apprenticeship stakeholders have different needs for data, including federal reporting and accountability, program improvement efforts and equity monitoring. Intermediary leaders should start by engaging partners and stakeholders and building a shared understanding of data needs. The resources in this section can be used to identify and prioritize youth apprenticeship indicators.

CONSIDERATIONS

- What data are you required to include for accountability and grant reporting?
- What do your key stakeholders most want or need to know?
- What information do you need to know whether your program has been successful?
- How will you know if you are recruiting and supporting learners equitably?
- What data would you use if you had it?

✎ TOOL

PAYA'S YOUTH APPRENTICESHIP DATA FRAMEWORK

HOW TO USE: **Use this tool to identify and prioritize indicators that are relevant for your youth apprenticeship program.**

PAYA's Youth Apprenticeship Data Framework

Developed through PAYA, New America's Youth Apprenticeship Data Framework includes a comprehensive list of youth apprenticeship metrics organized into three categories. **Partnership data indicators** collect information about partner organizations and stakeholder engagement and provide important context about the communities and systems in which youth apprenticeship programs operate. **Pathway data indicators** collect information about individual programs and their aligned occupational pathways to understand the scope, design and requirements of different programs. And finally, **participant data indicators** include information about individual youth apprentices such as their demographic data, progress measures and outcomes.

PAYA Data Framework: Partnership

🔍 Search in table

Indicator	Definition	PAYA Principle	Collection Phase	Accountability Requirements
Names and type of organizations in the partnership	Organizations involved in the partnership and the type of organization of each, including schools and school districts, postsecondary institutions, workforce boards or committees, employers employing apprentices and/or contributing to program development, community organizations, government offices or agencies, labor unions, and advisory bodies	🟡 Accountable	Pre-Launch	
Team members involved in pathway course and competency development	Partners who cooperated to develop the competencies, outcomes, courses, and other key instructional and learning elements of the youth apprenticeship pathway, including faculty members from K–12 and postsecondary institutions or agencies, representatives from workforce boards, and relevant employers or industry groups	🔴 Adaptable	Pre-Launch	
Partnership meeting data	Information on major meetings of partnership, including attendance, frequency, represented partners, and agendas and/or minutes	🟡 Accountable	Pre-Launch	

✎ TOOL

DATA NEEDS PARTNER SURVEY

HOW TO USE: **Send this survey to your youth apprenticeship partners to better understand their data needs and expectations. Results from this survey can be used to prioritize the indicators you collect and report.**

As you build and scale a new youth apprenticeship data strategy, start by identifying the expectations and needs of your key partners and stakeholders. Some partners may need access to information for grant reporting, maintaining learner transcript records, advocacy efforts, etc. This data needs survey template for youth apprenticeship partners is designed to help intermediaries gather and document this information to better understand their partners' data needs. Use the following template or modify these questions to survey your own partners.

AUDIENCES:

Core youth apprenticeship delivery partners, including:
- Employers
- K-12 schools and districts
- Postsecondary institutions

Other stakeholders, including:
- Community organizations
- Parent/family organizations
- Learner advocacy organizations

OBJECTIVES:

1. **Identify indicators that youth apprenticeship partners need for their own required reporting.**

2. **Identify indicators that provide information that youth apprenticeship partners want to know.**

SURVEY QUESTIONS

1. **Name**

2. **Organization**

3. **What sector do you represent?**

   State agency   Local secondary institution   Local postsecondary institution   Other

   Intermediary   Non-profit organization   Business

4. **Are there any indicators related to youth apprenticeship that you are required to report for grants, federal or state accountability or other purposes?**

   Yes   No

5. **If yes, what data do you need for accountability and/or reporting purposes?**

6. **How often do you need access to this data?**

   Annually   Biannually   Monthly   Real time   Other

7. **If applicable, provide more information about when you would need access to this data.**

8. **What data do you have available that can be used to monitor equitable youth apprenticeship access and completion?**

9.   In your role, what data would help you better support youth apprentices going through this program?

10. In your role, what data would help you ensure that recruitment activities are equitable?

11. In your role, what data would best help you communicate the effectiveness and benefits of youth apprenticeship to internal and external audiences?

12. How often do you review data to make data-driven decisions?

| Weekly | Monthly | Quarterly | Yearly |
| Once a year | Never (insufficient data) | | Never (other reason) |

13. How often would you like to receive this data?

| Annually | Biannually | Monthly | Real Time |

14. When receiving the data, what level of detail is needed to ensure quality programming? [check all that apply]

Disaggregated by demographic data

Disaggregated by program area

Other

📖 GUIDE
FEDERAL ACCOUNTABILITY CROSSWALK

HOW TO USE: **Use this tool to identify indicators that are already being collected and reported through federal programs and to determine the appropriate agency that has access to this information.**

Federal and state accountability requirements should not be the sole driver of what data is collected, but considering what information you need to comply with reporting requirements is still important. The following crosswalk includes common data elements that are required or aligned with accountability for the Every Student Succeeds Act (ESSA), the Strengthening Career and Technical Education for the 21st Century Act (Perkins V), the Workforce Innovation and Opportunity Act (WIOA) and the Registered Apprenticeship Partners Information Data System (RAPIDS). While these indicators are not always directly aligned, federal law often provides flexibility for states to update their data definitions to align across multiple federal programs.

DATA ELEMENT	ESSA	PERKINS V	WIOA	RAPIDS	NOTES
Enrollment by special population status	✓	✓			
Enrollment by race/ethnicity	✓	✓	✓	✓	
Enrollment by gender	✓	✓	✓	✓	
Enrollment by age			✓	✓	
Number of secondary Career Technical Education (CTE) participants and concentrators		✓			Some states are also reporting CTE participation and/or concentration through their ESSA college and career readiness indicator.
Non-traditional program concentration		✓			Non-traditional students are those enrolled in programs leading to occupations or fields of work for which individuals from their gender comprise less than 25 percent of the individuals employed.
Aligned industry		✓		✓	Perkins V requires data to be reported by Career Cluster® or program.

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FEDERAL ACCOUNTABILITY CROSSWALK

DATA ELEMENT	ESSA	PERKINS V	WIOA	RAPIDS	NOTES
Graduation rate	✓	✓	✓		ESSA and Perkins V require reporting the four-year adjusted cohort graduation rate and an extended graduation rate. For WIOA, attainment of a secondary school diploma or equivalent is an accepted measure of skill gain.
Academic achievement	✓	✓			
Attainment of postsecondary credits in high school	✓	✓			This indicator is optional for Perkins V. ESSA requires states to report enrollment in accelerated coursework, including Advanced Placement and International Baccalaureate courses, but not completion of courses or attainment of credit.
Attainment of industry-recognized credentials	✓	✓			This indicator is optional for Perkins V. Some states are reporting credential attainment through their ESSA college and career readiness indicator.
Completion of work-based learning	✓	✓	✓	✓	
Placement into further education or training	✓	✓	✓		
Placement into full-time employment		✓	✓		Perkins V also includes placement into military service or national community service programs such as the Peace Corps.
Wages			✓	✓	RAPIDS includes starting, current and ending wages. WIOA includes median earnings two quarters after exit.
Hours of on-the-job training				✓	
Year-on-year program retention				✓	
Employer satisfaction			✓		

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DATA SOURCES FOR DISAGGREGATED LEARNER SUBGROUPS

HOW TO USE: Use this table to identify data sources for race, ethnicity, gender and special population status and to align youth apprenticeship data reporting with subgroups reported for other federal programs.

Youth apprenticeship programs should monitor disaggregated subgroup data to ensure that program enrollment and outcomes are equitable. Education programs are already required to report data that is disaggregated by race, ethnicity, gender and special population status. Youth apprenticeship programs can build upon these subgroup categories to disaggregate program data. As they do so, they should ensure that language and processes are well defined at the data-entry stage and that learners and local administrators clearly understand how to categorize learner subgroups. Additionally, subgroup categories should be defined inclusively to recognize the full diversity of learners. For example, providing a non-binary option for gender enables more accurate and inclusive data collection. The following table was developed by the **National Alliance for Partnerships in Equity (NAPE)** and describes different required data elements and recommended data sources for disaggregation under Perkins V.

DATA ELEMENT	DATA SOURCE
Race/ethnicity — American Indian or Alaskan Native, Asian, Black or African American, Hispanic or Latino, Native Hawaiian or Other Pacific Islander, White	Local administrative data — self-reported
Gender — male, female, other	Local administrative data — self-reported
Economically disadvantaged, including low-income youth and adults	Secondary — free and reduced-price lunch eligibility Postsecondary — Pell grant eligibility
Youth who are in or have aged out of the foster care system	Department of Health and Human Services Child Welfare
Students with disabilities	Secondary — students with Individualized Education Plans and Section 504 plans Postsecondary — local registration data
English learners	Local administrative data — home language survey, enrollment in bilingual or English language learner program

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DATA SOURCES FOR DISAGGREGATED LEARNER SUBGROUPS

DATA ELEMENT	DATA SOURCE
Migrant students	Local administrative data — enrollment in migrant education
Homeless students	Local administrative data — self- or staff-reported
Students with a parent in the active military	U.S. Armed Services
Single parents, single pregnant women	Local administrative data — self-reported
Out-of-work individuals	Local administrative data — Department of Labor unemployment insurance or self-reported
Students pursuing non-traditional careers	Identify non-traditional programs by gender, identify students in programs that are non-traditional for their gender

✏ TOOL
LOGIC MODEL TEMPLATE

HOW TO USE: **Use this tool to develop a logic model for new youth apprenticeship programs and to identify indicators that can help you test your theory of action and monitor program implementation.**

New youth apprenticeship programs should select indicators that can be used to monitor implementation and evaluate whether the program is working the way it was designed. Measuring true economic impacts from a new youth apprenticeship program might take some time, but there are indicators that you can look at to tell you whether you are on the right track.

A logic model is an organizing framework that articulates how resources, partnerships, personnel and other program inputs will work together to produce your desired impact. It is a helpful tool to visualize how your program will be designed and to communicate the interacting components of the program to partners, funders and other critical stakeholders.

Importantly, a logic model can also help you identify key performance indicators that can help you both tell how the implementation of the program is going and evaluate whether the program is successful. At each stage of the model, you can identify aligned indicators and incorporate those indicators into routine planning and reporting activities to ensure that you and your partners are informed about the ongoing program. Selecting and reporting relevant indicators that are aligned to your logic model will ensure that program leaders have the information they need to know to make informed decisions.

The following example and template can be used to develop a logic model and select relevant indicators to monitor and evaluate your logic model. Once you identify relevant indicators, make sure you have the resources and processes in place to collect and report the data. For more guidance on developing and implementing logic models, see tools from the **Centers for Disease Control and Prevention Program Performance and Evaluation Office** and the **W.K. Kellogg Foundation.**

SAMPLE YOUTH APPRENTICESHIP LOGIC MODEL

PROGRAM GOAL: Increase the percentage of Black females working in the computer science field.

	RESOURCES/INPUTS	ACTIVITIES	OUTPUTS	OUTCOMES	IMPACT
	State youth apprenticeship grant dollars Industry partnerships	Partner with local businesses to establish a new computer science youth apprenticeship program	Fifteen youth apprentices will be recruited by 2025, and half will be Black females.	Participants will develop skills and build social capital through their youth apprenticeship placements. Eighty percent of program participants, including all Black females enrolled, will complete their youth apprenticeship program.	More Black females will develop the skills, experience and professional network to enter high-wage jobs in computer science.
INDICATORS	• Funds raised • Number of partnerships		• Number and demographics of youth apprenticeship participants	• Results on skills assessments • Work portfolios • Number of workplace mentors • Program completion rates • Credential attainment	• Post-program employment • Post-program wages

LOGIC MODEL TEMPLATE

PROGRAM GOAL:

	RESOURCES/INPUTS	ACTIVITIES	OUTPUTS	OUTCOMES	IMPACT
INDICATORS					

CLARIFY ROLES AND RESPONSIBILITIES

Youth apprenticeship intermediaries often find themselves coordinating multiple public- and private-sector partners, each with its own expectations and access to learner data. Clarifying roles and responsibilities up front is important to ensure that each partner is playing its part and contributing relevant data. Intermediaries should make sure to clearly articulate what each partner is responsible for, either through the partnership agreement or through a formal data sharing agreement. Additionally, intermediaries can help develop data definitions and business rules specifying how data elements are collected and reported to ensure that all partners are speaking the same language.

CONSIDERATIONS

- **What information do partners already have access to?**
- **How can you build buy-in from partners and cultivate a shared understanding of the value of data?**
- **Does the state have an existing youth apprenticeship definition and/or business rules?**
- **What roles are partners best positioned to play, given their capacity, skills and needs?**

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COMMUNICATING THE "WHY"

HOW TO USE: **Use these guidelines to frame your conversations with partners about the importance of collecting accurate and reliable youth apprenticeship data.**

As you engage youth apprenticeship partners in the data collection process, be sure to communicate the benefits and importance of gathering accurate data. Use the following checklist to guide your internal communications with partners.

As you work with youth apprenticeship partners, be sure to communicate that:

- **Data is essential for equity.**

  Collecting data on learner participation and success in youth apprenticeship programs enables you to identify barriers and make real-time decisions to improve equity and access.

- **Data helps improve program quality.**

  Monitoring progress on key indicators can help you identify which components of your program are working effectively and which need to be improved.

- **Data is essential for measuring return on investment.**

  Building a strong data foundation now can help you measure the long-term economic impact of youth apprenticeship and demonstrate to employers that their investment was worthwhile.

- **Regular data collection makes reporting easier.**

  Establishing regular data collection routines makes building reports easier when grant reporting season comes around.

- **Data can help build a case for youth apprenticeship.**

  The more you know about the outcomes and impact of youth apprenticeship, the easier building support for future funding, recruitment and employer partnership will be.

⌁ EXAMPLE

WISCONSIN CAREER EDUCATION PROGRAMS DATA ELEMENTS

Wisconsin Career Education Programs Data Elements

The Wisconsin Department of Public Instruction requires local education agencies to submit data on enrollment and participation in career education programs. This information is collected through the state's longitudinal education data system, which is called the Wisconsin Information System for Education. The Department of Public Instruction maintains clear guidelines for collecting career education data, including youth apprenticeship participation, which is updated annually. Youth apprenticeship is one of several Certified Career Education Programs, and the guidelines include a detailed definition and specifications for counting youth apprenticeship participants.

Wisconsin's Youth Apprenticeship Definition

Youth apprenticeship (YA) is a statewide work-based learning program designed for high school students who want hands-on learning in an occupational area at a worksite along with related technical classroom instruction. YA is a one- or two-year elective program that combines academic and technical instruction with mentored on-the-job learning in technical skills aligned to industry standards for a minimum of 450 hours per year. It is managed at the state level by the Department of Workforce Development through regional consortia.

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COMMON ROLES FOR CORE YOUTH APPRENTICESHIP PARTNERS

HOW TO USE: Use this tool to help you define, clarify and assign roles for collecting youth apprenticeship data among core program partners.

EDUCATION INSTITUTIONS	STATE AGENCIES	INTERMEDIARIES	EMPLOYERS
• Collect and maintain academic records. • Leverage disaggregated data to monitor equity and access and ensure adequate learner supports. • Align curriculum, standards and competencies across secondary and postsecondary programs. • Maintain data security protocols. • Establish and execute data sharing agreements.	• Set a shared statewide vision and establish definitions and business rules for collecting data across the state. • Report youth apprenticeship data and communicate the importance and impact of youth apprenticeship. • Enact policies and adopt technologies that enable the collection, storage, linkage, analysis and use of youth apprenticeship data at the state level. • Ensure that key youth apprenticeship metrics are aligned and integrated into P-20W and statewide longitudinal data systems. • Aggregate and disseminate data to local intermediaries. • Provide technical assistance, training and support to help new sponsors gather and evaluate their data. • Leverage disaggregated data to monitor equity and access and identify policy barriers.	• Engage partners to clarify roles, set shared goals and provide guidance on data collection activities. • Set and monitor goals for equity and access and create feedback loops to ensure that all partners are aware of progress toward goals. • Evaluate data to measure and communicate the benefits of youth apprenticeship to prospective participants, new employer partners and the public. • Facilitate the development of data sharing agreements among local partners. • Survey partners to understand their data needs. • Coordinate with state leaders to fill gaps in access to data.	• Monitor hours, wage records, wage progression and work tasks through the youth apprenticeship program. • Identify relevant knowledge and skills and help select assessment mechanisms to evaluate learning. • Complete learner evaluations. • Identify training opportunities and collect data on hours and type of training offered. • Support measurement of the return on investment from participation in apprenticeship programs.

BUILD THE INFRASTRUCTURE

Whether you are collecting data through spreadsheets or integrating data collection into an existing database, ensuring that you have a strong infrastructure that guarantees access to key partners, protects learner privacy, and is designed for long-term sustainability is important as your youth apprenticeship program grows. Many states have well-established statewide longitudinal data systems (SLDS) that link learner-level data across education levels. According to the **National Center for Education Statistics**, "half or more of states and territories reported that automated infrastructure is in place to link K-12 student data to other data, depending on the data sector." If your state already has a robust longitudinal data system, you may be able to access the data you need through a partnership with the relevant state agency. The tools and resources in this section are designed to help you assess your state's data capacity and build your own systems for collecting youth apprenticeship data.

CONSIDERATIONS

- Can you leverage existing data systems and technology such as state P-20W data systems to collect and report youth apprenticeship data?
- How can you design low-cost data systems that are built to be scaled?
- To what degree can you automate data collection and linkages of learner records to minimize the data collection burden for partners?
- How do you ensure the security and privacy of learner records?

RESOURCE
50-STATE COMPARISON OF SLDS

50-State Comparison of SLDS

The U.S. Department of Education and state governments have made significant investments in the development and expansion of SLDS, though the quality and accessibility of data varies from state to state. **The George W. Bush Institute's Education and Workforce Pipeline website** documents each state's SLDS; evaluates the structure, governance and support for each system; and illustrates the data that each state is able to report through its SLDS.

Percentage of States and Territories with Other Sector Data Linked to K-12 Learner Data

K-12 Teacher
43%

Postsecondary
51%

Workforce
21%

Perkins CTE
53%

0   50   100

Source: **National Center for Education Statistics**, Statewide Longitudinal Data System Survey, Fall 2018

✐ RESOURCE
HIGH SCHOOL ACCOUNTABILITY INDICATORS

HOW TO USE: **These resources can help you determine whether your state is already collecting and reporting youth apprenticeship data through its federal or state accountability system.**

As you build out your youth apprenticeship data infrastructure, be sure to identify whether your state is counting youth apprenticeship or work-based learning in its ESSA and/or Perkins V accountability system. This information can help provide meaningful connection and collaboration between state agencies and local intermediaries. The following two resources can help you identify whether your state is collecting and reporting youth apprenticeship data through ESSA or Perkins V:

Making Career Readiness Count

This report from Advance CTE, Education Strategy Group, the Council of Chief State School Officers and Achieve examines how states are measuring college and career readiness in their state and federal accountability systems. Appendix 1 includes a description of each state's accountability system, including information on whether or not a state requires the collection of college and career readiness data and if that data meets specific thresholds (fundamental, advanced, exceptional).

The State of Career Technical Education: An Analysis of States' Perkins V Priorities

This resource from Advance CTE summarizes trends from state Perkins V plans. Through Perkins V, states can choose to report a measure of Career Technical Education (CTE) program quality from among three options: recognized postsecondary credential attainment, postsecondary credit attainment and work-based learning. Appendix B lists the indicators that each state has chosen to report.

States Reporting Work-Based Learning through Federal and State Accountability Systems

ESSA or High School Report Cards

24%

Perkins V

53%

Source: Advance CTE, Education Strategy Group, the Council of Chief State School Officers and Achieve, **Making Career Readiness Count**, 2019 and Advance CTE, **The State of Career Technical Education: An Analysis of States' Perkins V Priorities, 2020**

RESOURCE

DATA QUALITY CAMPAIGN'S A STOPLIGHT FOR STUDENT DATA USE

HOW TO USE: Use these tools when starting to build out a data infrastructure across partner organizations to ensure that the data you are sharing is allowable under FERPA rules and regulations.

Data Quality Campaign's A Stoplight for Student Data Use

When handling youth apprenticeship data, partners should be aware of the rules and regulations around data privacy for minors. Understanding the laws that govern what information can be shared and where there may be restrictions can assist partners in the development of a data infrastructure that protects the identities of the youngest learners.

The Data Quality Campaign developed a resource that provides a high-level overview of some of the main provisions of the Federal Educational Rights and Privacy Act (FERPA), describing when and how identifiable learner-level data can be shared. While this tool contains useful information with a red, green and yellow stoplight system, it is meant to serve as a guide and is not a comprehensive review of data disclosures that are authorized under FERPA.

States also have their own unique privacy context, and youth apprenticeship intermediaries should familiarize themselves with any state-specific privacy requirements that would apply to the learners in their programs. Data Quality Campaign's **2016 state legislation summary** includes an overview of state privacy policies, though intermediaries should confirm the latest policies with their own states.

Separately, the **Privacy Technical Assistance Center of the U.S. Department of Education** developed a document to aid institutions in determining what conditions of the FERPA law allow for disclosure of personally identifiable information. The document provides a high-level overview of the four most commonly used exceptions to the FERPA written consent rule. Additional resources on **privacy and data sharing** can help you navigate FERPA regulations and understand when and how personally identifiable data can be used.

📖 GUIDE

YOUTH APPRENTICESHIP DATA SYSTEM DESIGN PRINCIPLES

HOW TO USE: **Use these design principles to guide the selection or development of a youth apprenticeship data system or to assess the quality of your current data system.**

Youth apprenticeship programs should build data systems that suit their needs and are affordable and accessible given their available resources. If you are starting a new program with a dozen learners, collecting data through spreadsheets might make more sense than building out a full-scale data system. Many youth apprenticeship programs also use off-the-shelf and customizable platforms such as Salesforce to store learner and employer information and track learner progress. Whatever system you choose, the following design principles can help you select and design a system that meets your needs and expectations for youth apprenticeship data.

Youth apprenticeship data systems should:

- **Store data in a machine-readable format.**

  Data should never be stored in PDF or hand-written documents. Even if your program is small, these formats will make for a major headache later on if you try to digitize your records. Make sure to store data in a machine-readable format such as spreadsheets or data tables to make analyzing it easier in the future.

- **Store data securely.**

  Be careful to use trusted systems that store data securely. Data encryption, two-factor authentication and other methods can help keep your data safe.

- **Restrict access to those with the appropriate credentials.**

  However you are storing your data, be sure to monitor who has access, require passwords to enter the data system, and limit permissions based on the individual's authorization.

- **Indicate when the data was last updated.**

  Always indicate the last time the data was updated to help users interpret it.

- **Enable quick insights and analysis.**

  Creating simple dashboards and data tools can help users understand and make meaning of the data. These resources are particularly useful if you are working

with a large number of learner records dating back over several years. Even if your youth apprenticeship database is an Excel document or Google sheet, you can still use pivot tables to generate dynamic reports and analytics.

- **Include both learner and employer data.**

  Your youth apprenticeship data system should allow you to draw information about individual learners as well as participating employers. See the PAYA Data Framework in Step 1 for more information on the types of data you should collect.

- **Be designed for interoperability.**

  Make sure your data is in the same format and uses the same business rules as other education and workforce data systems in your state. This consistency will make linking data easier later on if you want to measure long-term outcomes or incorporate youth apprenticeship data into an SLDS.

- **Enable extensibility.**

  As your youth apprenticeship program evolves, you need a data system that can evolve with it. Make sure you can add new indicators and new functionalities to account for changes in partner demands, new policies, program growth, etc.

⤳ EXAMPLE

WISCONSIN YOUTH APPRENTICESHIP STUDENT PARTICIPATION DATA DASHBOARD

Wisconsin Youth Apprenticeship Student Participation Data Dashboard

Before developing a data dashboard, it can be helpful to learn from other states and intermediaries through examples of their work. Wisconsin has led a statewide youth apprenticeship program since legislation was passed in 1991. The state's data dashboard provides partners a visual representation of the numbers of learners and employers participating in the youth apprenticeship system. The data can be disaggregated by grantee, school, county and program area. Partner agencies looking through the data are able to see participation rates for the past 10 years.
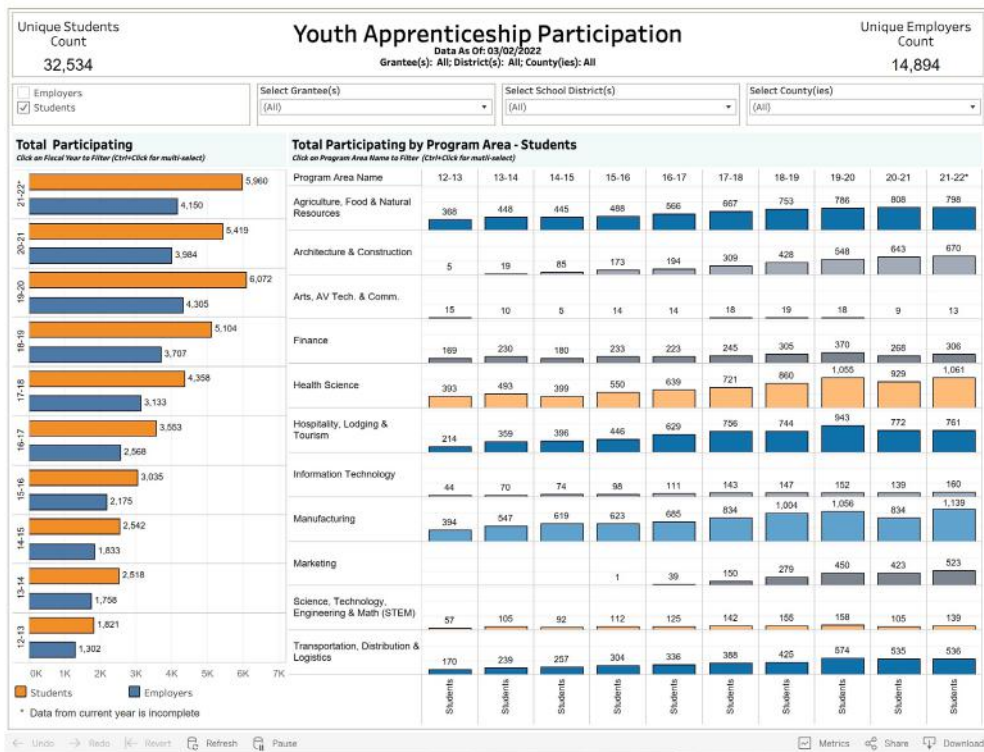
✎ TOOL

YOUTH APPRENTICESHIP DATA COLLECTION TOOL

HOW TO USE: **For new youth apprenticeship programs, use this tool to begin identifying and collecting the key data components you need for the success of your program.**

Early-stage youth apprenticeship programs should consider how they will collect and store the data that will be necessary for driving program quality. While building out an entire data system before launching a new youth apprenticeship program might not be feasible, state and local leaders should establish systems and processes that can be scaled easily. Engaging partners in the discussion around where data should be housed will be important so as to not duplicate work already happening across institutions. Whatever the approach, intermediaries should be sure to collect youth apprenticeship data in a way that is comparable and manageable by formatting data elements consistently and using machine-readable documents such as Excel spreadsheets instead of PDFs or hand-written documentation.

Sample Youth Apprenticeship Data Collection Tool

⇗ EXAMPLE

TRIDENT TECHNICAL COLLEGE'S MY APPRENTICE APP

Trident Technical College's My Apprentice App

In South Carolina, Trident Technical College partnered with Stingray Branding to develop an app called **My Apprentice**. The app uses geofencing to automatically monitor on-the-job training hours for youth apprenticeship participants. The data is still validated by employers and supervisors, but the program reduces all of the up-front data entry, making focusing on the training itself easier for learners and employers. In addition to monitoring hours completed on the job, the app can track job-related education and tasks required to be completed on the job for the apprenticeship. It even includes a final competency assessment tool to make collecting and monitoring data about apprenticeship participants as easy as possible for employers. As with all programs that use learner-level data, state and local intermediaries working to replicate this approach should make sure their application complies with federal, state and local privacy regulations.

STEP 4

ACCESS THE DATA

One of the central challenges of running a youth apprenticeship program is ensuring that all partners have access to the data they need when they need it. Start by identifying which partners are able to access what data elements and on what timeframe and then use that information to build routines and systems to gather, link and share data. This work will often require setting up data sharing agreements with different partners. This section is designed to help you access the data you need from different partners.

CONSIDERATIONS

- **What data do different partners have access to?**
- **How will data be transferred securely between partners? What technology, processes and assurances are necessary?**
- **How will partners work to share data across siloed data infrastructures?**
- **What youth apprenticeship data needs to be collected within each partner's scope of work?**

📎 RESOURCE
PARTNER DATA INVENTORY

HOW TO USE: Meet with partners and fill out the template to document your data collection plan for each of your priority data elements.

Partner Data Inventory

This resource, developed by New America through the PAYA initiative, is designed to document what data partners have and how it is collected. For each data element — which could include partnership, pathway and participant data — users can identify the source, the individuals responsible for data collection, and the frequency of data collection. An accompanying **data availability checklist** aligned to the PAYA Data Framework can help you identify data elements for review. The partner data inventory can help you document available data and think strategically about how to fill gaps.

GUIDE

DEVELOPING AND EXECUTING DATA SHARING AGREEMENTS

HOW TO USE: **Consider these questions and resources when writing and executing a new data sharing agreement with partners.**

A data sharing agreement is used to establish parameters, rules and routines for sharing data among trusted partners. **FERPA permits** educational institutions to disclose personally identifiable information without consent in specific cases: to provide directory information, to disclose information to outside parties acting as "school officials," to participate in research studies, and to conduct audits or evaluations. In these cases, written agreements are often required to describe the purpose for sharing the data.

The Privacy Technical Assistance Center outlines the specific requirements for written data sharing agreements depending on the type of activity. In addition to required elements, the **Written Agreement Checklist** includes best practices for data sharing.

An effective data sharing agreement ensures not only that data is processed and transferred securely but also that it is provided in a format and at a frequency that are useful to all parties. Data sharing agreements should also use consistent language across all agreements to make them easier to move through the legal review process and maintain and update. When you develop a data sharing agreement, it is important to address:

- **Purpose for data sharing:**
  How will the exchange of data benefit all involved parties, and what is the intended use of the data?

- **Data security:**
  What protocols are required to protect learner privacy and minimize the risk of exposure?

- **Authorized representatives:**
  Who is authorized to receive the data? Make sure to designate specific individuals within the organization who can access and process the data.

- **Format and specifications of data:**
  What data elements should be included in the data transfer? Do you need learner-level data, or will aggregated data suffice? What format does the data need to be in?

- **Frequency of data transfer:**
  How often will data need to be transferred between partners? Consider aligning data sharing with reporting timelines and/or strategic planning meetings.

- **Process for data transfer:**
  How will the data be securely transferred and stored?

- **Termination of the agreement:**
  When will the agreement expire? How do parties determine whether to discontinue the agreement? Make sure to specify a timeline for destroying personally identifiable information.

 EXAMPLE

DATA SHARING AGREEMENTS FROM THE NATIONAL NEIGHBORHOOD INDICATORS PARTNERSHIP

Data Sharing Agreements from the National Neighborhood Indicators Partnership

The National Neighborhood Indicators Partnership, coordinated by Urban Institute, compiled data sharing agreements among various entities, including school districts, institutions of higher education, non-profits, researchers, state education agencies and more. These templates demonstrate different approaches to establishing and executing protocols for sharing education data among partners.

✎ TOOL
YOUTH APPRENTICESHIP DATA MAP

HOW TO USE: **How to Use: Use this tool to identify potential sources for data and establish data sharing agreements with state and local partners to gather the data you need.**

While access to relevant youth apprenticeship data will vary from state to state and program to program, the PAYA Data Workgroup identified a few common data elements owned by education, employer, state and other partners. The following table describes common data elements and who is likely to have access to them.

DATA ELEMENT	Local School District/College	State Education Agency	State Department of Labor	State Department of Higher Education	State P-20W Data System	Intermediary	Employer
PARTNERSHIP DATA							
Employer information			✓			✓	✓
Stakeholder engagement activities and feedback						✓	
Apprentice recruitment activities						✓	
Registered apprenticeship data			✓			✓	✓
PATHWAY DATA							
Labor market data			✓				
Hours and type of training provided							✓
Year-on-year program retention						✓	
Required Perkins V and ESSA accountability data	✓	✓			✓		
Average financial costs borne by apprentices						✓	

✎ TOOL
YOUTH APPRENTICESHIP DATA MAP

DATA ELEMENT	Local School District/College	State Education Agency	State Department of Labor	State Department of Higher Education	State P-20W Data System	Intermediary	Employer
PARTICIPANT DATA							
Learner demographics	✓	✓		✓	✓		
Course-level data (enrollment, grades, etc.)	✓	✓		✓	✓		
CTE participation/ concentration	✓	✓		✓	✓		
Financial aid data				✓	✓		
Unemployment insurance and wage records			✓		✓		✓
Early postsecondary credit attainment	✓	✓		✓	✓		
Degree/credential attainment	✓			✓	✓		
Apprentice progress toward competency/ skill goals							✓

SCALE AND SUSTAIN USING AN EQUITY LENS

State and local youth apprenticeship intermediaries should design programs and policies with scale and sustainability in mind. Iterating and experimenting is much easier in the design or early pilot stage — when you can move quickly and make mistakes in a low-stakes environment — than after your program has reached scale. When it comes to collecting and analyzing data, solutions that are workable with a small group of youth apprentices may be untenable by the time you enroll your 100th participant or add your fifth program area. Additionally, using your data to examine enrollment patterns and evaluate program quality can equip you to scale your program thoughtfully and with an eye for equity and program quality.

CONSIDERATIONS

- **How can you use your data to make the case and build public support for youth apprenticeship?**
- **Would your data systems and processes still work if your program grew by a factor of 10? Would they still work if you expanded to new program areas?**
- **What core indicators, processes and systems are foundational to the success of your program?**
- **What data do you need to ensure that you can grow your program in an equitable manner?**
- **What resources can you offer partner sites when gaps are identified?**
- **How frequently should your partnership review the various data to assess progress toward equity goals?**

⤢ EXAMPLE

WISCONSIN YOUTH APPRENTICESHIP MEDIA PACKET

HOW TO USE: **When building a marketing and communications strategy, use these tools to begin to collect success stories that share the experiences of youth within your programs.**

To advance the work of Wisconsin's youth apprenticeship programs, the Department of Workforce Development designed several documents that offer guidance on communication and marketing.

Guidance on Sharing the Success of Youth Apprenticeship:

This tool provides a basic foundation for outreach to the media to communicate the success of local youth apprenticeship programs.

Submit Success Stories/Events:

This tool provides a fillable template for local intermediaries to share with the state agency stories and events happening within their jurisdiction. The state agency, through those stories and events, is then able to provide a larger media presence.

Waiver Form:

This form is used to request permission to copyright, reproduce and/or publish in print, broadcast electronic or other media, photographic images, video and audio recordings and/or interviews and to make derivative works of the images, recordings and interviews and use them for any such purposes.
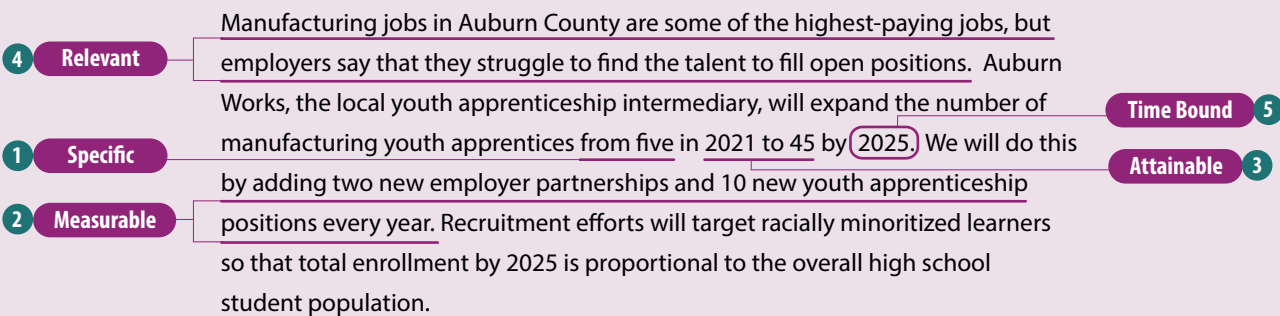
✎ TOOL

SMART GOAL-SETTING TEMPLATE

HOW TO USE: **For new youth apprenticeship programs, use this tool to begin identifying and collecting the key data components you need for the success of your program.**

SMART framework

As you consider how to scale your youth apprenticeship program, setting long-term goals can be a helpful strategy. Consider the **SMART framework** for goal setting. Goals should be Specific, Measurable, Attainable, Relevant and Time Bound.

1. **Specific:** In as much detail as possible, describe the challenge and what you hope to accomplish. Identify those responsible and accountable for executing the goal.

2. **Measurable:** Identify measures of success and how you plan to track progress.

3. **Attainable:** Make sure the goal is realistic. Do you have the skill, will and resources to achieve this goal? If not, what is a more realistic goal? A good SMART goal is both ambitious and attainable.

4. **Relevant:** Determine whether this goal is related to your vision for youth apprenticeship. How will it help you actualize this vision? If needed, refer back to your logic model in Step 1.

5. **Time Bound:** Set a specific date when the goal will be achieved.

EXAMPLE: Youth Apprenticeship SMART Goal

4 **Relevant**

1 **Specific**

2 **Measurable**

Time Bound **5**

Attainable **3**

Manufacturing jobs in Auburn County are some of the highest-paying jobs, but employers say that they struggle to find the talent to fill open positions. Auburn Works, the local youth apprenticeship intermediary, will expand the number of manufacturing youth apprentices from five in 2021 to 45 by 2025. We will do this by adding two new employer partnerships and 10 new youth apprenticeship positions every year. Recruitment efforts will target racially minoritized learners so that total enrollment by 2025 is proportional to the overall high school student population.

✎ TOOL
SMART GOAL-SETTING TEMPLATE

HOW TO USE: Use this template to set your own youth apprenticeship SMART goals.

	GOAL *Describe why it is relevant.*	**TARGET DATE** *When will you hit this goal?*	**SUCCESS MEASURES** *What data will you use to measure success? How is equity incorporated into your success measure?*
SMART GOAL 1			
SMART GOAL 2			
SMART GOAL 3			

✑ RESOURCE
ROOT CAUSE ANALYSIS GUIDELINES

HOW TO USE: **Identify methods for conducting a root cause analysis and determining underlying barriers to access and success in youth apprenticeship programs.**

Root Cause Analysis Guidelines

Disaggregating data and identifying opportunity gaps is vital to serving all learners in youth apprenticeship equitably. A root cause analysis helps lead users to a more in-depth understanding of how to fix, compensate for or learn from any underlying issues as well as how to apply what is learned from the analysis to prevent future issues.

This resource developed by the University of Chicago outlines several problem-solving methods used to identify root causes. Each method (cause and effect, five whys, brainstorming and workflow diagrams) is described in detail in the resource to provide users with ample background in moving through the identification process. This tool can be leveraged by youth apprenticeship programs to identify root causes for opportunity gaps.

🖇 RESOURCE
EQUITY IN YOUTH APPRENTICESHIP PROGRAMS

HOW TO USE: When equity gaps are identified in the data, use this tool to incorporate resources and activities to eliminate disparities.

Equity in Youth Apprenticeship Programs

This toolkit developed by NAPE through PAYA acknowledges and addresses equity challenges around three main pillars: Access, Belonging and Continuous Improvement. The toolkit provides resources and activities to help youth apprenticeship partners eliminate disparities and purposefully establish equitable high-quality career pathways for every learner. Practitioners can use this tool individually or as a partnership to increase their awareness of potential barriers to student access and success in youth apprenticeships and to equip themselves with strategies to eliminate the barriers.

ACKNOWLEDGMENTS