

SEVEN LESSONS LEARNED

About Building Linked Data Systems



In October 2019, the American Institutes for Research (AIR) hosted the ***Following Students After Graduation: Best Practices for Tracking Postsecondary and Workforce Outcomes*** convening, funded by the William and Flora Hewlett Foundation. This convening brought together researchers and representatives from district, regional, and state data offices to share and document successful strategies for creating data systems that link student records over time in order to capture K–12 students' longer term postsecondary and workforce outcomes.

This convening was part of the *Study of Deeper Learning: Opportunities and Outcomes*. To learn more about the study, visit <https://www.air.org/project/study-deeper-learning-opportunities-and-outcomes>.



Attendees at the convening provided different perspectives on building and using linked data systems. From these varying viewpoints, we gleaned seven main lessons for those who may be early in the journey of building linked data systems to connect longer term outcomes, including postsecondary education, workforce, and civic outcomes.



1. Begin with the goals in mind.

Be thoughtful up front about the questions you are trying to answer using longitudinal outcome

data. Many different types of data are collected and could be collected; beginning with clear goals about the specific outcomes of interest will help guide district and state improvement efforts, inform key messages to build buy-in, and prioritize limited time and resources for data collection and reporting.

Example: As states think about how to link workforce outcomes to K–12 and postsecondary education data, it is important to first clarify what story such linkages can tell, what data would need to be collected, and what this information will allow educators and policymakers to do that is not already possible with existing data systems.



2. Balance short-term and long-term needs.

Balance the big-picture view of the potential of linked data systems (e.g., long-term economic development) **with the specific challenges that are on the table right now** (e.g., students are underprepared and failing, adults are unskilled and unemployed). Identifying the short-term and long-term needs of the linked data system will help guide its ongoing development and will help to proactively identify potential roadblocks. In some cases, compromising to create a more limited system that addresses short-term challenges, while slowly working toward a more comprehensive system, will be the most strategic path forward.

Stakeholders are those with an interest in the collection and use of the data, whereas data owners are those with the legal responsibility to maintain the data and authorize access to the data. Stakeholders and data owners may or may not be the same people.



3. Identify available data, key stakeholders, and data owners.

Take time to inventory what data are already being collected and consider the following:

- Can existing data be used to address questions or inform goals?
- Where are there gaps or partially collected data?
- Who are the major stakeholders and data owners?

This data inventory will create a comprehensive picture of what data are available and where these data reside. Identifying the stakeholders and data owners for each data source is critical.



4. Build relationships and identify champions.

Build relationships with key stakeholders and data owners. Taking time to establish a widespread yet loose coalition of supporters of linked postsecondary and workforce data systems will ultimately pay dividends. **Engage a variety of stakeholders**, including state K-12 and higher education agency staff, state workforce development staff, staff from workforce development boards, members of state boards of education, legislators, state leadership (e.g., the governor, the attorney general), parent groups, researchers, and data privacy groups. Each of these stakeholders have unique interests and needs with respect to data collection, usage, and linkage.



5. Develop guiding principles for the data system.

Once overall goals are developed and stakeholders and champions are on board and engaged, develop a set of guiding principles for the data system. Guiding principles will ground data governance, data privacy, and data access processes.

These principles will serve as a reference point when challenges or issues arise in the operation and use of the system. There is no single model for what a perfect linked data system should look like. What your system looks like is dependent on the local context, the goals developed for the system, the questions users want to answer, and the rules that govern data use.



6. Design a governance structure.

Data governance outlines the requirements and expectations for data security and the parameters for accessing and using the data. In addition to the many logistical issues related to housing large data sets and identifying who will manage the data, data governance processes and structures should include how data systems would address the following:

- What data will be shared and with whom?
- For how long will individuals be tracked?
- Will data be shared across states? If yes, how will it be shared?



7. Focus on quick wins and share successes.

Have early, demonstrable wins. These successes will show that the linked data system provides access to data more effectively and efficiently than current segregated data systems and provides answers to questions that users are having in real time.

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