



A GUIDE TO

Developing a Statewide Education Data Hub

A practical roadmap for state education agencies building shared data infrastructure that reduces reporting burden and delivers real value to districts.



What You'll Find Here

This guide lays out a practical path for state education agencies considering—or already building—a statewide data hub. It draws on the experience of states that have used the Ed-Fi® Data Standard to modernize reporting and deliver new services to districts.

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Rethinking What State Data Systems Can Do

State education agencies collect an enormous amount of information from school districts. Yet in many states, the systems used to collect that information were designed primarily to meet reporting deadlines—not to help educators, state leaders, or communities use data to improve student outcomes.

Traditional state reporting can be time-consuming and error-prone. District staff spend significant time pulling information from multiple systems, reformatting files, correcting errors, and resubmitting data. State teams then devote additional resources to validating, cleaning, and reconciling those submissions. By the time the data is ready to use, it may be weeks or months old—limiting its value for helping educators identify needs, target support, and act when it can make the greatest difference for students.

A statewide Data Hub offers a different model.

Built on shared data standards and modern application programming interfaces, or APIs, a Data Hub creates a secure foundation through which information can move consistently between district systems, state systems, and approved applications. It modernizes state reporting while also returning useful information and services to districts.

The result is not simply a more efficient reporting system. It is shared infrastructure that helps educators identify student needs sooner, improves the delivery of services, reduces administrative burden, and makes statewide initiatives easier to implement.

What Is a Statewide Data Hub?

A statewide Data Hub is shared education data infrastructure that enables school districts to securely connect, organize, and use information from multiple systems.

Rather than asking districts to repeatedly prepare and upload files, a Data Hub allows approved systems to exchange information through standards-based integrations. Data can flow more continuously, with clearer validation rules and fewer manual steps.

A well-designed Data Hub can support three connected functions:

- Data integration: securely connecting student information systems, assessment platforms, learning applications, and other approved technologies.
- State reporting: providing timely, consistent information for funding, accountability, compliance, and policy analysis.
- Local data services: giving districts access to analytics dashboards, alerts, shared applications, and other tools that support students and educators.

The most effective hubs preserve appropriate local control while creating infrastructure that districts do not have to build independently. This is particularly useful for smaller districts that may not have the staff, funding, or technical capacity to maintain advanced integrations and analytics tools on their own.

Start with the Value a Data Hub Should Create

A statewide Data Hub should not begin as a technology procurement exercise. It should begin with a clear understanding of the problems the state and its districts are trying to solve.

Common state challenges include:

- Data that takes weeks or months to compile
- Inconsistent formats across districts and vendors
- Missing or incomplete information
- Significant staff time devoted to cleaning and reconciling data
- Difficulty responding quickly to legislative or policy questions

Districts experience their own challenges:

- Repetitive and labor-intensive reporting requirements
- Delayed feedback about submission errors
- Limited access to statewide assessment or program information
- Incomplete student records when students transfer
- Difficulty identifying attendance, academic, or service needs early enough to respond

A Data Hub creates the greatest value when it addresses both sets of needs. Modernizing state reporting can reduce burden, but local applications and services demonstrate that the new infrastructure is also being built *for* districts—not simply to collect more information *from* them.

That distinction is important. District participation and trust increase when local leaders can see how the work will improve services, reduce duplication, or help staff act sooner on behalf of students.

Build on a Shared Data Foundation

A shared data foundation makes reporting faster, reduces duplicate work, and gives districts more reliable information. The Ed-Fi Data Standard provides a broad foundation for education data, connecting with other standards that serve specific purposes across the entire education ecosystem.

The Ed-Fi Data Standard provides a shared taxonomy for information related to students, schools, programs, assessments, attendance, and other areas of education. Ed-Fi API specifications allow technology providers to exchange that information consistently and securely, without relying on repeated manual file preparation.

Using a community-governed standard gives states a foundation that is already understood by a growing network of education agencies and technology providers. It also makes it easier to reuse tools, implementation practices, and integrations developed by other states.

States should keep as closely as possible to the core Ed-Fi Data Standard. It can be tempting to reproduce every field, definition, and process from a legacy state reporting system. Doing so, however, recreates the complexity the modernization effort is intended to solve.

Unnecessary state-specific modifications can:

- Increase development and maintenance costs
- Make integrations more difficult for vendors
- Limit the state's ability to reuse community-developed tools
- Create additional work during future Data Standard upgrades
- Preserve outdated reporting processes within a new technical system

Extensions may be appropriate when a state has a genuine policy or program requirement that is not represented in the core standard. They should be purposeful, limited, and developed only after the state understands what information is already available through the core model.

Learn from Statewide Data Hub Leaders

States are already demonstrating how shared data infrastructure can streamline reporting, student services, and statewide priorities.

INDIANA *Turning compliance data into actionable information*

Indiana modernized a decades-old collection system by adopting the Ed-Fi Data Standard in phases and working closely with districts and technology providers.

The same statewide data foundation now supports applications for district use including a student data backpack, college and career readiness dashboards, attendance insights, and an early warning system. Information once collected primarily for compliance can now help educators and families understand student progress and respond sooner when support is needed.

MICHIGAN *Shared infrastructure at statewide scale*

The Michigan Data Hub connects districts through infrastructure built on the Ed-Fi Data Standard. The hub supports services such as literacy planning, student transfer information, and resources for special populations.

When a student changes schools, state-verified information about programs and services can be made available more quickly, reducing delays in support. Michigan has also demonstrated the potential financial value of shared infrastructure, with a 2024 analysis identifying more than

\$41 million in annual savings and an estimated return on investment of 830 percent.

NEBRASKA *Reducing reporting burden*

Nebraska replaced manual uploads with automated data sharing aligned closely to the core Ed-Fi Data Standard.

Districts receive faster feedback about data quality and greater visibility into how information affects funding and accountability. The state has reported substantial combined state and district savings, a significant reduction in reporting burden, and a dramatic decrease in the time required to compile certain federal reports.

SOUTH CAROLINA *Building trust through local services*

South Carolina began with a practical district need: student rostering. From that starting point, the Palmetto Data Collaborative expanded to support early childhood information, special education, college and career readiness, and timely student alerts.

The state's experience illustrates an important principle: Data Hubs become sustainable when they provide services that districts value and when those services are developed with districts rather than simply delivered to them.

TENNESSEE *Improving transparency around funding*

Tennessee is using the Ed-Fi Data Standard and community-developed tools to create a clearer, more timely process for average daily membership funding.

District-facing dashboards allow local leaders to see how enrollment information contributes to state calculations and to identify possible issues before funding is finalized. The same infrastructure also supports statewide reporting, dual-enrollment pilots, and research-ready datasets.

TEXAS *Building statewide infrastructure through regional partnership*

Texas is pairing state leadership with regional capacity to build a data infrastructure that serves both statewide reporting and local decision-making. The Texas Education Agency launched the Texas Education Exchange using the Ed-Fi Data Standard, then transitioned ongoing management and expansion to Region 4 Education Service Center.

That partnership builds on the existing role of Education Service Centers as trusted district partners, combining statewide direction with regional expertise and support. The result is a scalable model that helps districts access more timely, usable data while creating a stronger foundation for shared tools and services across the state.

Organize the Work Around a Multi-Phase Journey

A statewide Data Hub is a multi-year transformation, but states should avoid allowing the project to remain in planning or development indefinitely.

A practical implementation can move from initial planning to production over approximately two school years. The work typically progresses through four stages.

Phase One: Planning

The planning phase establishes the project's direction, expertise, governance, and communications.

The state should begin by identifying the outcomes it wants to achieve. Initial goals may include modernizing a high-burden reporting collection, improving funding calculations, reducing attendance reporting delays, or supporting a specific district-facing service.

During this phase, the state should:

- Secure experienced Ed-Fi Data Standard implementation support
- Align agency program, data, technology, and leadership teams
- Select initial reporting targets and local use cases
- Identify potential Data Hub operators or regional partners
- Establish a preliminary budget and sustainability model
- Communicate the vision and timeline to districts and vendors
- Recruit a small group of pilot districts
- Create a central website or portal for specifications, documentation, timelines, and support resources

States should also begin engaging with peers through the Ed-Fi SEA community. Other agencies can provide examples of procurement language, governance models, vendor communications, technical architecture, and change-management strategies.

PRO TIP — Engage Experienced Implementation Support

A Managed Service Provider or consultant experienced with the Ed-Fi Data Standard and Technology can accelerate progress and reduce avoidable mistakes. A provider can support hosting, configuration, deployment, API management, vendor sandboxes, performance testing, troubleshooting, and Data Standard upgrades. You can find a list of Certified Partners and Badged Partners on the Technology Partners page of our website.

The state should retain responsibility for policy outcomes, reporting scope, agency decisions, and relationships with districts. States with an existing technology partner can ask that provider to subcontract with an Ed-Fi Badged Partner rather than attempting the work without specialized expertise.

Phase Two: Pilot

The purpose of the pilot is to begin receiving live data from a manageable number of districts and vendors.

A pilot should generally include approximately five to ten districts. The group should represent a useful mix of size, geography, technical capacity, and student information system vendors.

The objective is not to prove that every requirement is complete. It is to help the state, districts, vendors, and implementation partners learn how the system behaves with real information.

During the pilot, states should:

- Provide vendors with API sandboxes and technical documentation
- Ask vendors to enable the core Ed-Fi Data Standard for submissions
- Establish recurring vendor support calls
- Build or update district-facing submission and error interfaces
- Conduct a use-case data gap analysis
- Resolve only the gaps that are essential to the intended outcome
- Begin updating validation systems and warehouse pipelines
- Publish vendor readiness information
- Recruit districts for the parallel year
- Develop a plan for scaling district support

PRO TIP — Create Resolution Task Forces

API-based integrations involve several connected systems. When an error occurs, the cause may be vendor software, district configuration, state validation logic, or the API environment itself. Traditional ticket-based support can lead to delays and finger-pointing. A resolution task force brings the relevant participants together to diagnose issues directly. Meeting regularly with one vendor and a small group of its district customers allows teams to identify recurring issues, improve documentation, and resolve problems more quickly.

Phase Three: Parallel Operations

During the parallel phase, the state expands participation while running the modernized system alongside its existing reporting process.

A state may begin with 20-30% of districts, or a larger group when readiness allows. The purpose is to test technical scale, support capacity, data accuracy, vendor readiness, and agency operations before the legacy collection is retired.

The state should compare results from the old and new systems throughout the year. Differences should be investigated through a structured process rather than assumed to be flaws in the new system.

This phase should include:

- Regular comparisons of legacy and API-based data submissions
- Continued development of dependent state systems
- Updates to district administrative portals
- Ongoing vendor resolution meetings
- Training for district staff
- Publication of final production specifications
- Clear deadlines for vendor and district readiness
- Internal reporting on system performance and data quality

PRO TIP — Run District Data Bootcamps

District data bootcamps can help support the expanded group. These sessions bring together district users, vendors, and state staff to review submission reports, understand error messages, resolve configuration problems, and prepare local teams for production.

Phase Four: Production and Continuous Improvement

The production milestone allows the state to retire its legacy process and make the API-based system the official source for reporting. This is a major achievement, but it is not the end of the Data Hub journey.

Once the foundational infrastructure is operating reliably, the state and its partners can add new services and data domains. Possibilities include:

- Attendance alerts
- Student transfer records
- Assessment integration
- College and career readiness
- Special education services
- Early childhood information
- Finance and human resources
- Career and technical education
- Research-ready datasets
- Secure access to shared analytics tools

PRO TIP — Plan for Continuous Improvement

States should establish an annual cycle for reviewing specifications, communicating changes, assessing vendor readiness, and prioritizing new services.

Principles for a Successful Statewide Data Hub

Although every state has a different governance structure and technology environment, successful efforts tend to share several principles.

- ✓ **Begin with a problem worth solving:** Define the student, educator, district, or state outcome before beginning a modernization effort.
- ✓ **Create value for districts early:** A practical local use case can build support for the broader modernization effort.
- ✓ **Stay close to the core Ed-Fi Data Standard:** Extend only when a meaningful policy or program requirement cannot be met through the shared model.
- ✓ **Use live data to accelerate learning:** A focused pilot reveals more than a prolonged design process built around hypothetical conditions.
- ✓ **Engage vendors as implementation partners:** Provide stable requirements, realistic timelines, technical resources, and direct opportunities to resolve issues.
- ✓ **Make data visible to districts:** Districts should understand what the state has received, how it will be used, and what needs attention.
- ✓ **Invest in change management:** A Data Hub changes workflows, roles, communication patterns, and expectations—not just technology.
- ✓ **Build for shared use:** Infrastructure becomes more useful as it supports additional services, applications, and policy priorities.

From Data Collection to Shared Statewide Infrastructure

For decades, state education data systems have been organized around the collection of information for reporting and compliance. That work remains necessary, but it does not have to be the limit of what statewide education data can accomplish.

A statewide Data Hub creates a foundation through which information can move more securely, consistently, and efficiently. It can reduce the reporting burden placed on districts, improve the quality and timeliness of state information, and provide applications that help educators respond to student needs.

Replacing files with APIs is only the beginning.

Shared data infrastructure gives districts, educators, and state leaders better information to make faster decisions and improve student outcomes.

Ready to Explore a Statewide Data Hub?

The Ed-Fi Alliance can help state leaders assess implementation models, identify initial use cases, connect with peer states, review procurement language, and engage experienced implementation partners.

**Explore additional state
implementation resources**

[SEA Technical Playbook](#)

**Connect with the Ed-Fi Alliance
State Solutions Team**

ed-fi.org/join-the-community