

Forum Guide to Data Governance




Forum Guide to Data Governance



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Data Governance



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National Cooperative Education Statistics System

The National Center for Education Statistics (NCES) established the National Cooperative Education Statistics System (Cooperative System) to assist in producing and maintaining comparable and uniform information and data on early childhood, elementary, and secondary education. These data are intended to be useful for policymaking at the federal, state, and local levels.

The National Forum on Education Statistics (Forum) is an entity of the Cooperative System and, among its other activities, proposes principles of good practice to assist state and local education agencies in meeting this purpose. The Cooperative System and the Forum are supported in these endeavors by resources from NCES.

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June 2020

This publication and other publications of the National Forum on Education Statistics may be found at the websites listed below.

The NCES Home Page address is <http://nces.ed.gov>

The NCES Publications and Products address is <http://nces.ed.gov/pubsearch>

The Forum Home Page address is <http://nces.ed.gov/forum>

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Foreword

The National Forum on Education Statistics (Forum) is pleased to present the *Forum Guide to Data Governance*. The purpose of this resource is to highlight how data governance programs benefit education agencies and provide timely and useful best practices, examples, and resources for agencies implementing or updating their data governance programs.

Publication Objectives

This resource is intended to address the needs of federal, state, and local agencies related to

- the management, collection, use, and communication of education data;
- the development of effective and clearly defined data systems and policies to handle the complexity and necessary protection of data; and
- the continuous monitoring and decisionmaking necessary in a regularly shifting data landscape.

Intended Audience

This resource is intended for education agency leadership and staff who work with, manage, and communicate data at all levels, and recognizes that when data governance programs are designed with both high-quality data and data security in mind, all involved with the data process will benefit from clear, accessible information. It is intended to complement other recent resources on data governance and provides links to several documents from the Forum and other groups within the U.S. Department of Education (ED).

Organization of This Resource

This resource includes the following chapters and appendices:

- Chapter 1 explains the purpose of the document and provides foundational information about data governance.
- Chapter 2 discusses the practices, data structures, and essential elements needed in an effective data governance program.
- Chapter 3 discusses how data governance programs can be designed to meet privacy and security requirements while also meeting the need for data accessibility and sharing.
- Chapter 4 discusses how agencies recognize and respond to changing data governance needs.
- Chapter 5 provides case studies from states and districts that highlight the challenges, successes, and lessons learned by these education agencies in their data governance efforts.
- Additional resources include a glossary of essential terms, information from state education agencies (SEAs), related resources, and a list of relevant Forum guides.

National Forum on Education Statistics

The work of the National Forum on Education Statistics (Forum) is a key aspect of the National Cooperative Education Statistics System (Cooperative System). The Cooperative System was established to produce and maintain, with the cooperation of the states, comparable and uniform education information and data that are useful for policymaking at the federal, state, and local levels. To assist in meeting this goal, the National Center for Education Statistics (NCES) within the Institute of Education Sciences (IES)—a part of the U.S. Department of Education (ED)—established the Forum to improve the collection, reporting, and use of elementary and secondary education statistics. The Forum includes approximately 120 representatives from state and local education agencies, the federal government, and other organizations with an interest in education data. The Forum deals with issues in education data policy, sponsors innovations in data collection and reporting, and provides technical assistance to improve state and local data systems.

Development of Forum Products

Members of the Forum establish working groups to develop guides in data-related areas of interest to federal, state, and local education agencies. They are assisted in this work by NCES, but the content comes from the collective experience of working group members who review all products iteratively throughout the development process. After the working group completes the content and reviews a document a final time, publications are subject to examination by members of the Forum standing committee that sponsors the project. Finally, Forum members review and formally vote to approve all documents prior to publication. NCES provides final review and approval prior to online publication. The information and opinions published in Forum products do not necessarily represent the policies or views of ED, IES, or NCES. Readers may modify, customize, or reproduce any or all parts of this document.

Working Group Members

This online publication was developed through the National Cooperative Education Statistics System and funded by the National Center for Education Statistics (NCES) within the Institute of Education Sciences (IES)—a part of the U.S. Department of Education (ED). The Data Governance Working Group of the National Forum on Education Statistics is responsible for the content.

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Chapter 1:

Introduction to Data Governance

Data governance refers to a formal and comprehensive set of policies and practices designed to ensure the effective management of data within an organization—encouraging robust data security, definition, collection, access, quality, and disposal. This chapter provides an overview of data governance and its importance in education agencies.

Data governance is crucial to the effective and safe management, use, analysis, and communication of education data. It includes:

- establishing responsibility for individual data elements, datasets, and databases;
- continuously improving data systems through the development and enforcement of policies, roles, responsibilities, and procedures^{1,2};
- clarifying procedures and best practices for both internal and external access to data: that is, how data will be communicated between individuals within the agency, but also how data may be shared with researchers, other governmental agencies, policymakers, or outside stakeholders; and
- specifying rules and expectations related to data privacy and security³.

Importantly, governance is not primarily about technology or the tools and systems used to collect and store data. Rather, it is predominantly about the people and processes tied to maintaining safe and effective data management, use, analysis and communication.

In Washington state, establishing a robust data governance program has led to increased collaboration among agencies, as teams communicate about how to best answer questions and solve problems.

1 National Forum on Education Statistics. (2012). *Forum Guide to Supporting Data Access for Researchers: A State Education Agency Perspective*. (p. 3). Retrieved March 25, 2020 from https://nces.ed.gov/forum/pub_2012809.asp.

2 National Forum on Education Statistics. (2013). *Forum Guide to the Teacher-Student Data Link: A Technical Implementation Resource*. (p. vii). Retrieved March 25, 2020 from https://nces.ed.gov/forum/pub_2013802.asp.

3 The U.S. Department of Education's Privacy Technical Assistance Center also provides information on data privacy and security at <https://studentprivacy.ed.gov/>. These concepts are further discussed in Chapter 3 of this resource.

Why is Data Governance Important?


A clearly defined data governance program allows education agencies to communicate and make decisions about the information that is housed within and shared across their systems. Rapid growth in the amount of data collected by states and districts, as well as the continually increasing complexity of data systems, mean that data governance policies need to be regularly assessed and revised.

An effective data governance program

- provides structures and processes that facilitate collaboration among different individuals and groups, allowing them to work together to answer questions, solve problems, and ensure quality data;
- helps to ensure that data collection processes follow all federal, state, and local laws and regulations about which data can be collected and how data should be destroyed or maintained;
- increases collective knowledge by helping all parties understand why certain data are collected and why collections are conducted in particular ways;
- assists with the construction of meaningful data dictionaries that describe what a “dataset” means, and what it can and cannot be used for;
- provides a comprehensive communication strategy around data that sees all parties as responsible for the accuracy and quality of data and informs stakeholders of the work of specific committees or teams, their associated procedures, their decisions, and the impacts of those decisions;
- defines protocols and workflows for decisionmaking around data management and use, including adding, modifying, and ending collections;
- helps to ensure business continuity and sustainability by keeping processes and procedures in place through staff turnover;
- includes agency leadership to ensure their buy-in around the importance of high-quality data, meaningful data use, and their decisionmaking authority;
- helps agencies proactively plan for change, handling potential issues before they become problems;
- provides clear data definitions and business rules that can be consistent and well-communicated within and between education agencies and different agency levels, from schools, to local education agencies (LEAs), to state education agencies (SEAs), and to the federal level;
- considers how decisions informed by the data may influence stakeholders such as teachers, students, parents, local education leaders, and communities;
- offers transparency about data needs, uses, and procedures; and
- supports data privacy and security.

“Data governance is a vehicle for exploring other mechanisms of integrating highly valued, but inaccessible information and a transparent forum for implementing the use.”

SEA Longitudinal Data System Lead




Effective programs also allow agencies to avoid many of the risks involved with inconsistent or unclear data governance. Clearly defined, robust data governance can minimize potential problems by allowing agencies to

- provide accountability and transparency for data decisions;
- clarify roles in the governance process;
- avoid duplication of effort by having established, replicable, scalable processes;
- minimize inefficiencies, such as continuing to collect data that are no longer needed, or changing rules to meet a new set of needs while causing problems for other stakeholders;
- retire siloed or outdated data collections that are redundant and may waste time and money;
- avoid poor data decisions or planning that erode public trust in the agency's ability to securely collect and maintain data, or to accurately report on data;
- implement a culture of data use that values data as a tool to improve programs and policies;
- promote data collection as more than a compliance activity;
- restrict potential fraud or theft (through data manipulation) within the agency;
- offer sufficient training for staff responsible for collecting data;
- keep staff from creating individual processes to suit their own needs, which could lead to confusion or duplication of other employees' work;
- clearly identify the official source for particular data, and thus avoid data duplication or inaccuracy;
- maintain data consistency by defining clear business rules (for example, not having the same school tracked by its full name versus an abbreviation in different databases);
- eliminate data misinterpretation and misrepresentation, either within or outside the agency; and
- provide clear documentation of roles, policies and practices that serve as a foundation during turnover or succession planning.

What are the Benefits of Data Governance?

Having a strong and clearly defined data governance program within an education agency is crucial to ensuring that processes and procedures are sustainable over time. As individuals may come and go from an agency, understanding of practices and responsibilities needs to continue without gaps. Strong data governance allows institutional knowledge to be maintained across staffing or leadership shifts and helps to keep data safe as situational factors change. Additionally, data governance increases an agency's data quality by helping to ensure that data are carefully and thoughtfully collected, verified, analyzed, used, and communicated.

Ultimately, data governance goes beyond simply defining how data management, data use, and communication will work; it is also key to engaging myriad stakeholders across (and beyond) the agency. An effective data governance program brings together the business side of an agency (that is, the people who create and use data) with the technology and leadership sides of the



agency, as well as with outside parties such as policymakers. It solidifies the roles and duties of staff who are responsible and accountable for data and keeps people from various parts of the agency “at the table” for discussions of data management and process improvement. The more stakeholders across the agency understand that they, too, are responsible for data, the more all parts of the team will unite to create a culture that ensures high-quality, useful data. The data collection and management process can be improved if program staff and subject matter experts see that they provide the first step in the process of ensuring accurate, relevant data. To move toward this perspective on data, organizations must develop a plan to engage all parties as part of the overall data governance program.


How Data Governance Supports Data Collection and Reporting Processes

It can be useful to remember that data governance is a foundational part of the larger data collection and reporting process. Each education agency must consider its particular data needs, stakeholders, and capabilities, in order to design and maintain a data governance program that is sustainable and responsive to evolving needs and requirements.

To begin, a clearly defined management process helps ensure successful implementation of data collection activities, including making decisions, meeting specified needs, minimizing cost and burden, and ensuring cooperation and support for data collection activities. Components of good management of data collection and reporting include:

- **Design:** the process of formulating the questions to be answered or needs to be met, and developing a plan for conducting the collection, processing, analysis, and reporting of data, which includes defining how, when, and by whom data will be submitted or collected.
- **Data Collection:** a clear process to collect data that ensures collection is efficient and effective, that primary sources of data are established so as to avoid duplication, that collectors have the required skills and knowledge, that collection is carried out ethically, that collection activities are minimally intrusive, that data are representative of the population, and that collected data are accurate and complete.
- **Data Preparation and Processing:** the process for transforming raw data into a format that can be analyzed and used. This includes providing objectives for data processing systems, as well as computer programs or applications that adhere to systems design and specified conditions; ensuring data are properly converted and prepared for processing and analysis; ensuring that data are easily accessible to authorized persons; ensuring that data can be accurately transferred to other systems; and ensuring that all data processing activities are appropriately documented.

In Washington, prior to any new data collection, education leaders and data experts work together to clearly define the needs and purposes of the collection, discuss limitations, and at times even determine the duration of the collection.

- 
- **Data Analysis:** the process by which information drawn from the prior three steps (design, data collection, and data preparation and processing) is brought together and used to answer questions.
 - **Reporting and Dissemination of Data:** the process for ensuring that data reports are prepared, documented, reviewed, and shared in a manner that enhances their accuracy, credibility, and usefulness, while also ensuring privacy and security best practices are maintained.

Chapter 2:

Effective Practices for Creating and Implementing a Data Governance Program

This chapter discusses the practices, structures, and essential elements needed in an effective data governance program. It highlights ways of determining the needs of a particular agency, considering how that agency communicates data with other agencies, and identifying varied approaches for structuring and implementing data governance. It offers examples of how data governance programs were created in state education agencies (SEAs) and local education agencies (LEAs), explains how the choices made influenced data collection efforts, and provides links to brief descriptions of the numerous resources available to assist agencies as they implement data governance programs.

To be effective and sustainable, governance programs must be aligned with and responsive to the needs of a given educational agency. Data strategies, analyses, and communication may vary in light of organizational needs, agency size, policy or administrative considerations, relationships with stakeholders, and many other factors. Within an educational agency, creating and maintaining a governance program may involve a number of steps, and schools, LEAs, and SEAs may implement programs in different ways. The creation and structure may be top-down or bottom-up. Program structures may be implemented as formal committees or assignments, or they may grow out of other committees or roles organically. Because of these variations, the ways in which an agency creates its governance program and facilitates the issues discussed in this chapter may vary as well.

Create and Maintain Communication Structures

A central piece of a strong data governance program is a clearly defined communication structure. All staff who work with data must know which information they are expected to communicate, to whom, and when. These types of structures may vary by the size and nature

Not communicating clearly about data can cause far-reaching confusion and complications. In one case, a state funding initiative required districts to set performance targets on many of the same metrics that the state was using for school accountability reporting. However, the state initiative calculated the metrics using a different set of business rules, and the differences in these business rules were not clearly communicated. This lapse in communication caused frustration for LEAs, and meant that they were required to work toward two targets on a single indicator, using different sets of longitudinal data. Better internal communication at the state level, supported by a stronger data governance system, could have resulted in more coherence between the two reports, and clearer communications to stakeholders.

of an agency. In a larger agency, such as a large urban LEA or a high population SEA, this communication may be achieved by having

- established roles and responsibilities for varied parts of the data collection and management process;
- regular professional development and support that keeps staff up-to-date on new information; and
- expectations for them within the data process, particularly as data needs grow or change.

In a small or rural LEA, or a more sparsely populated SEA that has fewer employees, structures may not be as specific or formal and could involve more crossover of roles and duties. Regardless of the size and nature of the agency, creating and maintaining a communication structure that is well understood and supported by all involved is key to the successful collection and application of high-quality data.

It is critical to support and encourage communication and collaboration about data, both within and among education agencies. Consistent discussion of needs and expectations ensures that schools, LEAs, SEAs, and federal agencies share a common understanding regarding data definitions, data rules, and the purpose of the data collection. These agencies are then better able to collect, transfer, maintain, use, and share high-quality data.

The Kentucky Department of Education utilizes its data governance committee's data collection change process to ensure (1) new collections are necessary and not redundant, and (2) data collection changes do not negatively impact another area inadvertently. This includes reviewing requests and associated regulatory requirements and voting to approve or reject each request. Depending on the complexity of the request, this can be done through email or be discussed in person during a data governance meeting. Once a change is confirmed, data stewards are responsible for communicating change requests to LEAs for awareness of data collection needs.

Because data cycles, needs, and uses of education agencies can differ, clear communication and strong knowledge about governance can help avoid misunderstandings or complications related to the data. For example, some locations have had issues when the SEA and LEAs have different purposes for enrollment data. An LEA may need to have the same student enrolled at

In Vermont, during the initial implementation of a new collection method, many LEA reporting managers struggled to use the new technology for making some of their largest required data submissions. The state created a centralized group email box for all technical assistance requests, and the data collection specialists monitoring that email box routed questions to the appropriate data stewards internally to provide the targeted technical assistance needed. Further, the state included the LEA superintendents in the communication loop to help ensure visibility and clarify roles and responsibilities. This included messaging about upcoming deadlines, progress on particular data submissions, and important timelines for upcoming work.

two schools if she is a middle schooler taking a high school algebra course, but the state's data rules only allow enrollment at a single location. Similarly, SEAs and LEAs may differ in how they define absence: the LEA may consider a student present even if they miss their math class for a field trip, but the SEA may want to only count actual hours in the classroom in order to calculate accountability data. In cases like these, the different uses of data by the LEA and SEA may lead to inconsistency or conflict. Established, reciprocal communication structures can help to mitigate these types of challenges. In particular, states with small

LEAs could ensure that they include these LEAs in their data governance structures and communication, because knowledge may not exist in all sectors about the true operational impacts of data decisions. Keeping everyone involved in these conversations and plans can help to avoid not only confusion but also creation of undue burdens on LEAs or schools.

In some cases, LEA data governance is nested within that of the SEA to ensure consistency and smooth functioning. Clear communication structures are key in these situations as well. The roles and expectations for the individuals in each group must be clearly defined to minimize confusion and potential redundancies. It is important for an SEA to communicate with an LEA early in the planning process as data collections are added or changed. Just as an SEA must modify its processes, LEAs have to understand the needs and ensure their collections comply. Additionally, both the SEA and LEA should consider the technical and human resource capacity of the LEA to collect the data, considering issues such as the cost to adjust the information system, whether the LEA has access to systems at the school level, and accurate estimates of burden hours. Developing a clear understanding through early communication of expectations can help ensure consistency and quality of data. This kind of communication can increase trust between the agencies as well, as it helps LEAs understand the rationale behind proposed changes, while also helping SEAs understand the constraints within which the LEAs may be operating.

Communication in One Small LEA

“It is extremely important that the Information Technology (IT) Department report to the person responsible for data governance in a small district. Usually in a small district this could be the superintendent, the assistant superintendent, or an executive director. Further, successful data governance in a small LEA will most likely occur when cross department collaboration is occurring. For example, the IT Department is placed in a position to collaborate with the curriculum department and Student Information System (SIS) management on weekly basis. The SIS in a small district is typically the primary repository for data and information that is sensitive to personally identifiable information (PII) requirements, and having a communication conduit for the users (curriculum), movers (IT) and storers (SIS) is extremely important to developing good data governance in a small district.”

Associate Superintendent

Identify and Establish Key Roles and Responsibilities

Within the different groups that make up the data governance structure, there are key roles and responsibilities that help ensure effective decisionmaking, issue resolution, and communication, and that are typically responsible for developing and implementing data policies and processes. The diagram below depicts two common structures with defined roles.

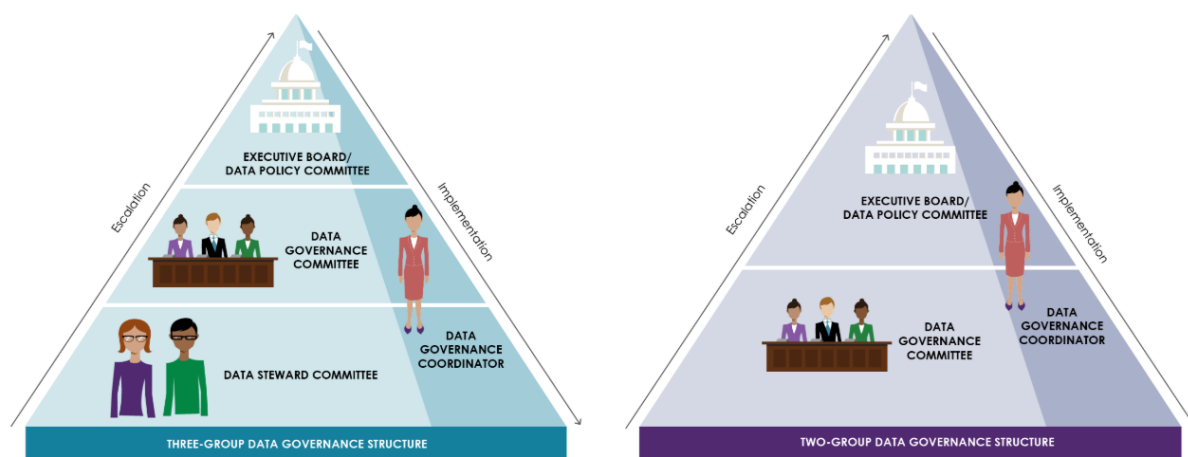


Figure 1. Three-group and two-group data governance structures.


Source: <https://slds.grads360.org/#program/data-governance-structure>

Just as an agency's communication structure will depend on its data needs and uses, so too will its governance groups and structures. Note, for example, that in the diagrams above, one structure contains a data steward committee, while the other does not. There are various levels and groups that agencies may want to consider when determining their ideal structure, and these may also change and adapt over time. Smaller agencies (whether LEAs or SEAs) may not have the staff to fill all of the roles that are defined by larger agencies. Some locations may be able to use existing structures to fill roles: for example, using an LEA superintendent's cabinet meeting to fulfill executive-level data governance functions.

Within all types and sizes of structures, it is important to include users of the data and the data system, to ensure that they play a role in providing feedback and collaborating to ensure that needs are met.

Data Stewards and Data Owners

Data governance programs typically include both data owners and data stewards. Data owners include staff such as program area directors, subject matter experts, or policy staff who have



high-level authority over specific data elements or sets of data, who are accountable for the quality of those data, and knowledgeable on responsible use and value of those data. Data stewards are those individuals within an organization who are responsible for implementing data governance policies and standards and maintaining data quality and security⁴. These staff members do much of the work related to managing data⁵, perform data checks to ensure accuracy, and compile the appropriate data elements to answer questions and fulfill reporting requirements.

While specific hierarchies can be helpful in some cases for accountability, many agencies choose to categorize multiple stakeholders as data stewards rather than owners, in order to keep everyone who works with the data actively engaged in the process of data governance. For example, the U.S. Department of Education (ED) *EDFacts* data collection was designed so that there are multiple stewarding offices comprised of subject matter experts who support data definition, acquisition, review, and data use for a defined set of data. The ED offices that steward *EDFacts* data each have a representative on the *EDFacts* Data Governance Board⁶. This type of perspective helps data stewards see where they and their data are located in the larger picture and encourages all to continue to come back to the table and be integral parts of the process.

Provide Support for Data Governance

Education agencies will have more successful and sustainable data governance programs if stakeholders across the board are able to support both the governance structures and the overall culture of quality data. Because data governance is a collaborative process, it functions best when it is supported by all parts of the agency. Data governance involves deliberative engagement with the rest of the organization that leads to stronger overall understanding about the uses, possibilities, and limitations of data. This understanding can then clear the path for high-quality data collection, effective management, and appropriate distribution and reporting of the data.

Some supports that benefit agencies include

- a formal process to request new data elements and/or changes to a collection;
- formal channels for troubleshooting;
- formal documentation of business rules, calculations and procedures, data definitions and standards, and roles and responsibilities for various stages of a data workflow;
- process for collaborative research and discussion of data issues;
- adequate time and justification for new data collections or changes;
- accurate assessment of burden for submission of required data;

4 Privacy Technical Assistance Center. (2011). *Data Governance and Stewardship*. Revised August 2015. Retrieved March 25, 2020 from https://studentprivacy.ed.gov/sites/default/files/resource_document/file/Data_Governance_and_Stewardship_0.pdf.

5 National Forum on Education Statistics. (2011). *Traveling Through Time: The Forum Guide to Longitudinal Data Systems, Book III: Effectively Managing Data*. Retrieved March 25, 2020 from https://nces.ed.gov/forum/pub_2011805.asp.

6 *EDFacts*. (n.d.) *Stewarding Data: Subject Matter Expertise and Data Governance*. Retrieved March 25, 2020 from <https://www2.ed.gov/about/inits/ed/edfacts/edfacts-data-stewarding-overview.pdf>.

- policy guidance on how data are to be reported;
- consideration of impact to current systems and dependencies;
- systematic analysis to ensure that there is a clear and compelling need for any PII collected;
- clear data suppression rules;
- process for resolving or explaining data reporting inconsistencies;
- cross-agency/departmental understanding and support for new data collections and changes to existing data collections;
- policies that encourage and support quality data collection and/or reporting;
- formalized data sharing policy and procedure for external stakeholders, that include such topics as the creation of formal data requests and development of memoranda of understanding (MOU) or contracts;
- tracking of data reporting (for example, for Family Educational Rights and Privacy Act [FERPA] requirements);
- professional development/training; and
- adherence to privacy and security laws and best practices.

Clarify Data Requirements

Part of a strong data governance program is determining the data requirements that are supportive of and responsive to the particular needs of an agency or location. Agencies should begin with data standards that are specific and understood by all data users. These standards should include the data element categories, data collection schedules, and typical data tasks that are performed and maintained. Agencies should also consider more specific issues, such as the different data needs and collections related to data used for operational purposes versus accountability calculations.

SEAs must collect data to meet federal and state reporting requirements (for example, *EDFacts*), and many of these data come from SISs. Communicating directly with LEAs and SIS vendors can help SEAs meet new requirements for data collection and reporting. Clearly defined and communicated data standards will help with consistency of collection and therefore quality of reporting.

Promote a Culture of Quality Data

A key part of ensuring data accuracy, security, utility, and timeliness is creating a culture in which quality issues are proactively monitored and effectively addressed. Timely and accurate data make it possible for

- teachers to make the right decisions about their students' instructional needs;
- principals to track student and teacher progress, and feel confident that goals are being met or that they are alerted to problems that impede progress;
- district personnel to apportion staff or other resources where and when they are needed most;
- state departments of education to plan and manage effective programs proactively;
- researchers to evaluate the impact of education programs; and

- parents, policymakers, and other stakeholders to access reports to know how resources are making a difference in education.

A culture of quality data includes these key components:

- *Accuracy.* The information must be correct and complete. Data entry procedures and data checks must be reliable to ensure that a report will have the same information regardless of who fills it out.
- *Security.* The confidentiality of student and staff records must be ensured, and data must be safe.
- *Utility.* The data have to provide the right information to answer the question that is asked.
- *Timeliness.* Deadlines are discussed and data are entered in a timely manner, so the data can inform strategic decisionmaking and prompt action.

Forum Guide to Building a Culture of Quality Data

This Forum guide was developed to help schools and LEAs improve the quality of data they collect and to provide processes for developing a “Culture of Quality Data” by focusing on data entry—getting things right at the source. It includes tip sheets for staff in schools and LEAs.

For more information, see https://nces.ed.gov/forum/pub_2005801.asp.

Implement Core Practices for Managing Data Requests

Data governance is important not only for how an agency handles data internally but also how an agency works with other agencies, researchers, and members of the public to use data. Core practices for managing data requests that include detailed policies and procedures can contribute to a robust data sharing process that is understood by all parties. These practices can be customized to best meet the data sharing, management, and security requirements of an education agency. Education agencies may receive many types of data requests, including those from researchers, Freedom of Information Act (FOIA) requests, requests from legislators, and requests from community organizations that partner with schools to provide services to students and families, as well as internal leadership and staff.

- 1. Help Researchers and Other Data Requestors Understand Agency Data and the Data Request Process** By helping individuals better understand data available from the agency and the circumstances in which requests may be approved, SEAs and LEAs greatly improve the likelihood that data will be used and interpreted appropriately within the context of a research plan or other intended data use. When particular data requests require technical and data expertise in order to properly access, use, and manage data (such as research datasets or individual-level files), prospective users should meet any and all training expectations set forth by the education agency—not as a courtesy, but as a requirement to receive access.
- 2. Create Effective Data Request Forms and Procedures for Those Requesting Data** Creating standardized forms and specific procedures for individuals to use when submitting data requests will streamline both the request and evaluation process.

When designed and implemented wisely, data request forms can help requestors accurately identify the data that they are requesting and present the request in a format that concisely, yet comprehensively, describes their vision for research or other data use. The more effective the request form and related steps, the less of a burden there is on agency staff during the evaluation of the request, and the less likelihood of unnecessary delays in the review process.

Kentucky's Department of Education has a clearly defined data request and approval process that requires a specific request form and an MOU for any requests involving PII. Each request is considered on a case-by-case basis, and decisions are based on factors such as the alignment of the research with the department's research plan and availability of staff resources. More information is available at: <https://education.ky.gov/districts/tech/Pages/DataRequests.aspx>

- 3. Review Data Requests Strategically** When reviewing data requests, SEAs and LEAs not only have an opportunity to assess whether the data they have available for requestors will benefit the research or other data use, but also how the proposed use of the data can be harnessed to improve the agency's broader policies and operations (and potentially the larger education world). Data use proposals should reflect the priorities of the agency, align with agency policies, and warrant staff time to fulfill. Not all requests can be ethically or legally fulfilled. Additionally, education agencies have different policies regarding what they can provide. Some may provide only readily available data, and some calculate costs for accessing and compiling requested data.
- 4. Manage and Document the Data Request Process Efficiently** Consistently, transparently, and promptly managing and documenting data requests is best practice. Policies designed to govern data requests, including those for research proposals, should accurately reflect the priorities and interests of the agency, clearly establish expectations for those requesting data, and effectively describe the process of having a data request evaluated. When establishing policies for data use, the agency can address
 - who is eligible to use data accessed through the agency;
 - timelines for data access;
 - fee structures (if any); and
 - expectations for any professional interactions with human research subjects and data confidentiality, security, and destruction.
- 5. Release Data Appropriately** Once a request has been reviewed and approved, any necessary training expectations have been met, and the requestor has certified

In the Metro Nashville (TN) school district, stakeholders bring the data requests they receive to the district's regular data governance meetings, in order to discuss them with the group and ensure that they are not duplicated. A formal process and electronic form are being developed to standardize and streamline the receipt of data requests. The district is also adding a data section to the website, where they will share publicly available data that are commonly requested, such as enrollment data. Currently, these data are housed in the city's Open Data Portal and are updated quarterly.

Requesters are also referred to the state of TN website where publicly downloadable data are available.

adherence to all requirements (when applicable), the data are nearly ready to be released. Providing data (and relevant metadata) in a format and medium that have been explained to the requestor is best practice. In order to protect data from potential misuse, technical and statistical tools can be used to help protect the privacy and confidentiality of education data even after release. Suppression, masking, de-identification, anonymization, or other methods of protection can have significant ramifications on the analysis and interpretation of the data. Agencies can help to ensure that requestors understand why and how the released data have been modified.

Beyond the steps noted above, data requests from researchers and partner organizations require additional attention and diligence for monitoring and use. The steps below reflect these needs, and should be considered by agencies that have these types of requests.

6. Monitor Researchers' and Partners' Data Use Because an education agency's responsibility to ensure proper data use does not end when data are released to a researcher or other partnering entity, an SEA or LEA should commit to monitoring the requestor's management and use of the data, especially when personally identifiable data have been shared. Monitoring encourages clear and ongoing communication between the SEA/LEA and requestor. Carefully designing and monitoring contracts and MOUs with users is best practice, especially vendors who may have requested data. Agencies must be aware of what vendors want to do with the data, and MOUs should include requirements for data destruction. Best practices suggest that agencies require active affirmation—that is, users are not simply told they have to destroy the data but are required to send data destruction assurances under legally binding agreements.

Minnesota's Statewide Longitudinal Education Data System (SLEDS) team has received several requests from researchers based at for-profit entities whose proposed research could result in the development of proprietary products. The ensuing review of those requests identified that the research proposed met all of the established criteria for approval. However, SLEDS Governance required all resulting research to be available publicly in order to ensure that the research benefits the state. The team drafted a policy regarding research with commercial implications that is set to be reviewed and approved as an amendment to the SLEDS Data Access and Management Policy.

7. Use Research Findings and Other Useful Information in the Agency If the agency is thoughtful about specifying the expected benefits of the proposed research or other data use during request negotiations, and integrates those expectations into subsequent agreements, then a post project follow-up process is appropriate. In some cases, research results or other data artifacts can be adapted or adopted by an agency for policy development, program review and improvement, or the resolution of technical and operational issues.

8. Maintain Records. Keep a record of the request and the response so the data or specific report can be used in the future to efficiently fulfill similar requests that may be received later, and so that there is an evidentiary trail as to what information has

been shared (and with whom). FERPA has specific requirements for recordkeeping about requests and disclosures (see https://studentprivacy.ed.gov/node/548/#0.1se34.1.99_132).

For more information on core practices specifically related to research requests, see the *Forum Guide to Supporting Data Access for Researchers: A State Education Agency Perspective* (https://nces.ed.gov/forum/pub_2012809.asp) and the *Forum Guide to Supporting Data Access for Researchers: A Local Education Agency Perspective* (https://nces.ed.gov/forum/pub_2014801.asp). (This list adapted and updated from these sources.)

The Importance of Metadata

Metadata are defined as “data about data.” A more technically precise definition is “structured information that describes, explains, locates, or otherwise makes it easier to retrieve, use, or manage information.” In other words, metadata provide the context in which to interpret data and information. While using up-to-date data in a presentation and properly documenting technical specifications have always been important, the concept of metadata, or data about data, has never before been so relevant to educators. In this era of data-driven decisionmaking, education organizations and their constituencies place tremendous value on using data to inform instructional and management practices. With more data to organize, access, and understand than ever before, a metadata system is an essential tool for accomplishing these vital information management tasks.

For more information, see the *Forum Guide to Metadata: The Meaning Behind Education Data* at https://nces.ed.gov/pubs2009/metadata/ch1_overview.asp

Address Common Challenges

Education agencies can experience challenges when implementing and maintaining their data governance programs. Though each agency has unique needs and contexts, some of these challenges are similar across locations. For example, common challenges include:

Data collection or use requirements that do not align with the realities of data at the local level. If individuals within the data communication structure who are defining business rules do not engage stakeholders who understand the data, problems can occur. These issues can also come from policymakers who may not understand the purpose of data or the costs of collecting data.

Unfortunately, agency leaders and policymakers may incorrectly assume that LEA data can be used to answer policy questions even when the data were not collected for that specific purpose. For example, SEA staff may assume that because all LEAs within the state have data on the number of math courses a student has completed, the SEA can publish reports comparing math course completion for a single cohort of students across the state. However, if some LEAs assign credit only at the end of a year-long course, while others assign credit based on competency completion, and still others assign semester credit, the SEA will not be able

to publish a meaningful comparison. Agencies have developed several best practices to help ensure that agency leaders and policymakers understand the limitations of local data. Some states have designated a staff member to act as a liaison to the legislature and communicate with policymakers on the types of analysis that the data can and cannot support. Many agencies also have adopted standards, such as those provided by the Common Education Data Standards (CEDS) (<https://ceds.ed.gov/>) to clarify what data elements are collected and document their definition. Often, data standards are documented in data dictionaries, which also provide metadata—contextual information about data—for each element collected.

Collection expectations that do not consider how the data will actually be used, leading to misalignment between available data and data needs or reporting requirements. Agencies can avoid these misalignments by starting with the end in mind, and by considering differences in use: operational use at the local level, accountability and evaluation use at the state level, and research or national aggregation for accountability (for example, Office for Civil Rights) use at the federal level. SEAs can help ensure understanding of use by engaging LEAs in applicable data governance discussions. For example, vetting data that will appear on the annual School Report Card through LEAs helps to ensure quality and understanding of the reporting. This vetting may include processes such as certified collections, reviews, and appeal windows prior to accountability publications.

It is equally important that agency leaders who work with data, but who are not directly responsible for collecting data, understand that they may be limited in making changes to data collections, whether in collecting additional data or modifying business rules and logic for an existing data element. For example, before one SEA could collect “military-connected student” data for federal reporting requirements, each LEA in the state first had to start collecting these data at the local level. In other cases, researchers using LEA data may want specific information to answer research questions. However, if the LEA does not collect those data for the purposes of serving students, they may be unable to accommodate the researchers’ request.

Several states require that all proposals for new data collections be placed in a public review and comment status for a certain period of time before data can be collected. This process curtails the risk of snap decisions being made about collecting or reporting new data and helps ensure a thorough and deliberate process for those kinds of data changes.

Data collections that change over time. While many agencies carefully consider data governance when planning a new data collection, data

Using CEDS for Data Governance

The Common Education Data Standards (CEDS) initiative is a national collaborative effort to develop voluntary, common data standards for a key set of education data elements to streamline the exchange, comparison and understanding of data within and across P-20W institutions and sectors. The *Using CEDS: Data Governance* brief highlights how CEDS can be used to support data governance efforts within an organization or across organizations as part of a P-20W initiative.

For more information, see <https://ceds.ed.gov/publications.aspx>.

governance is also critical when changing or modifying a collection. For example, one SEA began collecting information on student course-taking for a project that linked student data with teacher information. The agency continued to collect the data even after the original project was completed and instead began using the data for research into graduation. However, without a proper data governance program in place to oversee the change, the SEA never updated the data collection instructions, data elements, or collection methods to reflect the new purpose of the collection. Since the data were originally collected for the purposes of linking students with teachers, they were missing crucial information necessary for graduation research. Collections can also change over time due to changes in legislation, and staff who do not regularly work with the collection may not be aware of these differences when using the data. Similarly, changes or additions to technology can alter or create new data, which were not included in earlier governance requirements and may be misunderstood or used inappropriately.

Data being used for purposes for which they were not intended. Even with structured governance, data can be misused and misapplied when they are accessed by stakeholders not directly within the data governance communication structure. For example, one LEA published reports that highlighted gains in student reading achievement. Staff at an afterschool program used the public reports in their promotional materials with the claim that their program was the source of the increase in achievement. However, without further data analysis, there was no way to demonstrate that the afterschool program was the source of the improvements. Rather, there


Data Governance in Small and Large Districts

Both large and small education agencies implement data governance programs, but there are often notable differences in the structure of the programs and the challenges they face. For example, while SEAs and large LEAs are often concerned with using data governance to promote communication and adopt standards across program areas, in a small LEA there may be only one individual who is the data steward for all program areas.

Small LEAs may find that they benefit from developing relationships with other small LEAs or from working with regional groups, such as Regional Educational Laboratories (RELs). Often, these collaborations can help LEAs share resources and access expertise to increase their capacity for data governance.

Delaware Data Forum

In an effort to improve education data governance in the state of Delaware, SEA and LEA representatives joined together to form the Delaware Education Data Forum (herein referenced as the Delaware Forum). These individuals discussed the need for improvements to the Delaware Department of Education's process for aggregating data that included the LEA perspective. The Delaware Forum is modeled on the National Forum on Education Statistics, and is designed to promote collaboration between SEA and LEA participants. It is co-chaired by an SEA and LEA representative to ensure equal representation between SEAs and LEAs on agenda-setting and decisionmaking. Collaboration between the SEA and LEAs and a focus on data quality at the student level have been key to the Delaware Forum's effectiveness. Thus far, the Delaware Forum has collaborated on reviewing three large, statewide data sets, including accountability data and college and career-ready data. The LEA representatives' review of these data has increased confidence in the data's quality and accuracy and minimized the number of data errors identified after public release.



were many factors, including a new reading curriculum, additional tutoring services, and a new school breakfast program which may (or may not) have contributed. Clearer communication about data definitions, appropriate data application and use, and requirements for sharing data publicly could minimize this type of inaccuracy. Additionally, training and data handling protocols need to be constantly reinforced with staff who are using data. These efforts are supported by emphasizing the overall culture of quality data within the organization.

Agency staff lacking an understanding of why data governance is important to them. If an agency does not communicate the importance of governance to all staff members and different offices, it can be very difficult to engage various individuals in the data governance process. Simply put, if they do not see how governance relates to their work and can improve their day-to-day practice or tasks, they may not be convinced of its relevance to their position. Communicating clearly about how a robust governance plan can streamline processes, eliminate redundancies, target funding effectively, and improve access to resources can significantly help build support for data governance. In one large metropolitan LEA, for example, the data team was able to bring more staff on board in support of the data governance program when it was made clear to them that collaborating with colleagues in the districts' regular data meetings was leading to solutions to many of their problems.

Maintaining consistency through staff turnover. Without a clearly defined data governance program, education agencies can struggle significantly when key staff leave and remaining staff do not have requisite knowledge of key data processes and requirements. This is especially problematic if an agency is small or understaffed. When a key leader left one SEA, the team found that much of the success of their data governance had been based upon his leadership and relationships with various offices, and they struggled to maintain their necessary data processes in his absence. Agencies must have clearly defined roles, tasks, and expectations that can be sustained through personnel changes or turnover.

Chapter 3:

Effective Data Sharing, Data Security, and Privacy

Data security and privacy are critical as more data are collected, shared, and used for varied purposes. This chapter discusses how data governance programs can be designed to meet privacy and security requirements while also meeting the need for data accessibility and sharing.

The unfortunate reality is that any information transmission is a security risk. Agencies need to be aware of this and have steps in place to mitigate risk as much as is possible. Additionally, education agencies across the country vary significantly in their means for sharing information. Some are able to use sophisticated electronic transfers that are more protected, but many locations still need to fax, email, or physically mail student information. All of these options carry risks, but by outlining the policies, standard procedures, responsibilities, and controls related to data, a strong data governance program can help to ensure the security and privacy of education data⁷.

Data security and privacy considerations should be integrated into all levels of the data governance program. These issues should be at the forefront for all staff, not just those specifically tasked with handling them. For example, many education agencies require all staff members who deal with data at any level to pass courses on data security, demonstrating that they understand common risks and how to minimize or avoid them. Without such courses, many employees would not know that the majority of security and privacy issues are due to user errors, not technological failings. Some agencies have also used their data governance structures to create and disseminate “layman’s” level information about data security. By including the agency’s chief privacy officer in data governance groups, many agencies have increased communication about data privacy and security in organic ways through different teams, roles, and programs throughout the organization.

Best practices for addressing data privacy and security within a data governance program include the following:

- Provide specific training, not just on privacy rules but on established processes such as how to report a data breach.
- Plan for and implement physical, technological, and administrative controls.

⁷ National Forum on Education Statistics. (2016). *Forum Guide to Education Data Privacy*. (p. 11). Retrieved March 25, 2020 from https://nces.ed.gov/forum/pub_2016096.asp.

- Have an annual Acceptable Use Policy (AUP) or Responsible Use (RU) training and review. Ensure that this is a specific discussion, not just a perfunctory sign-off.
- Keep an inventory of all places where data reside.
- Have people specifically assigned to maintain all data sharing agreements.
- Define the life span of a collection. Do not continue to collect data that are no longer relevant or used for a specific purpose.
- Explain to users at different levels how data classification is used to promote proper controls for safeguarding the confidentiality of data. For instance, be sure to explain
 - the classification assigned and the related controls applied are dependent on the sensitivity of the data;
 - data are classified according to the most sensitive detail they include; and
 - regardless of classification, the integrity and accuracy of all classifications of data are protected.
- Clarify the different levels of physical and electronic access and security and ensure that all staff understand that access to personally identifiable information (PII)/sensitive information, whether hard copy or electronic, is restricted only to appropriately authorized individuals.
- Have clear policies and technological infrastructure necessary to support transmission security (the mechanisms in place to guard against unauthorized access to data that are transmitted over a communications network, including wireless networks).
- Ensure that users understand why electronic mass data transfers (downloading, uploading, or transferring PII, confidential information, and internal information between systems) are strictly controlled by role-based access control and using secure transport encryption.
- Ensure that requests for information for research or any other purposes that include PII are done in accordance with policy and approved by the data governance committee or other designated body (for example, the Research Review Committee).
- Create standard language on privacy and security requirements that can be included in all data sharing agreements with third party vendors providing services for storage,

A standard template can be helpful for data requests that necessitate a data sharing agreement. The Family Educational Rights and Privacy Act (FERPA) includes specifics on what must be included in agreements for the different exceptions. Creating a data request webpage and encouraging requestors to use it can help ensure that requestors answer the questions in the template and follow necessary protocols, thereby moving requests forward more quickly. More information can be found here: <https://studentprivacy.ed.gov/privacy-and-data-sharing>

Forum Guide to Data Ethics

The *Forum Guide to Data Ethics* was developed in response to the need among education organizations for a simple, comprehensive set of standards for establishing plans that encourage the ethical use and management of data. It includes core principles (called “canons”), examples, descriptions, and recommendations that reflect real situations that arise in schools, school districts, and state education agencies. https://nces.ed.gov/forum/pub_2010801.asp

management, or other handling of student data or software that uses student data. (See [Appendix A](#) for information about California’s requirements for third party vendors, as laid out in state code.)

- Discuss and implement clear and stringent policies for data suppression, data minimization and data destruction, including timelines and procedures for purging unneeded data.
- Encourage connections among information technology (IT) staff and other stakeholders, so that all parties understand one another’s needs and requirements and can work together to create effective privacy and security policies.

Data Governance, Privacy, and Security

Data governance encompasses all of the processes, rules, and systems relating to the quality, collection, management, and protection of student data—including both data privacy and data security. The National Forum on Education Statistics’ *Forum Guide to Education Data Privacy* (https://nces.ed.gov/forum/pub_2016096.asp) defines privacy and security policies and procedures, discusses their role in contributing to effective data governance, and identifies best practices for ensuring data privacy and security.

- Privacy policies and procedures are usually focused on adhering to the legal and ethical requirements for protecting the confidentiality of data. These requirements involve defining which data need to be protected (such as PII or sensitive data), developing policies that define acceptable uses for the data, identifying authorized users of the data, protecting data that are released in public reports, and destroying data when they are no longer needed.
- Security policies and procedures focus on technical aspects of protecting the data within the IT infrastructure and user applications and tools.

Data Destruction

An education agency's data governance program must include a plan for data destruction, both in regard to data collections housed internally (or within cloud applications, etc.) and data that are shared with outside parties. Not having a clear destruction phase can cause an agency's infrastructure to become unmanageable, and can make it a prime target for hackers.

Data destruction is not as simple as hitting "delete." It involves rendering data entirely unrecoverable, especially by third parties. There are three main methods of data destruction:

1. **Clearing:** software methods that remove data by overwriting or formatting an entire partition or disk
2. **Purging:** removing through physical or logical means (for example, magnetic fields can reduce a magnetic signature)
3. **Destroying:** making a medium fully unusable, via methods such as pulverizing or shredding

When data are stored in the Cloud, agencies face additional considerations. Shared resources may limit the ability to destroy data (in that someone else could still need it). Distributed architecture means that data may exist in more than one place, and it may be difficult to ensure it has truly been destroyed. In these cases, people sometimes use "deletion by encryption," which creates an algorithm to make the data unrecognizable and irretrievable. However, this method does not truly destroy the data, and is dependent on the strength of the algorithm.

Even when an agency has a strong data destruction plan in place, many issues can cause problems, such as untracked data within emails, backup copies of data, "shadow IT" (applications or infrastructure not under the jurisdiction of the IT department), or data unknowingly stored on employees' personal computers.

Data destruction is a crucial concern when agencies work with vendors. A clear, legally binding destruction plan must be part of any contract or memorandum of understanding (MOU). This agreement should, at minimum:

- Bind all parties to the agreement
- Specify points of contact and data custodians
- Set terms for data destruction
- Maintain the right for the agency to audit destruction processes
- Set forth a plan for handling any data breaches

Source: Tassely, M. & Gray, E. (2019, July 23). "FERPA Considerations: Data Retention & Destruction." Presentation at the 2019 National Forum on Education Statistics Meeting, Washington, DC.

Ensuring Privacy in Data Governance and Stewardship

The U.S. Department of Education's Privacy Technical Assistance Center (PTAC) offers education agencies guidance on how to successfully manage complex data systems by establishing a comprehensive data governance approach. Establishing a comprehensive data governance program will help to ensure confidentiality, integrity, and availability of the data by reducing data security risks due to unauthorized access or misuse of data. Specifying standards, policies, procedures, and responsibilities regarding data ownership and data-related activities will help organizations to minimize any detrimental outcomes in the event of a data breach.

PTAC offers a data governance checklist to help education agencies establish and maintain a successful data governance program that helps ensure the individual privacy and confidentiality of education records. The checklist includes detailed items and questions about the following:

- **Decisionmaking authority:** Assigning appropriate levels of authority to data stewards and proactively defining the scope and limitations of that authority is a prerequisite to successful data management.
- **Standard policies and procedures:** Adopting and enforcing clear policies and procedures in a written data stewardship plan is necessary to ensure that everyone in the organization understands the importance of data quality and security—and that staff are motivated and empowered to implement data governance.
- **Data inventories:** Conducting an inventory of all data that require protection is a critical step for data security projects. Maintaining an up-to-date inventory of all sensitive records and data systems, including those used to store and process data, enables the organization to target its data security and management efforts. Classifying data by sensitivity helps the data management team recognize where to focus security efforts.
- **Data content management:** Closely managing data content, including identifying the purposes for which data are collected, is necessary to justify the collection of sensitive data, optimize data management processes, and ensure compliance with federal, state, and local regulations.
- **Data records management:** Specifying appropriate managerial and user activities related to handling data is necessary to provide data stewards and users with appropriate tools for complying with an organization's security policies.
- **Data quality:** Ensuring that data are accurate, relevant, timely, and complete for the purposes they are intended to be used is a high-priority issue for any organization. The key to maintaining high-quality data is a proactive approach to data governance that requires establishing and regularly updating strategies for preventing, detecting, and correcting errors and misuses of data.
- **Data access:** Defining and assigning differentiated levels of data access to individuals based on their roles and responsibilities in the organization is critical to preventing unauthorized access and minimizing the risk of data breaches.
- **Data security and risk management:** Ensuring the security of sensitive and personally identifiable data and mitigating the risks of unauthorized disclosure of these data is a top priority for an effective data governance plan.

(For more information, see https://studentprivacy.ed.gov/sites/default/files/resource_document/file/Data_Governance_and_Stewardship_0.pdf and https://studentprivacy.ed.gov/sites/default/files/resource_document/file/Data%20Governance%20Checklist_0.pdf)

Chapter 4:

How Data Governance Needs Change Over Time

As technology and means of communication advance and become more complex, state and local education agencies (SEAs and LEAs) experience the need for rapid and continual changes in their data governance programs. Establishing a program is just the beginning: data needs and expectations need to be continually monitored in order to guide adjustments and updates to data governance policies and procedures. This chapter discusses how agencies recognize and respond to changing data governance needs.


When many agencies originally designed and implemented their data governance programs, the data team decided what data to collect. Current technologies mean that new data are automatically generated in many cases. Additionally, increasing focus on data-informed practice and decisionmaking means that new and changing requirements for data collection and use are coming from varied stakeholders. Those staff members who use the data required for a new or revised collection or report are not always consulted—the collection may be carried out by staff unfamiliar with existing data, or other offices may combine and use data in ways that may not have been discussed or vetted. The current push for interoperability of data, and transfer of data across multiple systems and among varied stakeholders, means that those who are making data decisions or advocating for increased data use may not be well-versed in the importance of data governance. All of these issues mean that data governance teams need to be continually adaptive to changing needs and unexpected situations.

In recent years, many agencies have experienced change in their data governance programs. For example, when the Nebraska Department of Education created a data governance group, it was mainly an implementation team for their statewide longitudinal data system (SLDS).

In the recent Office of Management and Budget (OMB) Approval Cycle, *EDFacts* made two significant changes based on public comments received.

In one case, Postsecondary Career and Technical Education data were dropped from the collection because the overwhelming public response indicated that states would prefer to provide those data through the Consolidated Annual Report.

In another case, the U.S. Department of Education (ED) received dozens of public comments asking that a category for “School Psychologists” be added to the staff collection, breaking them out from the “Other” category. After verifying that states had these data, it was added to the collection.



The team held weekly meetings to discuss data elements. The focus changed once the agency had compiled the data and needed to consider how they should be used. In Metro Nashville Public Schools, all data were handled at first by the information technology (IT) department. This changed when the district leaders realized the need for collaboration between IT and staff who understand the business needs related to data. Additionally, they have seen changes as community interest in LEA data has increased. Rather than simply focusing on reporting, Metro Nashville Public Schools is now also focused on making data actionable—that is, having enough practical value that it can be acted upon. This in turn has influenced the growth of data governance within the LEA.

Advances in technology have also highlighted the need for changes in data governance. In the past, there were limits on the amount of data that could be collected, stored, analyzed, and moved based on the capacity of available technology. As technological capabilities continue to grow, there are fewer technology constraints guiding data governance. Now, more than ever, it is critical that data governance programs focus on

- *people* (who makes decisions regarding data, who has access to data, how they are trained, and what rules they must follow); and
- *processes* (the rules and procedures an agency establishes for determining how data are collected, used, managed, reported, and destroyed).

In Arkansas, there was some concern when a state superintendent of instruction who had championed data governance was leaving. However, because he had created policies, forms, and expectations related to governance, things continued smoothly even after his departure.

Like the Nebraska Department of Education, many agencies that initially established data governance for a specific purpose, such as managing SLDS data, have found that data governance can reduce reporting burdens and streamline processes in other areas, as well. For example, in some agencies the different program offices responsible for the aggregate data used in federal reporting do not coordinate. As a result, LEAs may get multiple data collection requests from the SEA that include overlapping data and timelines. When these SEA program offices are engaged in the process of data governance, they can coordinate their requests to LEAs and thereby reduce LEA data burdens. Data governance can also help SEAs and LEAs to streamline and coordinate data monitoring—that is, the checks required to confirm that data are accurate prior to compiling reports.

In Metro Nashville Public Schools (TN), the data quality dashboard the team implemented has not only helped data stewards quickly see errors, but it has allowed the data quality team to identify common problems and their root causes.

Data governance needs also change based on shifts in staffing and leadership. Part of sustainability is having a data governance program that allows the agency to navigate these changes, especially during simultaneous advances in technology needs and complexities.

Maturity Models

Many agency leaders recommend the use of maturity models in data governance programs. A maturity model is a tool that is used to develop, assess and refine an expansive program, which allows an agency to consistently measure the state of a program over time.

“The design of the maturity model also influences the strategic direction of the program. A maturity model is made up of levels describing possible states of the organization where the highest levels define a vision of the optimal future state.”

Oklahoma uses the Stanford Maturity Measurement Tool, which contains both qualitative and quantitative metrics to track the growth of the data governance activities throughout the organization. The model incorporates the five maturity levels of the Software Engineering Institute’s Capability Maturity Model (CMM): Initial, Managed, Defined, Quantitatively Managed, and Optimizing. It also includes three foundational components (awareness, formalization and metadata); three project components (stewardship, data quality, and master data); and three dimensions (people, policies, and capabilities).

The Stanford model includes guiding questions for each of the component-dimension combinations that help an organization assess their current situation, as well as a tool for rating where each combinational element falls in the five CMM maturity levels.

Source: Oklahoma Office of Management and Enterprise Services https://www.ok.gov/cio/Custom_Portal/Data_Governance/Information.html

This can be an even bigger issue in a small organization, with fewer people to handle data governance tasks. The ways smaller agencies structure their programs may differ from the arrangements possible in larger agencies (see large box, “Data Governance in Small and Large Districts,” in chapter 2).

Agencies can work to stay ahead of data needs by

- continually monitoring data quality needs for ongoing maintenance and improvement (for example, Metro Nashville’s Data Quality dashboard);
- monitoring changes that could influence data collections (for example, changes in student population or teachers and other staff);
- collaborating with other agencies (for example, health and human services, employment) to share information about relevant changes and to discuss interagency data governance;
- staying ahead of technological advances that may influence data collection and use;

EDFacts Data Governance and Stewardship

The EDFacts Data Governance Board (EDGB) is an intra-agency council with representatives from prekindergarten through grade 12 (PreK-12) program offices across ED that resolves issues and creates the policies needed to manage ED's PreK-12 asset of education data. The EDGB supports data quality and data integrity by identifying common standards, developing operating policies, and implementing processes for managing data. The EDGB employs member-driven data governance, which includes the following key elements:

- EDGB meets monthly
- Data issues are introduced by members
- Workgroups engage ED stakeholders to analyze data issues and propose resolutions
- Decisions are made via consensus
- Workgroups are led by EDGB members
- Information is disseminated through a shared drive to support group access to information and transparent decisionmaking

EDFacts also carefully considers data stewardship. Every data group in EDFacts has an identified stewarding office. Stewards are offices across the U.S. Department of Education (ED) that support data definition, acquisition, review, as well as data use for a defined set of data. All ED offices that steward EDFacts data have a representative on the EDGB. Stewards actively participate in the development and implementation of data management policies and procedures overall, and are also responsible for representing their unique set of data in data governance discussions.

Source: <https://www2.ed.gov/about/inits/ed/edfacts/edfacts-edgb-data-governance.pdf>

- forming collaborative groups including LEA and SEA staff (for example, Washington, West Virginia);
- meeting regularly with data stewards; and
- collectively reviewing data elements so that everyone is aware of changes.

Chapter 5:

Case Studies from SEAs and LEAs

Through detailed case studies provided by members of the National Forum on Education Statistics (Forum), this chapter offers an in-depth look at the challenges, successes, and lessons learned from education agencies in their data governance efforts, with specific attention focused on the ways in which these agencies have envisioned, maintained, and improved their programs.

West Virginia: Improving Data Quality through Better, Broader Access


The West Virginia Department of Education (WVDE) began instituting formal data governance with the assistance of a Statewide Longitudinal Data System (SLDS) grant in fiscal year (FY) 2012. To build a formal data governance structure and protocols, WVDE engaged leaders and staff across all divisions and among key partners and stakeholder groups. The resulting multi-tiered system of data governance included

- a Data Policy Committee to establish priorities and an overarching vision;
- a Data Governance Committee to manage the bulk of implementation and information sharing; and
- a group of Data Stewards to serve as liaisons and advocates for their program areas.

WVDE leaders fully supported the institution of formal data governance structures, processes, and changes aimed at improving data quality, appropriate access, and use.

As many education agencies have experienced, work at the WVDE often happened in silos with limited cross-collaboration. Although the data stored in the West Virginia Education Information System (WVEIS) served as the source for all federal and state reporting, management of, knowledge about, and access to the system were limited to the data office (that is, the management and information systems staff members who maintained the databases and operation of the system). Generally, data ownership was assumed to reside with the team managing the data system rather than with the offices responsible for supporting and monitoring the work represented by those data. The team in the data office did good work maintaining and improving the data system; however, program office staff were not consistently involved in discussions or decisions related to the system or the data stored in it and had no

WVEIS is a centralized statewide student information system that all districts must use as the system of record for student-level education data (per state law).



access to review data or provide data-related support and assistance to local staff. Further, program staff needed to request reports from the data team, but those reports were not always handled consistently or in a timely manner. Lack of consistent communications processes meant that program staff could not identify potential issues or errors in data until after submissions, and that data staff were not always informed of rule changes. Data were continually being corrected for weeks or months after collections. The division of labor tended to result in feelings of frustration on all sides, with program staff also feeling powerless and data staff feeling overworked.

Working Toward a Solution


As the state education agency (SEA) began implementing formal data governance in 2012, WVDE had the opportunity to rethink how responsibilities for education data at the state level were distributed. Leaders started by focusing on issues of data ownership and job responsibilities. The message presented by the data team was that the data process would actually become easier for everyone if program offices took ownership of their data and ensured its accuracy. They have built relationships across the groups that have allowed data stewards to ask questions earlier in the process and improve data quality overall. Discussions among data governance stakeholders and the formulation of new processes allowed WVDE to rethink and reconfigure relationships and responsibilities. Doing so allowed program staff to have greater access to and ownership of the data for which their offices bore primary responsibility.

A key turning point in this process was the recognition that state-level program staff needed access to the data system to effectively perform their jobs. In the past, there had been an assumption that only data team members had a legitimate interest in accessing the data system for the purposes of performing their job responsibilities. However, through discussions initiated in data governance bodies, stakeholders arrived at a new understanding of access needs and the permissibility of access within the boundaries of privacy regulations. Consequently, a new process was instituted to provide data system access to program staff who had a legitimate need to view data for the purposes of

- monitoring local program implementation;
- reporting pursuant to state and federal requirements; and
- providing support to local educators and administrators.

Program staff then could see the data in a more timely manner, resulting in more timely identification of issues or errors. Additionally, data staff were relieved of the responsibilities of creating certain types of reports that program staff could easily access through the data system.

As a result of the data governance work conducted within the WVDE, data quality and use have improved greatly. Data are cleaner and timelier. As common errors have been identified and addressed, the department has established and implemented more sophisticated data error checks in real time to proactively address and fix data errors



before data collections. All data stakeholders—and particularly program staff—understand data better, feel a greater sense of ownership, and encourage greater use of the information at both the state and local level. The improvements in data quality and access have enabled WVDE staff to move beyond basic administrative uses of data (for example, state and federal reporting) to the essential work of using the information to support local staff engaged in school improvement efforts.

Importantly, data governance structures and processes have created greater collaboration and trust among offices at the department. Staff have an improved understanding of the various responsibilities and constraints of their colleagues in different offices and roles. Stakeholders generally recognize that multiple offices may have vested interest in ensuring the accuracy and appropriate use of data related to their work. Over time, improved access and the reallocation of certain responsibilities has allowed WVDE to more fully integrate operations between program offices and the data team. Although the department occasionally struggled to overcome ingrained ways of thinking and doing (such as the perception that all data-related work was the responsibility of the data team only), staff in the department have greatly improved inter-office collaboration and have cultivated a greater understanding of one another's work, needs, and constraints.


The Importance of Leadership

Throughout this evolution, support from leaders has been critical. In the early stages of data governance development and implementation, clear and vocal support from department leaders was essential for bringing the right stakeholders to the table and cultivating buy-in. As preliminary goals were met, leaders provided strong direction and support for achieving new goals (for example, moving from access to improved quality). WVDE leaders have been key factors in encouraging all department staff and local leaders to work together and find solutions.

Louisiana: Encouraging Buy-in for Data Governance through Data System Development

The Louisiana Department of Education (LDE) began work on its data governance program in 2012, when the state received its first SLDS grant. At the time, few stakeholders in the agency were aware of the need for data governance, but because data governance was required as part of the SLDS grant, the team began to research and establish a program.

In the beginning, LDE primarily leveraged materials and support from a contractor. The team researched what other resources were available from other states or other entities but found that there were not many data governance resources in the educational space. They therefore developed their own data governance policy and training and then rolled it out to the agency. The data governance director worked with the contractor for the SLDS as well as the SLDS Support team, and then with internal agency executive staff. As staffing has changed over the years, more and more data staff report to the same assistant superintendent, which has been helpful for data governance.



Before implementing the new data system, the team traditionally identified data stewards by reviewing all the data collected and then selecting the person considered responsible. However, as part of the new data system implementation, the team tried a more strategic path. They shared information with executive staff about the development of the system and overall goals for the implementation and asked the executive staff to identify staff members to represent their areas. This helped the data team establish a group of subject matter experts (SMEs). They then narrowed the list to create a manageable group of data stewards. The data team pulls together the SMEs in various groupings depending on the issue at hand, and the data stewards help make final decisions and resolve conflict. Executive staff are updated when there are issues that affect the entire agency.

LDE's data governance working group is comprised of data analysts. Through their collaborative work, analysts have found that much of their work is interdependent, and they are able to ensure that the analytics staff are not operating in silos. Though it was difficult in the beginning to convince staff to bring data issues to the group, team members now attend regularly and submit items to be discussed. Participants are expected to share their current major work streams during weekly meetings, which allow the group to address issues and identify areas of interdependency.


As the data governance program was in development, LDE used the working group composed of data analysts to build support for data governance from the ground up. Members of the group limit the use of the term "data governance," and instead focus on the processes and structures needed to make the data system development successful. Through this process, they are trying to establish practices that can carry through after the system development is complete.

Facing a Challenge: Personally Identifiable Information (PII)

Due to a state law, LDE can no longer receive student PII. As a result, LDE created a system of unique identifiers that the school systems assign to each student. As students transfer from school to school, issues can arise with multiple unique identifiers per student. Data governance helped to solve the issue of multiple unique identifiers by providing a means for bringing staff together to share their needs and concerns and find a solution.

Arkansas: Developing Data Governance over Time

The implementation process for data governance at the Arkansas Department of Education (ADE) began in the early 1990s under legislation that required ADE to make extensive use of information technology at the state and local level, in order to provide accurate and timely information to policymakers and to reduce the state reporting burden. The early legislation required the implementation of a statewide computer network that would connect all school systems. In the initial development of this network and statewide data collections, ADE created the Statewide Information Systems (SIS) handbook. This provided a data dictionary that directed local education agencies (LEAs) in data submission to the state. The statewide data collections provided the source data for both state and federal reporting.



Early data governance efforts centered on streamlining the multiple systems and processes involved in the implementation of the statewide computer network. The members of the team who were tasked with streamlining the systems and processes consisted of individuals from Student Management System; Financial Management System; and Division of Research and Technology; which currently has been split into two separate offices, Research and Technology and Information Technology.

Under guidance from an outside advisory group, ADE moved forward in its data governance by adding the Data Steward Review Committee (DSRC). The committee members included representatives from all divisions of the department, including those teams already focused on streamlining systems and processes. DSRC was initially tasked with automating annual state-level reporting by LEAs. As the siloed manual reporting to the state began to decrease through the collective efforts of the committee, the committee's duties and responsibilities shifted to reviewing researcher requests for data.

DSRC began undertaking its new assignment to review data requests by restructuring the committee. Previously, DSRC was housed under the Division of Research and Technology, and the division lead appointed a chairperson for the committee. The restructured committee was designed to be cross-functional and to include representatives from each ADE Division, as well as legal services. Each ADE Division is represented by three members who are considered SMEs in their program or division. The committee members worked collaboratively to develop the policies, procedures, and standards that would work across the agency; these are documented in the ADE DSRC Handbook. The handbook also outlines the roles, responsibilities and guidelines for the structure of the committee, and it provides guidance for other areas of data governance, such as data privacy and security. As the committee undertook their work to review research data requests, they created the forms, applications, and procedures needed for the request process.

ADE's implementation of the SIS data dictionary, updated technologies, and multi-thread processing allowed data to be pulled in more easily and frequently, on both a nightly and on-demand basis. As more data became available, the demand for data from stakeholders, researchers, the public, and legislators increased. In an effort to meet these demands, ADE began to develop data centers and data reporters. ADE created a unit solely for the purpose of fulfilling data request needs. Since the unit was dedicated to reporting, few requests for data were denied.

As part of its work to effectively manage data requests, ADE implemented systems to monitor and track requests and ensure the protection of student data privacy and security. The monitoring and tracking systems have since evolved into ADE's Request Management System (RMS) for internal stakeholders/program offices and Data Research Request Application (DRRA) for external stakeholders and researchers.



Automated data feeds from nightly systems have enabled data availability and transparency, and ADE provides data back to districts and other stakeholders via My School Info (<https://myschoolinfo.arkansas.gov/>), which allows the public to search and compare public schools and districts across the state, and SIS Reports, which is a collection of public data from Arkansas K-12 Public Schools.

Through the SIS, users can access report statistics on topics such as bus counts, course enrollment totals, finance, student demographics, teacher and staff counts, and much more. Data Reports are available based on a variety of subject areas at the SEA, county, LEA, and school levels. The Statewide Information Reports are sourced from the ADE State Data Warehouse, which is populated using certified data submitted by LEAs nine times a year.

Leveraging Data Governance: Supporting Civil Rights Data Collection (CRDC)

Recently, Arkansas leveraged the Statewide Information Systems Data Warehouse to provide support to LEAs. Arkansas aided in data submission to the Office for Civil Rights biennial data collection by pre-populating data on behalf of LEAs. The 2017-2018 data submission marked the first year Arkansas was able to assist LEAs in this capacity. The data governance teams were instrumental in determining data availability sourced from the state data warehouse. The support to LEAs resulted in a considerable reduction in hours spent gathering the required data for the collection⁸.

Developing Over Time

Through the development of its data governance program, ADE has found it challenging to keep up with changing and emerging technologies, particularly during times of staff turnover, changes in leadership or agency restructuring. Data leaders in the state note how time-consuming the development process is and suggest that education agencies focus on collaboration among offices and departments while developing and implementing a plan. They also recommend ensuring that SMEs and data stewards have key roles on various data governance committees.

Kentucky: Cross-Agency Collaboration Builds Robust, Sustainable Data Governance

The Kentucky Longitudinal Data System (KLDS) is a centralized data system managed by the Kentucky Center for Statistics (KYSTATS), an independent office within the Education and Workforce Development Cabinet. KYSTATS state legislation provides that education and workforce agencies shall provide data to the KLDS, and KYSTATS has data sharing agreements and state statutes that authorize it to receive data from multiple state agencies, including

- the Department of Workforce Investment, Unemployment Insurance;
- the Kentucky Department of Education;
- the Kentucky Education Professional Standards Board;

⁸ For more information on other SEAs that have assisted LEAs with CRDC submissions, see the *Forum Guide to Reporting Civil Rights Data*, available at https://nces.ed.gov/forum/pub_2017168.asp.

- the Kentucky Council on Postsecondary Education; and
- the Kentucky Higher Education Assistance Authority.

These state agencies have formalized data sharing outside state legislation, which authorizes KYSTATS to receive data beyond education and workforce data.

Collaboration Across Agencies

The state's strong data governance began with the designated structure of the KYSTATS board. Agency heads from Kentucky's education and workforce agencies all serve as members, so the board includes the Secretary of the Education and Workforce Cabinet, the President of the Council for Postsecondary Education, the Commissioner of the Kentucky Department of Education, and the Executive Director of the Kentucky Higher Education Assistance Authority. In July 2019, an amendment to the legislation also added the Secretary for the Cabinet for Health and Family Services to the KYSTATS board.

The work of KYSTATS is governed by a biannual research agenda developed by representatives from each agency, who are appointed by their respective board member. The Board approves the research agenda for KYSTATS and approves any new agency's data to be included in the KLDS. The KYSTATS board meets quarterly to be informed about and provide feedback on the progress of work aligned with the research agenda. This process ensures support for the continued development and use of the KLDS. It also ensures sustainable support for working collaboratively both with and through KYSTATS on cross-sector policies and issues.


Strong data governance is further promoted by required input and sign-off from each partner before a report is released to the public. All reports and data requests fulfilled by KYSTATS are reviewed by each agency whose data are included. The agency has 10 days to complete the review. All individual-level, de-identified requests are also reviewed and approved by each partnering agency.

Continuing Success

Through strong leadership and guidance of the Board over the years, KYSTATS has matured to one of the most robust longitudinal data systems in the nation. The early data governance model built trust and respect across the Commonwealth, which created opportunities to approach other data partners about sharing data that could answer critical questions for Kentucky. The KLDS has more than doubled in partnering agencies to create a data system with over 6,500 data elements over 10 years of time. The first high school feedback report was created in 2012, and KYSTATS published more than 30 reports and fulfilled more than 200 data requests in 2018. This growth and success would not be possible without the strong data governance in place with agencies on our Board, as well as additional partnering agencies who provide data.

Nebraska: Maintaining Flexibility as Needs and Structures Evolve

Nebraska's data governance program developed through an evolving process over the past two decades, with Nebraska Department of Education (DOE) staff, the Administrator of Federal



Programs, and data, research, and evaluation staff all involved. While initial governance efforts centered on a project team working to modernize data collections, this team and subsequent approaches to data governance evolved to reveal a program that continues to change and mature as issues, topics, and discussions shift.

An Evolving Process

The first movement toward recognizing data governance was acknowledging the burden that data collection placed on LEAs. In an early effort to discuss data burdens, the DOE printed all the forms required by LEAs to complete. These were posted prominently on a long hallway (both sides) at the DOE and created a “wall of shame” intended to highlight duplication and dramatize the data burden felt by districts to the SEA staff. This visual illustration of the problem led the DOE to develop new processes and highlighted the importance of engaging LEAs in data governance. DOE leaders recognized that while consolidating data reporting efforts and reducing the reporting burdens would be beneficial, any consolidation efforts had to be undertaken thoughtfully to ensure data quality.


Over time the student-level data collection process was implemented, and a project team was charged with determining key aspects of the process, such as the types, frequency, definitions, and calculations of the data collection. The “implementation project team” transitioned to a formal Data Collection Committee (DCC) as data collection processes improved.

In an effort to engage LEAs in data governance, the DOE also created the District Data Collection Group (DDCG), which serves as a connection between the SEA and LEA staff involved in data collection. The group is made up of LEA representatives from the eight-state board of education districts and includes a balance of urban, rural, large, and small LEAs. The group meets virtually during each month of the school year to discuss implications of required or emerging data collections, discuss data quality issues associated with the reported data, and capture feedback. The group functions as an advisory board to discuss new requirements, potential barriers or issues, unintended consequences, and other concerns, and it communicates with specific staff working with data in the schools to test practices, refine approaches, and be aware of emerging changes.

Focused on continuous improvement, the DCC recently refined the process used by different program offices to bring questions to the group. If, for example, the Accreditation Office asks about block scheduling, an evaluative discussion to determine recommendations is held by the agency’s DCC as a formal process, and considers what, if any, operationalization recommendations may arise. The DCC Committee then engages the DDCG, if appropriate, to refine operation approaches.

Lessons Learned

Early versions of data governance focused on project implementation. This approach proved effective for meeting specific data collection and systems goals. But over time, DOE leaders



realized that they needed overarching process and procedures. The DOE aimed to develop a formal data governance structure to clarify reporting structures and answer questions about how various groups, such as the Institutional Review Board, DDCG, and Curriculum Committee, were integrated into the data governance process. Though the word “governance” can create perceptions of something rigid and structured, DOE leaders quickly realized that governance is most effective when the rules and procedures evolve from the needs of the organization, rather than implementing a set of top-down requirements. It is critical to identify the purpose of data governance—for example, by focusing on how data are used and what questions must be answered—and develop rules that meet the data-related needs of the agency. Moreover, data collections often change, and it is important that data governance structures remain flexible so that they can be modified to meet the changing needs of the agency.

As they try to use these practices moving forward, the Nebraska team has taken steps such as publishing the data dictionary in Common Education Data Standards (CEDS), and then directing researchers making data requests to use CEDS to refine their questions. This helps discourage the researchers from requesting data the state doesn’t have and allows for more thoughtful planning.

Moving Forward

As Nebraska’s team continues to refine their data governance, they are still trying to improve in some areas. For example, leaders note ongoing efforts to take advantage of internal efficiencies, such as using automated workflows. Some offices still communicate information in modalities that are not the most efficient, which could instead be automated and routed to appropriate people. Insights could occur prior to meetings, if the right individuals were able to access information more efficiently.

Like many agencies, Nebraska also has continuing issues concerning capacity, as they try to balance increasing expectations with limited resources and time. Who is included in the data governance process, for example, and what is the opportunity cost of not having everyone involved? Leaders are striving to walk a line between engaging stakeholders in a way that does not overwhelm people, and keeping a realistic perspective on what is possible within the larger system. This also includes validating the relationships and governance among external agencies and entities as well (for example, postsecondary education, labor, early learning).

Minnesota SLEDS: Maintaining Cross-Agency Governance and Staying Prepared for Change

Minnesota’s Statewide Longitudinal Education Data System (SLEDS) is managed jointly by the Minnesota Office of Higher Education, the Minnesota Department of Education, and the Minnesota Department of Employment and Economic Development. In addition, the Minnesota Department of Health and the Minnesota Department of Corrections provide data to the system. Under state law, the Minnesota Office of Higher Education serves as the administrative and fiscal lead for SLEDS, assuming responsibility for legal and data privacy issues and state



funding under the legislative budget process. State law designates the Minnesota P-20 Education Partnership as the official governing body for SLEDS.

The structure and processes for data governance were developed from 2006 to 2009. Because the three lead state agencies (Minnesota's Department of Education, Office of Higher Education, and Department of Employment and Economic Development) did not have an extensive history of data sharing or working collaboratively on key projects, they agreed that a shared model of data governance was the most appropriate in order to build trust and ensure effective management and use of the system. The Minnesota P-20 Education Partnership was chosen as the governing body of SLEDS, given its purpose in state law and its membership, which included all the major stakeholders within K-12 education, higher education, and workforce. The newly established SLEDS Governance Committee charged agency staff and organization representatives with developing policies and procedures for data management and governance. Staff from the three lead state agencies led the design and implementation processes, but the representatives across K-12, higher education, workforce, the legislature, business organizations, and parent groups formed the committee.

In fall 2009, the Minnesota P-20 Education Partnership assumed its role as the governing body for SLEDS. Partnership members were asked to appoint representatives to three committees: the SLEDS Governance Committee, the SLEDS Research Committee, and the SLEDS Data Advisory Committee. Committees reviewed their respective charges and identified policies and processes to be developed. A portion of time the first year was spent learning about the various data sets included in SLEDS and developing a priority list of research questions for the system to answer. Staff then began developing web-based public reports for the committees to review and approve based on the priority research questions developed.

In 2014, the Office of Higher Education received approval for the first release of de-identified individual-level data from SLEDS for a legislatively mandated report on developmental education enrollments by recent high school graduates. This was the first use of a newly approved SLEDS research request application and related approval process. Since 2014, this process has been enhanced (for example, more detailed questions about data security at requesting organizations) and streamlined (for example, eliminated separate approval requirements by participating agencies). In addition, the SLEDS Research Committee and the SLEDS Data Advisory Committee have merged.

The new data governance process allowed participating organizations in SLEDS to establish trust and grow working relationships. The process was built on seven guiding principles for data access and management:

1. SLEDS will focus on providing cross-sector, linked data and analysis.
2. SLEDS relies on transparency and clarity in all we do.
3. Protecting the privacy of individuals is a priority.
4. Common understanding and use of data increase its value.

5. Data providers, at the state and local levels, are critical sources for understanding and explaining the data.
6. Maintenance of SLEDS and the provision of research and analysis is the responsibility of all data providers.
7. Local partner data provider access is needed for data to drive continuous improvement in local and state level policy.

Each organization's application to use SLEDS data is discussed in depth as a group and requests are only approved if consensus is reached. Minnesota also frequently has data requesters present study results to both the SLEDS Governance Committee and the SLEDS Research and Data Committee members so that research findings add to the knowledge base within the state.

Facing Challenges

Minnesota's data governance processes have not been without challenges. The team found that their original web reporting system did not meet the specifications established for reporting and use. Information technology (IT) staff revised the technical specifications and rebuilt components of the reporting system to meet user requirements as identified by the governance process, which caused a one-year delay. Upon release, however, the web-based reports received significant and frequent positive feedback from users.

Another considerable challenge that delayed Minnesota's work was single agency control of the 2009 federal SLDS grant funding. Only state education agencies were eligible to apply, thus a single agency maintained control of funding. SLDS was seen as an IT project, and IT staff only reported to the SEA as a result of the funding process. The SEA IT staff held views that were more consistent with restricted data access than with the multi-agency Governance Committee and multi-agency data use, which resulted in delays. Diversifying funding streams among higher education (state SLEDS funding), workforce (Workforce Data Quality Initiative grant funds), and K-12 (SLDS grant funds), realized the full vision of shared governance.

Staying Prepared for Change

The SLEDS team recognizes that the system will remain in a continual state of change. They regularly make modifications to existing SLEDS reports in response to the needs of users. Likewise, they add data sources to fill identified data gaps, in order to improve understanding for local and state policy uses.

Several data governance policies and processes have changed over time. Specifically, the SLEDS team has developed protocols for opting out individuals within the SLEDS de-identified data when required by state law, developed criteria for allowing data providers access to re-identification codes for individuals they submitted to the system, and made available a fixed set of de-identified individual-level data to every K-12 and higher education organization providing data to SLEDS with approval from the organization's executive.



They have also developed a set of questions for assessing a new data provider's readiness to join SLEDS:

1. At a high level, does your agency have a willingness to engage in a partnership like this? Is leadership onboard? Are your stakeholders willing and able to see the value in sharing data with SLEDS?
2. Is the agency able to dedicate staff time and resources (for example, staff time to document, test, validate and train others to use the data)?
3. Does the agency have legal authority to share these data? Are there other statutory/legal conditions to consider (for example, individual consent)?
4. How are the data collected and stored? Are the data structured in a usable format? How clean are the data? Is there IT capacity to pull data in an agreed-upon format, submit to SLEDS, and respond to questions regarding integration and validation?
5. Has the contributing agency identified data from SLEDS that will add value to reports and information they produce? Has SLEDS identified data from the contributing agency that will add value to reports and information SLEDS produces?

In 2014, the team faced changes when the administration and management of SLEDS shifted from being funded by the Minnesota Department of Education and the U.S. Department of Education SLDS program, to being funded by the Minnesota Office of Higher Education and other state funding. Because the team had strong cross-agency governance and management in place, the transition went smoothly. They have continued with structures and functions as originally envisioned but have adapted policies and protocols when necessary.

Minnesota ECLDS: Incorporating Early Childhood Data into the Longitudinal System

Minnesota's Early Childhood Longitudinal Data System (ECLDS) incorporates birth through third grade data and is overseen by the state Department of Education. ECLDS was developed as a sub-project under the state's Race to the Top Early Learning Challenge (RTT-ELC) grant awarded in 2011, and its data governance was originally modeled after that of Minnesota's state longitudinal education data system (SLEDS), which includes K-12 through postsecondary education and workforce data. The ECLDS was recently named in statute alongside SLEDS as an integral part of the state's P-20W system.

As they modeled the ECLDS governance after SLEDS governance, agency leaders first assembled representatives from each state agency that had agreed to contribute data under the RTT-ELC grant. Each state agency was also asked to identify two professional associations representing their direct practice communities to also provide representatives. They then reviewed and consolidated more than 70 policy questions that were provided to the governance groups for implementation in the ECLDS. Reducing these questions then helped the working groups to identify exactly who needed to be involved in the work, which also informed the development



of the data sharing agreements between the state agencies. The ECLDS lead facilitated each step of this process.

As ECLDS governance was developed, it was modified from that of SLEDS to have only a two-part governing process, in which the ECLDS Governing Body makes decisions upon the recommendation of the Research and Data Committee. In the event this two-part structure fails to come to consensus, a small ad hoc group referred to as the Mini Cabinet, composed of agency commissioners, will be convened to break any impasse. To date, this mechanism has not been needed.

A unique governance practice featured in the ECLDS system is the use of consensus decisionmaking. Rather than a more typical voting structure, Minnesota opted for consensus to ensure that anyone who wants to be part of the recommendation process feels that they have a place at the table. This practice also addressed the concerns of leaders who were concerned that voting practices could weight decisionmaking heavily toward those members who show up or allow departments to center attention on their own interests by having a strong turnout at a meeting where a pivotal issue was being discussed.

Strengthening Trust and Allowing Continuity

ECLDS governance practices have helped establish greater trust from many of the state's related agencies and offices. Some program areas participating in ECLDS historically made decisions about analysis and data use in isolation from other systems or relevant stakeholders, which caused other partners in these initiatives to mistrust the results. With ECLDS governance in place, discussions and decisions about the use of data and the work of tackling policy questions now take place in the open and are documented and shared broadly. The governance structure allowed for this openness about intentions, and many staff members have welcomed the change as refreshing.


Established governance also allows process continuity through agency transitions, such as a change in state agency commissioners or a switch in funding sources.

Recognizing the Needs of Users

ECLDS lead staff and governance members acknowledge that they expected most users to believe in the usefulness of the available data and interact enthusiastically with all features of the ECLDS site. However, they learned over time that a subset of users wanted the information the site provided but did not all feel comfortable using the site to find the data. These users tended to be very short on time or lacked comfort using a data site like ECLDS. The ECLDS team later took advantage of an ECDataWorks grant opportunity to develop a user-friendly data story tool (MN Kids Explorer) that contextualizes data and provides key summary points for action.

Metro Nashville, Tennessee: Developing Formal Processes for Data Quality

Metro Nashville's data governance program was developed through an iterative process that focused on data ownership and specified business rules. Prior to the implementation of the data



governance program, the district handled data quality through the data specialist role. Each school had a data specialist who entered data that had been filled out and sent to the office. As Metro Nashville moved from this type of data entry to a data system with a point-of-service (POS) data entry, the district also began to restructure how the data process would work, and who would be responsible for data quality and accuracy.

Metro Nashville now has 22 data quality specialists who are no longer entering the data for schools and are assigned to the LEA's Department of Information Management and Decision Support, and the centralized office of Data Quality and Integrity. Rather than working in a school as the person responsible for collecting and entering data, specialists are now responsible for monitoring data quality, identifying the root cause of data quality issues, and guiding and coaching the staff at each school to implement solutions to the issues. The Office also has four managers and two analysts, giving the district far more staff directly devoted to data quality and governance than most education agencies.

As the district made the transition to the POS system, which included transitioning to a system where the person handling the data (whether this be a teacher, administrator, counselor, etc.) was also responsible for entering the data, the number of data errors increased. For a while, the data quality specialists ended up being a clean-up crew for school data. The team was not intended for such work, and it was not an efficient, effective, or sustainable way to address data quality issues. Instead, they began working with all of the individuals handling data to transfer accountability for accuracy back to them. The LEA established a new rule that it is not the job of the data specialists to fix data errors. Rather, they provide support, identify trends in errors, build staff data knowledge and capacity, and monitor data quality in schools. The specialists look for problematic data rules, and work with staff to find solutions and implement corrections when such rules are found. This information from the field is also sent up to decisionmakers and executives, who are necessary to fuel policy and process development and resolve systematic data issues that require larger scale change.

Metro Nashville also leveraged technology to help ensure data quality. The district used their data warehouse to create a data dashboard that has a number of built-in data quality checks. Business rules catch and display the errors by category (for example, course coding errors or grading errors), which allows school staff to monitor daily their data and see errors. Beyond this, the data quality specialists look for trends in the errors. These trends can help identify the origin of the problem, such as a data entry staff member who needs additional training or an unclear data definition.

Formalized data governance has improved relationships between data, IT, and program departments. The dashboard—and its ability to quickly identify errors to be corrected—has increased staff confidence in the data, and also created a pathway for communication related to data requirements. For example, program offices, such as English Learners (EL), Special Education (SPED), and Curriculum and Instruction now approach the data team with questions about changes based on state laws. People now know where to go when they have challenges or questions.

Evolving Perspectives

Metro Nashville had wanted to formalize data governance structures for some time but faced challenges related to peoples' beliefs about who is responsible for data tasks. One challenge was the expectation that if something goes wrong with data, staff should turn to IT to solve the problem. Instead, Office of Information Management and Decision Support staff now actively engage data owners who have extensive knowledge about specific areas of data to help them solve data problems themselves. This transition in perspective has also required adjustments in the roles of both IT staff and data support staff: they are now coaches and data teachers who support data collection, reporting, and use by other staff.


The data team also worked to change the perspectives of people who thought that working with data was not part of their job. Some staff believed that only clerks enter data. They needed a better understanding of POS data flows. The Office of Information Management and Decision Support helped staff in schools understand that many of their daily tasks are in fact data-related, such as taking notes; the difference is that now they enter data directly into a data system. Additionally, Metro Nashville's data quality team educated staff about data use. This effort helped staff to move beyond the idea that data entry is an obligatory reporting task and to see how data are being used and applied throughout the district. Policy, legislation, and district procedures all determine what data are entered and how; knowing this helped people understand the need for data and the importance of data quality. Staff now have a better understanding of business rules, which minimized errors and increased accuracy. As staff perspectives changed, the data quality team searched for champions who could encourage others to change their perspective.

The Weekly Meeting

The leadership from the Data Quality and Integrity Office holds a weekly data governance meeting to which stakeholders from across the district can bring data issues. They work through a collaborative facilitated process that helps the stakeholder define root causes and develop solutions to bring back to their office or program. The facilitated process includes templates and a set of questions, and the group is there to help think through solutions. Working with the group also allows people to make connections about their issues and see where there may be collection duplications or possibilities for collaboration. Ultimately, the weekly meeting reinforces the idea of data ownership; the data team facilitates collaborative solutions, they do not fix issues. This is a change from the past, when data problems were seen as something to be handed off.

Northshore School District, Washington: Better LEA-SEA Communication through Data Governance

Northshore School District (NSD) and other districts in Washington have partnered with the Office of Superintendent of Public Instruction (OSPI) to create formal data governance. OSPI has a website dedicated to the data governance workgroup, <https://www.k12.wa.us/about-ospi/workgroups-committees/currently-meeting-workgroups/k-12-data-governance>, including an overview of the group, a list of members, meeting agendas, and relevant legislation. Before



establishing OSPI's data governance group and including data governance in state statute, data staff in NSD found themselves under a great deal of data burden, both from state requirements and from continual requests from various offices within the district. LEA staff realized that the core issue was data governance: they needed better communication structures, clear data definitions, and improved stakeholder knowledge about data.

When LEA staff in Washington began collaborating with the SEA to formalize data governance, they created groups for governance, data use, and other elements of the process. As they moved forward and created better governance structures, they integrated these ideas and brought more people together. They now meet monthly and work through data collection, management, and use questions. Moving to this more scheduled and meaningful level of coordination has allowed SEA and district staff to purposefully discuss communication, timelines, new collections, definitions, and business rules. They can consider, for example, what the burden of a new data set might be and clarify whether what is being requested will meet the specified objectives. They have streamlined processes, eliminated redundancies, and ended collections that are no longer useful or relevant.

Working with the SEA

One of the most important things to emerge from OSPI formalizing their data governance was a more informative relationship between LEAs and the SEA. The state superintendent's office sends many of the data requests NSD receives. Working with the SEA to clarify and align data definitions, as well as to explain the impact of particular requests or collections on the LEAs, increases understanding on both sides.

NSD clarifies what particular data represent compared to the SEA's intent when they ask for a collection. For example, the LEA and SEA may not be in agreement about what a seemingly common term such as "absence" means in practice. How much of a period or day does a student have to miss before they are "absent?" Lack of common agreement leads to problems when the data are then being used to answer policy questions. Similarly, the SEA and LEAs may calculate exit dates from particular academic programs differently. If one agency uses end-of-school-year while another defines it as a student completing program objectives (which could carry over into a new school year), then data collected from the LEA may not accurately address the goals or intentions of the SEA. By developing clear data definitions and business rules, NSD better communicates these nuances to the SEA and ensures that data are used accurately.

NSD also communicates with the SEA about limitations of the data. Often, data requests or requirements from the SEA do not align with the LEA's business practices, or they put an undue burden on the LEA's data staff that is not balanced by the SEA's particular need. NSD has worked with the SEA to clarify data expectations and limitations. They try to determine the value of the question being asked and identify whether there are adequate data at the LEA level to answer it. Through establishing better and stronger data governance, they now have a vehicle with



which to communicate about the practicalities of data collections and reports, and what can be reasonably implemented.

As a result of data governance, the LEA now has a much better idea of what the SEA is looking for when they request data, and the SEA has a better idea of what is possible. They can compromise and focus on what data can be accessed and used and whether the data are appropriate to answer specific policy questions.

These relationships allow larger LEAs like NSD to support the many smaller LEAs in the state, which have much more limited staff and mobility. In states like Washington, smaller LEAs often rely on larger LEAs to advocate on their behalf. NSD leaders urge agencies developing a data governance model to consider the smaller LEAs and think about ways to include their perspectives. Leaders cannot assume that all solutions or processes will automatically scale down.

After 15 years...


NSD has faced several challenges while developing its data governance program. A prominent challenge is ensuring that all stakeholders know the value of data governance and adhere to data governance regulations and processes. Though governance is defined in state statute, some state-level stakeholders ignore established processes, such as timelines for data requests, and there is little an LEA can do in response. Similarly, NSD has found that other groups can see data governance as onerous and try to circumvent the process; these may be researchers, advocacy groups, or other potential users of the data.

OSPI's data governance program helped improve communication around data and reduced data burdens. Establishing a data governance group that facilitates communication with stakeholders who request data (for example, SEA staff) has created a mechanism for problem solving and improved understanding. Additionally, OSPI has eliminated some data collections that were found to be duplicative. They have also retired particular elements for the same reasons. Overall, OSPI's data governance program has improved processes for both the SEA and LEAs, saving them time, improving their relationships, and minimizing the burden of state reporting.

Loudoun County, Virginia: Creating a Data Governance Structure

Loudoun County Public Schools (LCPS) initiated its data governance program through its Department of Digital Innovation as a cross-functional data team composed of members from each department in the LEA. It was launched in conjunction with the implementation of the LEA's data analytics and visualization tool. The data governance program grew out of a recognized need for a common language, an approved and vetted set of data, and the understanding that data quality requires that resolution practices must be defined, documented, and adhered to.

Members of the team were selected based on their experience with data science and represent all departments across the LEA—the team includes SMEs, statisticians, report writers, and analysts. They were identified by peers as SMEs or as skillful with data analysis and nominated



by their department leadership teams. Thirty people were invited to a half-day data summit, where they discussed challenges without ever using the term “data governance.” Over the next year the group met once a month physically, held biweekly “lunch and learn” sessions for technical assistance, and held several meetings virtually. Staff roles varied across the board and ranged from directors to support staff. They framed their work around the implementation of a visualization and analytics tool, provided training on the product, and embedded data management strategies into professional development and dashboard design. They implemented an inquiry-based approach of focusing questions on data and dilemmas that leaders (school and central office) faced. They aimed to deliver quick wins by publishing dashboards that were timely and meaningful to stakeholders, and then worked to modify them based on feedback.

The LEA’s data governance approach is flat—they do not have committees or subcommittees. With the varied staff represented, the group approaches issues from multiple perspectives. They use a webpage creation tool to document processes and technical libraries and share the information with everyone on the team. This approach helps avoid delays and allows all members of the team equal authority. Because the LEA has had a number of high-level leadership changes, the team constantly communicates the data governance plan. Communication leads to greater understanding and more timely resolution of data needs and questions.

LCPS data leaders state that a deeper understanding of data elements has led to a greater proficiency in analysis skills. Offices report fewer instances where data consumers in the district need assistance with interpretation and analysis. Stakeholders can request more refined dashboards and their level of inquiry is at a deeper level. They have found that the practice of embedding data governance into the development cycle for any requests for data, analysis, or creation of visualizations has been the most effective practice, because these are now integrated instead of separate processes.

Solving a Definition Problem via Data Governance

Of all requests LCPS receives, the most frequent was for “enrollment data,” however requestors were specifically asking for different things. Using the data dictionary created as part of the governance process, the team determined three different definitions of “enrollment data” to be used for different needs in the LEA:

- Enrollment data needed for internal budgeting. This is officially documented as internal fall membership data reports of enrollment by school, by grade, by program.
- Enrollment data needed for technology licensing requests. This is officially documented as real-time enrollment as of the date the license is purchased. This takes into account ongoing mobility of students within and outside of the district.
- Enrollment data needed for program staffing changes. This is officially documented as the projected spring membership and allows the district flexibility in staffing for the fall, which is historically lower than in the spring.

In Retrospect...

Many in the district express gratitude for the data governance program and appreciate its clarity and transparency. The data governance team improved response time for data requests, and they have greater confidence in their data as the responses to stakeholders come from vetted data sets used for the right purpose. However, data leaders also note that fear of transparency and concerns of data privacy continue to be challenges. If a department “owns” data in their tracking system that the data governance team wants to access, they have not resolved the issues at the leadership level of how the information will be used and how the analysis of the data will be shared.

LCPS data leaders advise those creating and implementing a data governance program to approach governance from both the top down and the bottom up. Moreover, agencies embarking on this type of initiative should be aware that the work becomes embedded in the operational and strategic actions and requires agility and ongoing iterations.

Clayton County, Georgia: Establishing a Clear System for Data Requests

With more than 55,000 students, Clayton County Public Schools is the fifth-largest LEA in Georgia. Until recently, the LEA did not have a clear data governance process for managing data requests, whether from researchers or other interested parties. Therefore, when the current Coordinator of Student Information Systems joined the LEA in 2015, she collaborated with the Interim Director of the Research, Evaluation, Assessment, and Accountability Office to create a process whereby data requests are managed centrally and the LEA establishes memoranda of understanding (MOUs) for data sharing.

Requirements for Data Requests

Those requesting data are first directed to the LEA’s website, which provides extensive information about seeking data from the LEA (https://www.clayton.k12.ga.us/departments/research_evaluation_assessment_and_accountability/conducting_research_in_ccps). The website includes information on a webinar that requestors must attend in order to submit a data sharing application.

Once an application for data sharing is submitted to the LEA, the data request is reviewed by Clayton County’s nine-person research review board. The review board uses criteria established by the Department of Health and Human Services to evaluate requests, and considers issues such as whether the research references the LEA’s name, and how the request will serve the LEA (approval to use LEA data requires a specific benefit to the LEA). The research review board meets three times a year, in the fall, winter, and spring. Requestors receive a determination within 30 days of the review board meeting. The schedule and timeline are posted on the website, so applicants are aware of appropriate times to submit and expected wait times for response.

If a request is approved, the requestor must complete an MOU that delineates the details of the data sharing agreement. Clayton County has a standard MOU that can be modified according

to the request, and it includes a confidentiality agreement, establishes privacy requirements, and identifies exactly what information is required for the LEA to produce and share the data. It also includes requirements for data destruction. Once the Research, Evaluation, Assessment, and Accountability Office and the data requestor have both signed off on the MOU, it is shared with the IT team, who then communicate with the entity or vendor to ensure safe data transmission.

The review process greatly benefits the IT team. Because it is such a large LEA, Clayton County receives many data requests. Having the research review board evaluate requests significantly reduces the burden on the IT team, and ensures that Family Educational Rights and Privacy Act (FERPA) requirements are followed. The district also has a new Equity and Compliance department that ensures necessary data security. In addition, the focus on data privacy and data governance streamlines the data request process, even for in-house requests. For example, some requestors would try to circumvent established processes (deeming them too onerous) and request data directly from the SIS. These review processes prohibit this from happening.

Clayton County has established MOUs with other LEAs and Georgia State University to facilitate research as part of the Metro Atlanta Policy Lab for Education, or MAPLE (<https://gpl.gsu.edu/metro-atlanta-policy-lab-for-education/>, <https://news.gsu.edu/2018/08/20/georgia-policy-labs-second-year-begins-with-new-staff-partnerships-and-research/>). MAPLE does research that aggregates data from the different metro Atlanta school districts. MAPLE has a dedicated server for Clayton County data with a built-in data destruction code.

Moving Forward

Clayton County continues to look at more innovative ways to transmit secure data and is also making technical progress to reduce man hours. The district is moving toward a big data framework, which will allow more work with predictive measures, making more of the team's work proactive rather than reactive. They are also evaluating their current processes, to identify what is not working and find opportunities to collaborate with other agencies.

Putnam County, West Virginia: Working with the SEA to Improve Data Governance

Putnam County's current data governance program was created by the West Virginia Department of Education, working with a data governance committee made up of five county representatives and key stakeholders from various departments. The creation of the data governance program was a product of the state's federal SLDS grant, which has greatly improved the data quality and reporting processes for both the LEAs and the SEA.

Before implementing the data governance program, the LEA worked under a system that was great at collecting data but inflexible when it came to extracting or reporting out data. During collection periods, the LEA staff would submit data, which the state would check and return with any errors indicated. The LEA would fix these errors and resubmit the data, but because some of the data might have changed or updated after the first submission, new errors could occur. Depending on the severity of the error, the districts would occasionally need to submit multiple times. This process resulted in lengthy, extended reporting periods, which left the



district unable to update particular areas of data. This meant that some data requirements could be delayed for both SEA and LEA deadlines.

With the SLDS and updated data reporting system, the SEA has now added real-time data edits, which are used nightly to check data submissions for errors and send a status report back to each LEA. This has significantly decreased burdens on LEA data staff, who can now check errors daily, fix them, and run reports. These improvements ready the LEA to submit data on an ongoing basis. The greatest result for all LEAs and the SEA combined is that data are more accurate and current at any time. In turn, this means that the data are a good source for decisionmaking.

Changing Perspectives on Data

West Virginia provided Putnam County and all LEAs in the state with software that allows LEAs to do their own data checks in addition to those provided by the SEA. This flexibility to identify and run data checks without having to request them from the SEA, which involves waiting for SEA approval and implementation, helps the LEA quickly fix data errors.

This improvement in data quality within the district helps stakeholders and has changed perspectives on data and their usefulness. Superintendents, principals, administrators, counselors, and others have greater trust in the accuracy of the data, they can now use the data in a more analytical way to inform their decisions, and they have a greater understanding of the benefits of the data. As the SEA looks to update their system, data loss is not a cause for concern; staff trusts that the data will be converted. Beyond district stakeholders, the SEA is now more confident in LEA data, and is therefore more willing to use them.

Leveraging Early Adopters

One way Putnam and other counties in the state increased the confidence of stakeholders in the data and in the data governance program was by asking for volunteers to work with the improved system to answer their questions and meet their needs. These early adopters then shared their positive experiences with colleagues, which increased buy-in for regular data engagement and use. The LEAs now find that most stakeholders support the data governance program because they see how the improved data systems have resulted in more accurate, timely, and useful data for all.

Glossary

- **Common Education Data Standards (CEDs):** an education data management initiative whose purpose is to streamline the understanding of data within and across P-20W institutions and sectors.⁹
- **data dictionary:** defines the data elements collected and stewarded by an agency. Sometimes contains more metadata (for example, data types, lengths, uses/mappings to products the data support).
- **data element:** An atomic unit of data that has precise meaning or precise semantics that can be defined and measured.
- **data inventory:** defines all data sources available to an agency, along with ownership details, descriptions, priorities and other relevant information.
- **data owners:** staff such as program area directors, subject matter experts (SMEs), or policy staff who have high-level authority over specific data elements or sets of data, and who are accountable for the quality of those data.
- **data privacy:** refers to the legal and ethical requirements for protecting the confidentiality of data. These requirements involve: defining which data need to be protected, such as personally identifiable information (PII) or sensitive data; developing policies that define acceptable uses for the data; identifying authorized users of the data; protecting data that are released in public reports; and destroying data when they are no longer needed. See the *Forum Guide to Education Data Privacy*¹⁰ for more information.
- **data security:** refers to protecting the technical aspects of how data are collected, stored, and transferred through an information technology infrastructure. See the *Forum Guide to Education Data Privacy*¹¹ for more information.
- **data stewards:** Individuals responsible for ensuring the quality of statistical information generated by an organization. Data stewards also generally assume responsibility for enhancing the information reporting process through staff development and by sharing data expertise with the various offices and programs that produce data and information in an organization.
- **EDFacts:** a U.S. Department of Education initiative to collect, analyze, and promote the use of high-quality, pre-kindergarten through grade 12 data. EDFacts centralizes performance data supplied by state education agencies (SEAs) with other data assets, such as financial grant information, within the Department to enable better analysis and use in policy development, planning and management.
- **Family Educational Rights and Privacy Act (FERPA):** federal law that protects the privacy of student education records.

9 <https://ceds.ed.gov/whatIsCEDs.aspx>

10 https://nces.ed.gov/forum/pub_2016096.asp

11 https://nces.ed.gov/forum/pub_2016096.asp

- **Freedom of Information Act (FOIA):** United States federal law that provides the public the right to request access to records from any federal agency. FOIA also requires agencies to proactively post online certain categories of information, including frequently requested records.¹²
- **maturity model:** a tool that is used to develop, assess and refine an expansive program, which allows an agency to consistently measure the state of a program over time.
- **metadata:** structured information that describes, explains, locates, or otherwise makes it easier to retrieve, use, or manage information. Metadata provide the context in which to interpret data and information.
- **Statewide Longitudinal Data Systems (SLDS):** systems intended to enhance the ability of states to efficiently and accurately manage, analyze, and use education data, including individual student records.¹³
- **sustainability:** the ability of a program, process, or agency to continue to function effectively, particularly in the face of changing or evolving tasks, goals, resources, or staffing structures.

12 <https://www.foia.gov/about.html>

13 https://nces.ed.gov/programs/slds/about_SLDS.asp

Appendix A: California AB 1584 Additional Requirements to Contracts with Third Party Vendors¹⁴

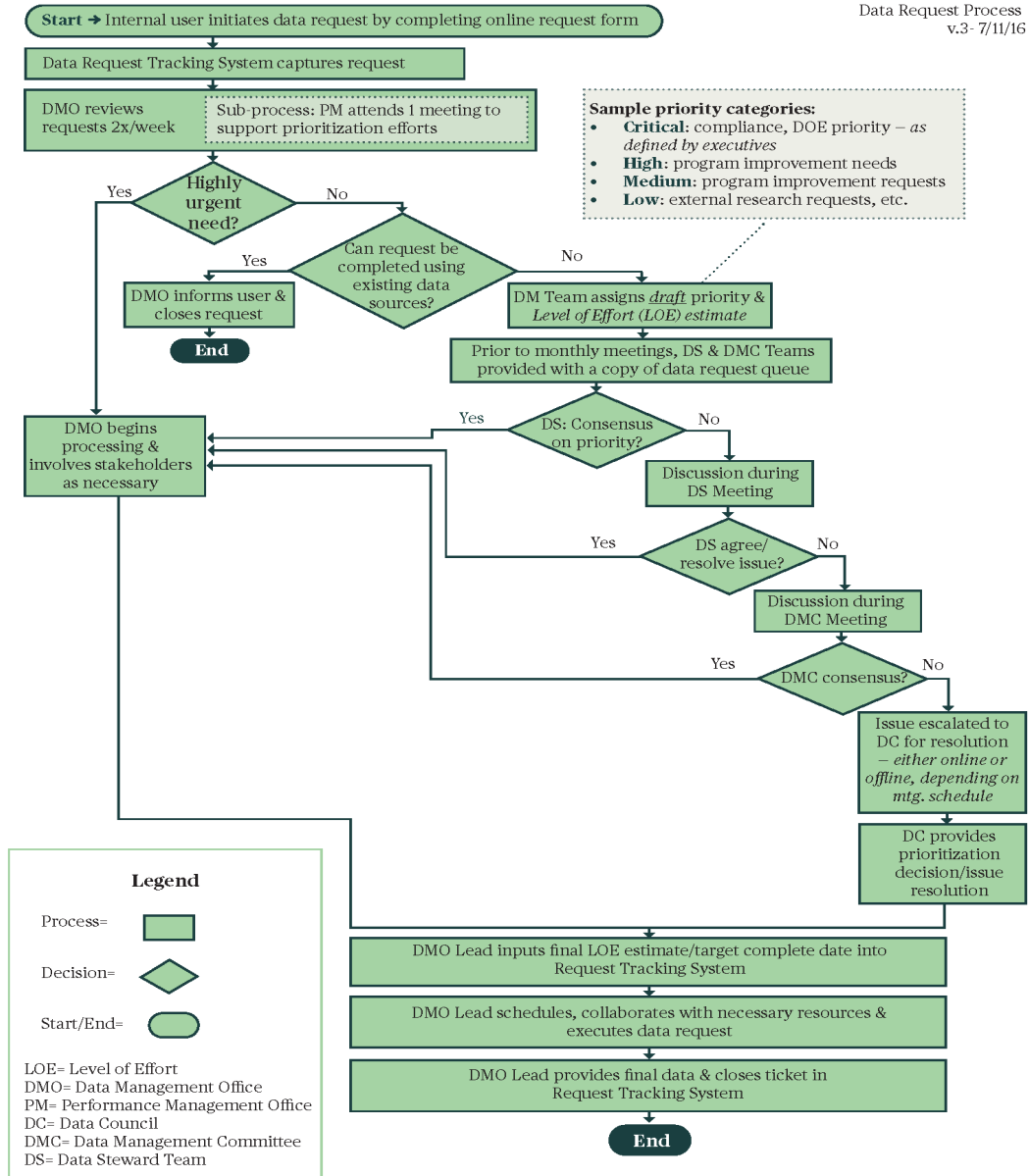
- A statement that pupil records continue to be the property of and under the control of the school district;
- A description of the means by which pupils may retain possession and control of their own pupil-generated content, if applicable, including options by which a pupil may transfer pupil-generated content to a personal account;
- A prohibition against the third party using any information in the pupil record for any purpose other than those required or specifically permitted by the contract;
- A description of the procedures by which a parent, legal guardian, or eligible pupil (18 years or older) may review personally identifiable information in the pupil's records and correct erroneous information;
- A description of the actions the third party will take—including the designation and training of responsible individuals—to ensure the security and confidentiality of pupil records;
- A description of the procedures for notifying the affected parent, legal guardian, or eligible pupil (18 years or older) in the event of an unauthorized disclosure of the pupil's records;
- A certification that a pupil's records shall not be retained or available to the third party upon completion of the terms of the contract and a description of how that certification will be enforced (NOTE: This requirement does not apply to pupil-generated content if the pupil chooses to establish or maintain an account with the third party for the purpose of storing that content, either by retaining possession and control of their own pupil-generated content, or by transferring pupil-generated content to a personal account.);
- A description of how the district and the third party will jointly ensure compliance with the federal Family Educational Rights and Privacy Act (20 U.S.C. Section. 1232g);
- A prohibition against the third party using personally identifiable information in pupil records to engage in targeted advertising.

¹⁴ AB 1584, Buchanan (2014)

Appendix B: New Jersey Department of Education's Data Request Process Flowchart

Appendix B: New Jersey Department of Education's Data Request Process Flowchart

Data Request Process
v.3- 7/11/16



Reference List

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Privacy Technical Assistance Center. (2011). *Data Governance Checklist*. Revised June 2015. Retrieved March 25, 2020 from <https://studentprivacy.ed.gov/resources/checklist-data-governance>

Tassey, M. & Gray, E. (2019, July 23). “FERPA Considerations: Data Retention & Destruction.” Presentation at the 2019 National Forum on Education Statistics Meeting, Washington, DC.

Related Resources

Statewide Longitudinal Data System (SLDS) Resources

Data Governance Toolkit

<https://slds.grads360.org/#program/data-governance>

This website provides an overview of data governance and its central processes and is intended to support SLDS teams across the states. The different sections include an overview that defines and describes data governance, a section describing how data governance programs tend to be structured, a section that explains the key documentation needed for data governance (for example, a clear governance policy and a data governance manual), and a list of related resources.

Interagency Data Governance: Roles and Responsibilities

<https://slds.ed.gov/#communities/pdc/documents/17093>

This guide defines the processes and structures that are key to data governance, particularly when data are being shared among agencies. It discusses the leadership roles and committees needed to support the process, as well as the tasks handled by each of these individuals or groups.

Single Agency Data Governance: Roles and Responsibilities

<https://slds.ed.gov/#communities/pdc/documents/17092>

This guide defines the processes and structures that are key to data governance, focusing on processes for data within a single agency. Like the reference described above, it discusses the leadership roles and committees needed to support the process, as well as the tasks handled by each of these individuals or groups.

P-20W+ Data Governance: Tips from the States

<https://slds.ed.gov/#communities/pdc/documents/2717>

This document offers guidance and suggestions for the development and maintenance of data governance programs across multiple educational levels, from early childhood programs to higher education and workforce.

Early Childhood Data Governance in Action

<https://slds.ed.gov/#communities/pdc/documents/4565>

This document discusses data governance within and among early childhood programs in states (for example, Head Start, Early Intervention, and state preschool programs).

Privacy Technical Assistance Center (PTAC) Resources

Data Governance and Stewardship

<https://studentprivacy.ed.gov/resources/issue-brief-data-governance-and-stewardship>

This brief explains how agencies can successfully manage complex data systems by establishing a comprehensive data governance approach. In particular, it is intended to show data teams how a governance structure can help to ensure confidentiality, integrity, and availability of the data by reducing data security risks due to unauthorized access or misuse of data.

Data Governance Checklist

<https://studentprivacy.ed.gov/resources/checklist-data-governance>

This checklist summarizes the key data privacy and security components of a data governance program designed to help ensure the individual privacy and confidentiality of education records and lists specific best-practice action items that state and local education agencies (SEAs and LEAs) can take.

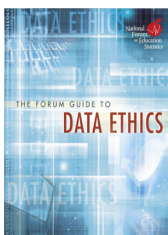
National Forum on Education Statistics Resources



Forum Guide to Building a Culture of Quality Data: A School and District Resource

https://nces.ed.gov/forum/pub_2005801.asp

This guide was developed by the Forum's Data Quality Task Force to help schools and school districts improve the quality of data they collect and to provide processes for developing a "Culture of Quality Data" by focusing on data entry—getting things right at the source.



Forum Guide to Data Ethics

<https://nces.ed.gov/pubs2010/2010801.pdf>

While laws set the legal parameters that govern data use, ethics establish fundamental principles of "right and wrong" that are critical to the appropriate management and use of education data in the technology age. This guide reflects the experience and judgment of experienced data managers; while there is no mandate to follow these principles, the authors hope that the contents will prove a useful reference to others in their work.



Forum Guide to Education Data Privacy

https://nces.ed.gov/forum/pub_2016096.asp

The Forum Guide to Education Data Privacy was developed as a resource for SEAs and LEAs to use in assisting school staff in protecting the confidentiality of student data in instructional and administrative practices. SEAs and LEAs may also find the guide useful in developing privacy programs and related professional development programs.



Forum Guide to Metadata: The Meaning Behind Education Data

https://nces.ed.gov/forum/pub_2009805.asp

This document offers best practice concepts, definitions, implementation strategies, and templates/tools for an audience of data, technology, and program staff in state and local education agencies. It is hoped that this resource will improve this audience's awareness and understanding of metadata and, subsequently, the quality of the data in the systems they maintain.



Forum Guide to Reporting Civil Rights Data

https://nces.ed.gov/forum/pub_2017168.asp

The Forum Guide to Reporting Civil Rights Data presents a variety of effective methods through which local education agencies (LEAs) report civil rights data to the U.S. Department of Education's Office for Civil Rights. In addition, the guide provides examples of how state education agencies can voluntarily help their LEAs with Civil Rights Data Collection (CRDC) reporting.



Forum Guide to Supporting Data Access for Researchers: A Local Education Agency Perspective

https://nces.ed.gov/forum/pub_2014801.asp

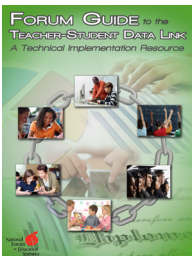
This publication recommends a set of core practices, operations, and templates that can be adopted and adapted by LEAs as they consider how to respond to requests for both new and existing data about the education enterprise.



Forum Guide to Supporting Data Access for Researchers: A State Education Agency Perspective

https://nces.ed.gov/forum/pub_2012809.asp

This guide recommends policies, practices, and templates that can be adopted and adapted by state education agencies as they consider how to most effectively respond to requests for data about the education enterprise, including data maintained in longitudinal data systems.



Forum Guide to the Teacher-Student Data Link: A Technical Implementation Resource

https://nces.ed.gov/forum/pub_2013802.asp

This publication is a practical guide for implementing a teacher-student data link (TSDL) that supports a range of uses at the local, regional, and state levels. The guide addresses the considerations for linking teacher and student data from multiple perspectives, including governance, policies, data components, business rules, system requirements, and practices.



Forum Guide to Technology Management in Education

https://nces.ed.gov/forum/tec_intro.asp

From classrooms to state and local education agencies (SEAs and LEAs), rapid technological advances are impacting and reshaping the education landscape. In order to successfully navigate this changing world and leverage technology to improve educational outcomes, it is critical that education agencies implement a framework and process when making decisions about technology.

SEDCAR
(Standards for
Education Data
Collection and
Reporting)

December 1991

Standards for Education Data Collection and Reporting (SEDCAR)

https://nces.ed.gov/forum/pub_1991_92022.asp

This document describes education data collection and reporting standards through the combined efforts of data providers, producers, and users at the local, state, and federal levels. The standards do not attempt to prescribe the types of data that should be collected. Rather, they are intended to serve as a guide to the key phases of data collection and reporting.



Traveling Through Time: The Forum Guide to Longitudinal Data Systems, Book I: What is an LDS?

https://nces.ed.gov/forum/pub_2010805.asp

This document, the first installment of a four-part Forum Guide series on longitudinal data systems (LDS), focuses on the fundamental questions of what an LDS is (and what it is not), what steps should be taken to achieve a sound system, what components make up an ideal system, and why such a system is of value in education.



Traveling Through Time: The Forum Guide to Longitudinal Data Systems, Book II: Planning and Developing an LDS

https://nces.ed.gov/forum/pub_2011804.asp

This document discusses the critical planning and development phases of an LDS project. It guides readers through the process of engaging a wide variety of stakeholders to create a vision for an LDS, build support for the undertaking, develop the system, and gauge how well it is meeting intended goals.



Traveling Through Time: The Forum Guide to Longitudinal Data Systems, Book III: Effectively Managing LDS Data

https://nces.ed.gov/forum/pub_2011805.asp

This document addresses the management of data. It focuses primarily on data governance, providing not only a definition and overview of the topic, but also a practical framework to help education agencies implement an effective data governance structure and process to ensure the quality and utility of the data.



Traveling Through Time: The Forum Guide to Longitudinal Data Systems, Book IV: Advanced LDS Usage

https://nces.ed.gov/forum/pub_2011802.asp

This document addresses issues important to the effective use of longitudinal data. It focuses on turning student-level longitudinal data into actionable information at all levels of the education system.

Additional Resources Developed by States¹⁵

California: Educational Data Governance (EDGO)

<https://www.cde.ca.gov/ds/ed/>

California's website describes EDGO, the state's governance program. It provides history of the program, the governance model, and program goals. It also offers resources, tips, and tools to help data teams establish and maintain data governance at the local level.

Colorado: Data Governance

<https://www.cde.state.co.us/cdereval/datagovernance>

Colorado's website defines data governance and provides a list of the data owners of particular data categories and elements in the state.

Delaware: Data Management and Governance

<https://www.doe.k12.de.us/domain/363#calendar7122/20180918/month>

Delaware's website highlights the tasks of the data governance staff and offers information about the state's data policies and data dashboard.

Illinois: Data Governance Program

https://www.isbe.net/Documents/data_governance_prog.pdf

This document describes the structure and goals of the state's data governance committee, including its scope of responsibilities. It also describes the role of the data request review board, which is responsible for management of data requests for personally identifiable information from external parties such as researchers.

Rhode Island: Data Governance

<http://www.ride.ri.gov/InformationAccountability/RIDEDataResources/DataGovernance.aspx>

Rhode Island's website describes the state's three-tiered governance model (executive committee, data governance board, and data steward work group). It discusses the key roles of each group, as well as the goals and objectives of the program.

Vermont: Data Governance

<http://education.vermont.gov/data-and-reporting/data-governance>

Vermont's website discusses the state's vision for data use, and the elements of the data governance plan designed to ensure data quality, effectively communicate data, and protect student privacy.

¹⁵ Note: These resources are provided to illustrate the range and varying complexity of data governance resources across states.

Washington: K-12 Data Governance

<https://www.k12.wa.us/about-ospi/workgroups-committees/currently-meeting-workgroups/k-12-data-governance>

Washington's website highlights the state's data governance work group, and provides information about the group's membership, authorizing legislation, and meetings.

Wyoming: Data Governance

<https://edu.wyoming.gov/data/data-governance>

Wyoming's website notes the creation of the state's data governance committee and offers documents related to data security policies.

Other Resources

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Vance, A. (2016). Data Privacy Laws Follow Lead of Oklahoma and California. *State Education Standard*, 16(2), 25-27, 33. Retrieved March 27, 2020 from <https://eric.ed.gov/?id=EJ1103487>