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Education Data Governance Framework

Education Data Governance Collaborative

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Importance of Data Governance to Education Organizations

What is Data Governance?

Data governance is the set of practices, procedures, and policies that an organization uses to define, gather, and maintain its data assets with a focus on improving the quality and usability of data assets and managing any associated risks.

Data governance occurs in every organization, even in the absence of a formal data governance program. There are four domains essential to successful and sustainable data governance programs: leadership and strategy, security and privacy, data management, and data use and sharing.

The benefits of being effective in these four domains of data governance are compounding. Clear data governance strategy and engaged leadership enables the entirety of the organization to participate in data governance through clear best practices based on leadership defined and managed policies, roles, and responsibilities. Compliance with state and federal privacy and security standards are mandated, but such standards only set minimum requirements. Adopting relevant and meaningful privacy and security standards ensures the privacy of those served by the organization, even in an ever-evolving data and technology landscape. Promoting consistency and accountability in data management practices ensures that an organization's data is accurate, reliable, and accessible. Strong data use and sharing practices ensure the education organization can fulfill reporting requirements and utilize its data to create a detailed and nuanced understanding of the services it offers.

Data governance requires organizational support and engagement that must be put into action with clear purpose and intent. The benefits of that effort may not be immediate; however, the more consistently that effective data governance is used, and the longer it is kept going, the greater the returns on those investments of time, energy, and support.

The Education Data Governance Collaborative

The Education Data Governance Collaborative is a group of education data professionals who are collaborating to solve data governance challenges effectively, efficiently, and at scale.

Vision

A national collaborative where education agencies, vendors, and technical assistance providers work together to solve data governance challenges effectively, efficiently, and at scale.

Mission

To develop and maintain a data-standard-agnostic governance ecosystem that provides education agencies with a common governance framework, self-assessment and maturity tools, and a shared community for ongoing collaboration and exchange of best practices.

Deliverables

To support its mission and vision, the Education Data Governance Collaborative is developing the following deliverables.

- Data governance framework: A set of common terms and concepts mapping out the domains, subdomains, and capabilities associated with data governance
- Self-assessment rubric: A future deliverable aligned to the framework to assist organizations in assessing the maturity of a data governance program
- Implementation guide: A future deliverable to support the implementation of the framework and self-assessment rubric
- Resource repository: A future deliverable aligned to the framework to facilitate sharing policies, practices and other relevant artifacts among organizations

To ensure the development of these deliverables and the persistence of the collaboration, the Collaborative will develop a long-term sustainability plan and road map to ensure the continued success of the project.

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- Presentations and discussions related to data governance at CCSSO's **Education Information Management Advisory Collaborative (EIMAC)** conferences.

The Education Data Governance Framework

This Education Data Governance Framework is the initial deliverable developed by the Education Data Governance Collaborative. It provides common language for the discussion of data governance by education professionals. The framework serves as a practical resource for state and local education agencies, longitudinal data system teams, and the partners of such organizations as they build, assess, and mature in their data governance programs.

The framework is organized into four **domains**: Leadership and Strategy, Security and Privacy, Data Management, and Data Use and Sharing. These domains represent the foundational pillars required to establish and sustain robust data governance programs within an organization.

Each domain is made up of **subdomains** that break down broad data governance concepts into targeted areas, helping organizations understand where policies, processes, and roles are required.

Within each subdomain are a set of **capabilities** describing actions to mature and maintain a data governance program. Capabilities define the concrete activities, structures, and competencies necessary to manage data as a strategic asset while ensuring it is protected, reliable, and used appropriately.

1.0 Leadership and Strategy	2.0 Security and Privacy	3.0 Data Management	4.0 Data Use and Sharing
1.1 Oversight	2.1 Data Access	3.1 Data Lifecycle Management	4.1 Data Stewardship
1.2 People Leadership	2.2 Data Security	3.2 Data Infrastructure and Operations	4.2 Data Dissemination
1.3 Strategic Planning	2.3 Data Privacy	3.3 Data Documentation and Element Management	4.3 Research and Evaluation
1.4 Research	2.4 Compliance	3.4 Data Standards and Interoperability	4.4 Strategic Alignment and Continuous Improvement

1.0 Leadership and Strategy

The Leadership and Strategy domain provides guidance for how an organization's leadership teams provide the necessary structures for data governance to exist and be functional within the organization. This includes clearly stating who is responsible for which aspects of the data governance program and how decisions are made to ensure a sustainable data governance program for the organization at large.

- 1.1 **Oversight:** How an organization monitors adherence to and relevance of its data governance program, including how an organization handles and uses data, along with the people and processes that support compliance with relevant regulations, rules, and laws.
 - 1.1.1 **Roles and Responsibilities:** Clearly document and communicate who participates in the data governance program and their duties and obligations based on the organization's data use and requirements. Hold individuals and groups accountable for their responsibilities within the program.
 - 1.1.2 **Data Ownership:** Clearly designate accountable individuals or offices for every data asset and grant those individuals or offices with the authority needed to make decisions about how data is collected, maintained, accessed, and used. Leadership reinforces ownership expectations by establishing transparent decision-making guidance, supporting data owners in their roles, and ensuring accountability for data-related outcomes across the organization.
 - 1.1.3 **Data Stewardship:** Ensure that appropriate staff are assigned to support the day-to-day maintenance, quality, and integrity of data assets and empower data stewards to work in close partnership with data owners. Leadership enables stewardship by recognizing stewards' programmatic or technical expertise, integrating their input into data-related decisions, and supporting their role in the consistent and reliable management of the organization's data assets.
 - 1.1.4 **Defining Rules:** Set clear actionable guidance that enables individuals and groups to identify, implement, and enforce consistent practices for how data are collected, stored, used, shared, and maintained.
 - 1.1.5 **Change Management:** Maintain and adhere to a structured, documented approach to leading the organization through changes that are transparent, foster buy-in, and actively engage all personnel who may be directly or indirectly affected by potential changes.
 - 1.1.6 **Industry Awareness and Capacity:** Maintain awareness and familiarity with current industry technologies, services, and relevant standards and provide meaningful guidance on options that support the organization's priorities. Ensure implementation and adoption of new technologies or data standards are technically sound, aligned with the organization's goals, secure, and compliant with all relevant laws and regulations.
 - 1.1.7 **Data Technology Stack:** Determine the minimum functional requirements of the technology that supports the organization and meet those minimum requirements.

- 1.1.8 **Data Quality Oversight:** Empower the creation and maintenance of organizational data quality guidelines and the associated policies and rules. Regularly monitor data quality using defined metrics that include steps for continuous improvement and the escalation of issues as they arise.
- 1.1.9 **Documentation:** Provide clear expectations for what data asset information must be documented, how it should be recorded, and why it matters. Maintain required documentation that is clear, consistent, current, and contains essential details.
- 1.1.10 **Financial Oversight:** Maintain an up-to-date budget for the data governance program and confirm that all parts of the organization that are responsible for data governance costs are allocating and using funds in accordance with expectations. Actively plan for future needs, changing costs, and fluctuations in funding.
- 1.1.11 **Sustainability:** Ensure data governance is durable and effective over time by embedding governance expectations into standard roles, operating practices, and decision-making processes, thereby minimizing ongoing resource burden and supporting efficient change and continuous improvement.
- 1.2 **People Leadership:** How an organization ensures that all staff play an active role in sustaining a strong data governance program.
 - 1.2.1 **Ensuring Buy-in:** Build and sustain stakeholder support, commitment, and participation by aligning data initiatives with stakeholder needs and values. Clearly communicate benefits and involve stakeholders in decision-making processes. Foster trust and maintain clear expectations for accountability across functional teams.
 - 1.2.2 **Communication:** Intentionally and transparently exchange information across the organization to ensure alignment, accountability, and shared understanding of data policies, roles, and decisions. Apply communication practices that build trust, support organizational growth, and enable the effective implementation of data governance initiatives.
 - 1.2.3 **Engaging Stakeholders within Framework:** Make well-informed decisions through a structured, collaborative process. Follow clear processes to identify a person or group responsible for leading the decision-making and engage subject-matter experts and representatives from all sectors of the organization to make decisions that reflect organizational goals and strategies.
 - 1.2.4 **Staffing and Performance:** Staff the data governance program with qualified people who reflect all sectors and functions of the organization. Provide ongoing training and professional development. Set clear expectations so each person understands their responsibilities and monitor progress to confirm they fulfill their obligations.
 - 1.2.5 **Professional Development:** Provide and support professional development tools, resources, and services that strengthen the skills necessary to work with, interpret, and understand data across the organization.
- 1.3 **Strategic Planning:** How an organization supports continuous improvement, innovation, and the effective and ethical use of data to achieve desired outcomes throughout the organization.

- 1.3.1 **Vision and Mission:** Set a clear purpose statement and long-term goals for how the organization will use the data. Identify who is responsible for data-specific goals and explain how success will be measured. Make sure that all goals will support the organization's overall vision and mission.
- 1.3.2 **Data Scope:** Identify which organizational needs require data and what types of data are most helpful in addressing those needs. Be aware of which needs are driven by organizational vision, daily operations, or external requirements such as compliance/regulations. Judge and prioritize how each need is met based on this broader awareness.
- 1.3.3 **Organizational Data Literacy:** Build a culture in which people understand and use data well and where they promote shared responsibility for keeping data accurate and reliable. Support good decisions by improving data quality, protecting privacy, and keeping data secure.
- 1.3.4 **IT Governance and Management:** Collaborate with technology leadership to maintain a shared understanding of the organization's vision and mission. Let this shared understanding guide how data and technology are used to support the vision and mission. Make sure that data and technology policies fit together and are reviewed on a regular basis with technology leaders.
- 1.3.5 **Partner Governance and Management:** Collaborate with the leadership of all partners or collaborating organizations to maintain a shared understanding of the organization's vision and mission. Make sure that data and technology policies fit together and are reviewed on a regular basis so updates can be made based on the evolving needs of the organization and its partners.
- 1.3.6 **Continuous Improvement:** Monitor organizational data use and maintenance for opportunities to create efficiency and increase the value of data assets. Develop partnerships with other entities to foster learning opportunities. Proactively address deficits in knowledge, skills, staffing, and technology on a rolling basis.
- 1.4 **Research:** How an organization decides what research is undertaken and approved, and how it is overseen, conducted, disseminated, and used to inform decision-making, the public, and partners.
 - 1.4.1 **Define the Purpose and Guiding Principles for Research:** Determine the role of research in advancing the agency's mission. Emphasize principles such as integrity, transparency, utility, and equity in all research efforts.
 - 1.4.2 **Maintain a Prioritized Research Agenda:** Regularly align research priorities with organizational vision and mission. Utilize stakeholder input to identify high-impact research questions.
 - 1.4.3 **Performance and Policy:** Embed data use and research in performance management and policy development.

2.0 Security and Privacy

The Security and Privacy domain encompasses the policies and practices that relate to monitoring and limiting access to data and unauthorized disclosure. This domain addresses essential privacy, security, and compliance concepts and can also support more detailed security and privacy frameworks (e.g., NIST 800-53).

- 2.1 **Data Access:** How an organization authorizes and enforces access to its data systems, including setting appropriate privileges, separation of duties, and monitoring.
 - 2.1.1 **Identity Management:** Manage a framework of internal controls that identify who is accessing the organization's data and through what means.
 - 2.1.2 **Role Management:** Maintain different levels of system access as well as assigning, changing, or removing users from said levels.
 - 2.1.3 **Monitoring Access:** Regularly review existing accounts to ensure that their access and privileges align with their current duties and responsibilities.
- 2.2 **Data Security:** How an organization protects data from unauthorized access, misuse, alteration, or destruction, ensuring that data remains confidential, integral, and available as intended.
 - 2.2.1 **Security Measures:** Maintain technical, physical, and administrative safeguards to ensure appropriate data access and review them regularly.
 - 2.2.2 **Data Classification:** Categorize the organization's data based on risk, legal, ethical, and compliance factors for confidentiality, integrity, and availability.
 - 2.2.3 **Data Inventory:** Maintain and regularly review an inventory of the organization's data assets, including description, location, and points of contact.
 - 2.2.4 **Data Retention/Destruction:** Maintain retention and destruction schedules in accordance with legal and organizational regulations and enforce retention and destruction policies.
 - 2.2.5 **Data Encryption:** Apply and verify that encryption standards are being used at rest and in transit.
- 2.3 **Data Privacy:** How an organization ensures that personal or sensitive information is collected, used, shared, and stored lawfully, ethically, and with respect for individuals' rights.
 - 2.3.1 **Data Review:** Provide a mechanism for individuals to see, correct, and control access to data within their legal rights, as well as opt-out of post-collection reporting.
 - 2.3.2 **Disclosure Avoidance:** Implement techniques to consistently prohibit the discovery of personally identifiable information (PII) through the release of data to the public.
 - 2.3.3 **Public Data Consumption:** Prepare and publish data meant for public consumption, such as Freedom of Information Act requests and public domain information.
- 2.4 **Compliance:** How an organization addresses adherence to federal and state laws and regulations, as well as organizational policy, process, procedure, and practice.
 - 2.4.1 **Statute Alignment:** Regularly examine current practices for compliance with all relevant data privacy and security laws and regulations.

- 2.4.2 ***Communication:*** Provide information regarding obligations, rights, and protocols to all people whose data have been collected.
- 2.4.3 ***Monitoring Activities:*** Regularly examine the organization's established practices related to operational use to confirm that controls are followed as prescribed. Conduct routine reviews of individual data users for compliance with data access protocols and recommend changes to controls and access as necessary.
- 2.4.4 ***Continuity Plan Testing:*** Conduct testing to assess the effectiveness of the organization's data operations planning.
- 2.4.5 ***Training:*** Verify staff have completed required periodic data security and privacy training as required by organizational policy and local, state, and federal laws and regulations.
- 2.4.6 ***Internal Controls:*** Identify key IT and financial controls for the organization's business functions and IT systems. Document evidence for meeting these controls, identifying gaps, and developing plans of actions and milestones to address those gaps.

3.0 Data Management

The Data Management domain encompasses the effective and efficient management of data assets. This domain includes procedures and practices that govern how data are collected, stored, processed, and used and ensures data quality, security, compliance, and accessibility.

- 3.1 **Data Lifecycle Management:** How an organization handles data from the point of collection and validation through storage and ongoing maintenance to ensure quality and reliability.
 - 3.1.1 **Data Generation:** Ensure the awareness of, and attention to, events and activities that result in the generation of valuable data collection points across the agency.
 - 3.1.2 **Data Collection and Validation:** Collect valid data that meets the needs of all downstream operations.
 - 3.1.3 **Data Processing:** Complete all necessary activities to process data, including data sanitization, transformation, compression, and encryption.
 - 3.1.4 **Data Storage:** Make data available in locations that meet the needs of the organization.
 - 3.1.5 **Data Transfer and Transport:** Securely transport data across locations, both within the organization and externally, and transport data packets across networks and devices.
 - 3.1.6 **Data Refresh:** Identify the frequency of data updates, document each refresh step for traceability, maintain event logs for compliance and accountability, and keep stakeholders informed about the availability and reliability of refreshed data for reporting purposes.
 - 3.1.7 **Data Archiving:** Conduct the migration of data assets to an archiving location for long-term storage once no longer required for active use.
 - 3.1.8 **Data Retention:** Ensure adherence to retention requirements and retain data in compliance with the organization's policies.
 - 3.1.9 **Data Destruction:** Certify that data assets are permanently destroyed and rendered irretrievable and inaccessible once the data retention timeline has expired.
- 3.2 **Data Infrastructure and Operations:** How an organization establishes the technical foundation of its governance framework by intentionally designing, implementing, and maintaining an accurate and consistent data infrastructure.
 - 3.2.1 **Data Architecture:** Define and manage how data are collected, stored, integrated, and accessed. Maintain data standards, document data flows, govern data models, and enforce architectural consistency and security.
 - 3.2.2 **Data Models:** Define the required elements, confirm shared meanings, and map how data relate across systems to shape the logical structures that specify how data are stored, organized, and secured.
 - 3.2.3 **Data Transformation:** Transform data from raw sources to formats or structures that make data useable for analysis, storage, decision-making, or other specific purposes.
 - 3.2.4 **Data Integration:** Combine data from multiple systems through the application of established data standards, well defined data quality rules, and unified collection and validation processes.

- 3.2.5 **Data Matching:** Compare and combine data from multiple sources and identify and merge records that correspond to the same person to reduce redundancy and improve the accuracy of data across systems.
- 3.2.6 **Data Quality:** Confirm data are accurate, protected from improper changes, and consistent across all systems. Review data to detect and correct errors to enforce established data standards.
- 3.2.7 **Data Development and Operations:** Deploy modern functional practices to enhance collaboration, automation, and efficiency and ensure build and release updates are operating in a steady, reliable way.
- 3.2.8 **Continuous Improvement:** Proactively identify and address challenges related to the organization's data-specific goals.
- 3.3 **Data Documentation and Element Management:** How an organization captures, maintains, and shares information about its data assets.
 - 3.3.1 **Data Documentation:** Provide staff and stakeholders with quick access to up-to-date, clear, and thorough information on all data assets, systems, and processes.
 - 3.3.2 **Data Catalog:** Maintain a centralized, searchable inventory of the organization's data assets, including metadata, to support efficient data discovery, understanding, and governance.
 - 3.3.3 **Data Dictionary:** Maintain an updated document that defines and describes all aspects of a data element including attributes, structures, and business meaning.
 - 3.3.4 **Data Definition:** Manage the authoritative data standards and specifications that describe the meaning, structure, and constraints of data elements.
 - 3.3.5 **Classification:** Classify data based on sensitivity, value, and regulatory requirements to determine how data are stored, accessed, protected, and shared.
 - 3.3.6 **Data Lineage:** Document the flow of data as it moves from the point of origin through all processes, transformations, systems, and destinations.
 - 3.3.7 **Metadata Maintenance:** Create, update, validate, and retire information about the data so that data assets remain accurately described, discoverable, and properly governed throughout the data lifecycle.
- 3.4 **Data Standards and Interoperability:** How an organization sets up its systems, platforms, and applications to exchange, interpret, format, and use data seamlessly.
 - 3.4.1 **Data Standards:** Identify the sets of rules that apply to each data asset and maintain processes for documenting adherence to the standard and updating the data when the standards change.
 - 3.4.2 **Data Interoperability:** Ensure data from multiple sources are accessible and useable and can be extracted, merged, transformed, reported, and analyzed across all data source systems.

4.0 Data Use and Sharing

The Data Use and Sharing domain encompasses the policies and practices necessary to make actionable data available or accessible to various individuals, data systems, or organizations for an authorized and applied purpose.

- 4.1 **Data Stewardship:** How an organization enables, guides, and governs appropriate data use and sharing practices.
 - 4.1.1 **Ethical Use:** Adhere to principles that promote the ethical use of data such as transparency and minimization.
 - 4.1.2 **Professional Development:** Identify opportunities for data to be used and shared both within the organization and across organizations.
 - 4.1.3 **Data Literacy:** Increase data consumers' ability to understand, contextualize, interpret, and ethically use data.
- 4.2 **Data Dissemination:** How an organization monitors and facilitates the release or receipt of timely, transparent, and actionable information to empower data consumers.
 - 4.2.1 **Data Production:** Create data sets and visuals to meet the needs of internal and external data consumers such as staff, students, families, policymakers, and the public.
 - 4.2.2 **Context Provision:** Use written and visual communication techniques to make data more meaningful, accessible, and actionable.
 - 4.2.3 **Feedback Integration:** Receive, review, and implement stakeholder feedback to improve data clarity, relevance, and usability.
 - 4.2.4 **Data Exposure:** Provide a secure environment for data partners such as research institutions, districts, and community organizations to use data without it leaving the physical control of the organization.
 - 4.2.5 **Agreement Establishment:** Execute legal agreements that authorize the release, receipt, and use of data between or within the organization.
 - 4.2.6 **Agreement Monitoring:** Ensure data sharing agreements and memoranda of understanding and/or any legal contracts remain current, valid, and relevant to the organization.
- 4.3 **Research and Evaluation:** How an organization generates evidence on educational practices, student outcomes, and school systems to inform policy, enhance instructional strategies, and foster equitable learning environments.
 - 4.3.1 **Research Agenda Coordination:** Monitor internal and external research projects for consistency with the established research agenda.
 - 4.3.2 **Partnership Formation:** Foster research collaborations with universities, districts, and communities to co-design research and data collections. Set clear expectations for shared goals, reports or products, and communication.

- 4.3.3 ***Institutional Review Board (IRB) Implementation:*** Follow relevant Institutional Review Board (IRB) approval procedures while protecting student privacy and rights and adhere strictly to the IRB's regulations related to research involving human subjects.
- 4.3.4 ***Project Implementation:*** Work with internal staff or contracted third parties to conduct research projects. Articulate roles and responsibilities for research coordination. Outline approval processes for internal and external research activities.
- 4.3.5 ***Results Dissemination:*** Promote timely, accessible sharing of research results, and produce actionable insights regarding research results and their potential impact on policy and practice.
- 4.4 ***Strategic Alignment and Continuous Improvement:*** How an organization ensures that all data use and sharing activities reinforce the organization's mission and drive system-wide progress.
 - 4.4.1 ***Proactive Collaboration:*** Seek opportunities to use data with policymakers and other education program staff to make decisions.
 - 4.4.2 ***Continuous Improvement:*** Regularly assess the effectiveness of data use and sharing practices and refine the framework based on outcomes and feedback.

Key Terms

Change Management	Change management is the structured approach utilized by an organization to ensure changes to an organization's data are made with the knowledge of all stakeholders, that those changes are documented and understood relative to the larger data infrastructure, and that those changes are accounted for in future data activities.
Data DevOps	DevOps combines the functions of software development and information technology operations to promote efficiency, collaboration, and faster delivery. Data DevOps applies these principles to data pipelines, data models, and analytics workflows. Its purpose is to streamline how data are collected, transformed, tested, deployed, and monitored so that data products can be delivered reliably, efficiently, and with higher quality.
Data Encryption Standards	Data encryption standards are the agreed-upon methods and practices used to protect sensitive information by converting data into a secure, unreadable format, making it unusable to unauthorized users.
Data Ethics	Data ethics are the principles and practices that guide the responsible collection, use, sharing, and management of data. Data ethics emphasize transparency, privacy, accountability, and respect for the population(s) represented in the data. Its goal is to ensure that data-related decisions and actions promote trust and uphold ethical and legal standards.
Data Literacy	Data literacy is a set of knowledge, skills, and abilities required for leveraging as a strategic asset.
Data Owner	A data owner is an organizational leader with the primary responsibility for a given data asset. This includes the authority to make decisions and the responsibility for outcomes associated with those data assets.
Data Product	A data product is a reuseable data output such as a curated dataset, dashboard, model, or data application programming interface (API) that delivers reliable, accessible, and actionable data to users for a specific purpose.
Data Standards	Data standards are documented, agreed-upon rules that specify how data are defined, structured, and formatted so different systems can use it consistently. Data standards act as blueprints that make data easier to share, understand, and reuse while reducing duplication.
Data Steward	Data stewards are operational stakeholders responsible for the day-to-day maintenance and functionality of a data asset who have a detailed understanding of the lifecycle and uses of the associated data assets and are responsible for the integrity of the data.
Data System	A data system is an organized collection of tools, processes, and technologies used to collect, store, manage, analyze, and share data.

	It supports the creation, maintenance, and use of information to enable operations, decision-making, reporting, and other organizational functions.
Data Visualization	Data visualization is the process of representing data and information through graphical elements, including charts, graphs, maps, and dashboards. Data visualizations make patterns, trends, and insights easier to understand and communicate.
DevOps	DevOps is a set of practices that include collaboration, automation, continuous testing, and continuous delivery between development and operations teams to deliver more efficiently and reliably, with higher quality. Core principles include collaboration and shared ownership, automation, continuous integration, continuous delivery, infrastructure as code, monitoring and feedback loops, and continuous improvement.
Metadata	Metadata are structured information that describe, explain, locate, or provide context about data (data about data), making it easier to retrieve, use, and manage data as a resource. Metadata provide critical context for data assets such as creator, creation date, format, content descriptions, attributes, ownership, acceptable uses, constraints, and information security labels or classifications.