Opening the Door for Data Use: Improving Data Quality With Data Integration
Presenters

Fort Worth, TX – March 3–4, 2020
Audrey Rudick, IDEA Data Center
Tiffany Boyd, IDEA Data Center
Ginger Elliott-Teague, Oklahoma State Department of Education

Nashville, TN – Cancelled Due to COVID-19
Audrey Rudick, IDEA Data Center
Tiffany Boyd, IDEA Data Center
Anne Rainey, Montana Office of Public Instruction
What This Session Will Cover

- Data integration and data quality
- The role of data governance
- IDC’s SEA Data Processes Toolkit
- Center for the Integration of IDEA Data’s (CIID) Data Integration Toolkit
- State experiences with integration and the toolkits
- Small group discussions and sharing
To Integrate

To form, coordinate, or blend into a functioning or unified whole
Data Integration

The combination of technical and business processes used to combine data from disparate sources into meaningful and valuable information


Image source: Center for Integration of IDEA Data
Data Integration: A Holistic View

Data integration impacts all aspects of the data life cycle and use:

- Collection
- Validation and cleansing
- Monitoring data quality
- Presentation and use
Describe How Data Are Integrated in Your State and Any Future Plans for Data Integration
Data Quality in an Integrated System

• A single authoritative source for each data element
• Consistent definitions of source data
• Easier to identify where data quality issues originate
• Collect data once, use multiple times

All of which leads to more confidence in the data
Benefits of a Single Source of Information

• Reduces confusion about which source to use
• Reduces the need to resolve discrepancies between sources
• Stores data for students with and without disabilities in the same location
• Updates data element one time in one location
• Allows for more automated processes
Role of Data Governance

- Establishes roles and responsibilities
- Develops consistent processes
- Increases transparency in processes
- Develops common understanding of data
- Identifies stakeholders and data users affected by changes
Examples of Data Governance at Work

• Data stewards
• Roles and responsibilities
• Documentation of processes and standards
• Identification of authoritative data sources
• Coordination of timelines
• Documentation of dependencies
What Impacts on Data Quality Have You Seen With Data Integration?
IDC’s **SEA Data Processes Toolkit**

What is it?—A collection of templates to document all state-level IDEA data collection and reporting procedures and activities
Resources Included in the SEA Data Processes Toolkit

- State landscape protocol
- 618 data collection protocols
- 616 SPP/APR protocols
- Part B LEA Determinations
- Business rules documentation protocol
- Data collection calendar
Basic Structure of the Protocols

• **Essential Elements** captures basic background information (e.g., description of collection or indicator, due date, contact information)

• **Processes** captures specific steps for data collection, validation, analysis, submission, governance, and public reporting
Data Processes Documentation

• Establishes a well-managed process for data collection, analysis, and reporting
• Establishes and supports consistent practices for producing valid and reliable data
• Builds capacity of data stewards and staff
What Data Processes Documentation Do You Have in Place or in the Works?
What is it?

• The toolkit is a collection of resources that outline the major steps and supporting tasks required to complete any data integration process.

• Each task has a corresponding guiding document detailing its purpose, suggested activities, timeline, previously learned lessons, and available resources.
**Data Integration Toolkit Steps**

- Step 1. Define the goals for integration
- Step 2. Establish project plan and structures for data integration work
- Step 3. Locate and organize all potential data elements and associated attributes for integration into a data repository
- Step 4. Complete master integrated dataset
- Step 5. Implement and perform extract, transform, and load (ETL) procedures
- Step 6. Conduct review and validation of data integration
- Step 7. Conduct post-integration supports and activities
Selected Resources From the CIID
Data Integration Toolkit

• Data Integration Use Case Exercise
• Communication Plan Template
• Common Education Data Standards (CEDS) Align Tool
• Data Flow Ideograph Tool
• Extract, Transform, Load (ETL) Checklist
• Sustainability Plan (Sustaining Generate: Roles and Responsibilities)
How Do Resources—Such as the Communication Plan, ETL Checklist, and Sustainability Plan—Support Maintenance of Quality Data?
Impact of Data Integration on Data Analysis

• Multiple program areas use the same data to analyze outcomes
• Supports greater understanding of dependencies and linkages between programs and outcomes
• Provides holistic view of the outcomes for all students
How Does Integrated Data Open Doors for More Data Analysis?
Small Group Discussion

• Gather in groups of three or more
• Review the questions on the handout, and choose two or more to discuss
Share Out

• If you could integrate data in your state with a snap of a finger, what would you integrate and why?
• What types of analysis might be possible with integrated data that are not possible now?
• How does process documentation support your data quality efforts?
Resources

• IDC’s SEA Data Processes Toolkit
  https://www.ideadata.org/sea-data-processes-toolkit

• CIID’s Data Integration Toolkit
  https://ciidta.grads360.org/#program/toolkit

• Common Education Data Standards https://ceds.ed.gov/
Contact Us

Audrey Rudick, audrey.rudick@aemcorp.com
Tiffany Boyd, tiffany.boyd@aemcorp.com
Ginger Elliott-Teague, Oklahoma State Department of Education, Ginger.Elliott-Teague@sde.ok.gov
Anne Rainey, ARainey@mt.gov
For More Information

Visit the IDC website
http://ideadata.org/

Follow us on Twitter
https://twitter.com/ideadatacentre

Follow us on LinkedIn
http://www.linkedin.com/company/idea-data-center
This presentation was supported by a grant from the U.S. Department of Education, #H373Y190001. However, the contents do not necessarily represent the policy of the U.S. Department of Education, and you should not assume endorsement by the federal government.

Project Officers: Richelle Davis and Rebecca Smith