Building Better Data Systems for Better Decisions

NC PAPA
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NCDPI Office of Research and Promising Practices
Dr. Shaun Kellogg, Senior Director
Abby Pearce, Research Analyst

Session Description

In this session, attendees will learn about:

- The current state of North Carolina's data systems, including the fragmentation challenges and the impact on data accessibility and decision-making.
- The phased approach to modernizing NC SchoolWorks, including migrating to the cloud, enriching the data lake, and transitioning to a new reporting and analytic platform.
- The vision for a unified, integrated data system that can provide a single, comprehensive source of student data to drive actionable insights, improve student outcomes, and close achievement gaps.

Session Outcomes

By the end of this session, participants will be able to:

1. Understand the challenges of data fragmentation and how it affects decision-making and reporting in educational settings.
2. Recognize the importance of cloud migration and system optimization in modernizing data infrastructure.
3. Provide feedback for enriching data systems and creating actionable insights that drive continuous improvement in educational outcomes.

Grant High Level Expected Outcomes

- **Objective 2:** Use modern business intelligence to explore, measure and track new metrics for determining school quality and student growth such as school climate and durable skills.
  - **Outcome 2.1:** New innovative and transformative teaching and learning practices, programs, and policies can be successfully evaluated to facilitate evidence-based-based policymaking at the state and local-level and scaling successful innovations in schools
  - **Outcome 2.2:** Relationships in and between new and historical metrics and student outcomes will be uncovered
  - **Outcome 2.3:** Timely and relevant analysis and findings using modern data analysis, machine learning, and scientific visualization techniques will be shared

Grant High Level Expected Outcomes

- **Objective 1:** Design and implement a modern, interoperable, operational, and consolidated educational longitudinal data warehouse and reporting environment.
  - **Outcome 1.1:** A modernized, scalable, interoperable, sustainable, trusted data platform powered by near real-time current and historical data
  - **Outcome 1.2:** The creation of a standards-based analytical layer designed to simplify and enhance user access, reporting, integrations, security, and reduce administrative burden
  - **Outcome 1.3:** Intuitive, secure, self-service reporting and analytics educator interfaces

Background on the Current SLDS

1. CEDARS
2. SchoolWorks
3. NC LDS

1 CEDARS

- NC Common Education Data Analysis and Reporting System (CEDARS)
- **Grant Period:** 8/7/2007 – 4/30/2012
- **Grant Award:** $6,000,000
- **Major Outcomes**
  - ***Staff Identifier:*** Reliable matching of staff level records over time and between applications.
  - ***Student Identifier:*** Reliable matching of student level records over time and between applications.
  - ***EDFacts Reporting:*** Automated Federal reporting with high quality data drawn from the LDS warehouse. Made possible unified reporting from one source

1 CEDARS

- **Major Outcomes continued**
  - ***Analytical Tools:*** Reporting and analysis services against the high-quality data in the LDS warehouse. Made longitudinal data available to PSUs in an easy to learn format (OBIEE)
  - ***Longitudinal Data Store:*** A physical and logical facility to collect and organize education data over long periods of time (50 years planned) to support analysis and reporting.
  - ***Transcript Service:*** The electronic transcript reduced the effort at the school level to both send and receive student transcripts which in many cases required extensive re-entry of data.

2 NC SchoolWorks

- P-20W Longitudinal Data System
- **Grant Period:** 7/1/2012 – 6/30/2017
- **Grant Award:** $3,639,543
- **Major Outcomes**
  - ***Shared Student Identifier:*** Achieved more reliable matching of student level records over time and between agencies.
  - Established a data broker-based system so that agency researchers can request data to better answer cross-sector questions
  - Provided key data to empower the legislature and NC policy makers to make better decisions concerning funding, program assessments, as well as identifying trends in North Carolina education
  - Strengthened working relationships between staff at partner agencies

3 NC LDS

- Overview of history
- Overview of current state
- Overview of future state

Overall Management Structure Process of SLDS

- NCDPI is responsible for K-12 infrastructure and governance and approving research requests related to K-12 data
- SAS provides the data broker (NC SchoolWorks) between K-12 and NC LDS (e.g. Workforce Development related requests)
- NCDPI is the steward of K12 student data

NC SLDS Project for Practitioners

Utilize a modern longitudinal data system to:

- Explore, measure and track new metrics for ***determining school quality and student growth such as school climate and durable skills***.
- ***Evaluate the implementation and impacts*** of innovative and transformative ***teaching and learning practices***, programs, and policies at the state and local-level
- ***Leverage data analysis, machine learning, and visualizations*** to understand the relationships in and between new and historical metrics and student outcomes

Discussion Questions

1. What are the biggest challenges to doing more with the data you have or need?
2. Which student outcomes are the most important for your team to track and improve?
    - Which data sources do you use now are essential, and what critical data are missing or hard to access?
3. What challenges have you encountered when accessing data or putting it together?
4. What are your current priorities in terms of longitudinal data?
5. Who in your district needs ready-access to individual-level longitudinal data?

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