



# Leading Forward: Need to Knows About the Statewide Longitudinal Data Systems (SLDS) Grant

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Nebraska Department of Education  
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# Grant Overview

- Title: Nebraska Data Analysis and Research
- Start Date: 07/01/2012
- End Date: 06/30/2015
- Amount Awarded: \$4,361,524
- Project Director: Dr. Dean Folkers
- Project Manager: Matt Hastings



# Nebraska's 2012 SLDS Grant

- Major Outcomes:

- 1. Data Analysis and Reporting Tool (DART)**

- Provide districts flexibility to upload data from different sources on different schedules to produce dashboards and support local data analysis and research

- 2. Professional Development for Data Analysis**

- Develop a partnership with the Professional Development Affiliate of the ESUs to create a statewide system of professional development training using data analysis training materials developed by a Data Analysis Cadre
  - Utilize a four-tiered strategy for delivery would ensure consistent training is received by every school district

- 3. NDE Research and Evaluation Operation**

- NDE support for new collaborative work with the research community and NDE's newly created research function, including a research and evaluation specialist who would assist NDE program directors and staff, coordinate the research community's involvement in the Data Analysis Cadre, conduct NDE research, and disseminate research and findings
- Activities to support NSSRS

- 4. SLDS Sustainability**

- Provide SLDS support, including a Customer Relationship Management (CRM) tool for use by NDE's Helpdesk and Data Trainers, development of a formal data governance plan, a revision of the data dictionary to include the Common Education Data Standards (CEDS), an interstate student locator tool to find students who have moved to other states, and a staff person dedicated to ensuring high quality student enrollment data resides in NSSRS

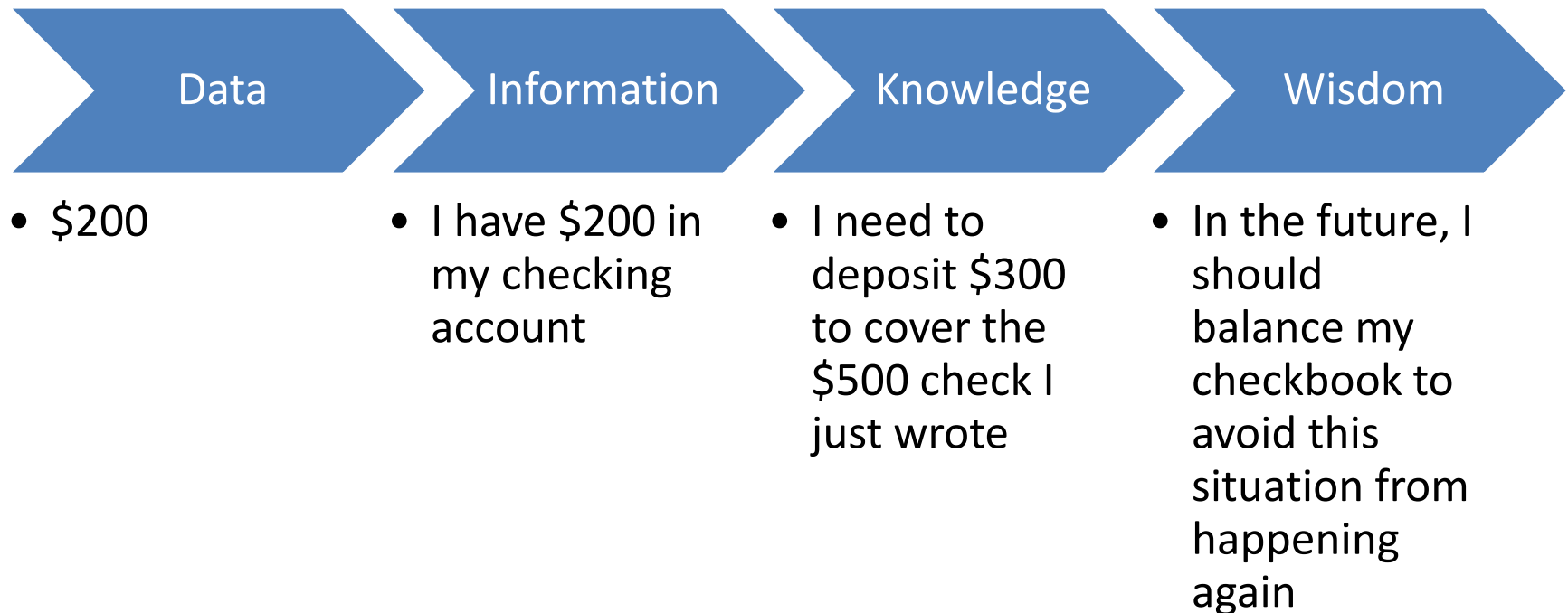


# Data Analysis and Reporting Tool

- DART – AKA “Data Dashboard”
  - Adopted the Ed-Fi Solution
  - Utilizes *Nebraska* data to address *Nebraska’s*
    - Individual student needs, measure progress, and refine action plans throughout the school year
  - *Optional* tool for district use



# What is a Dashboard?: Understanding the Importance of Data



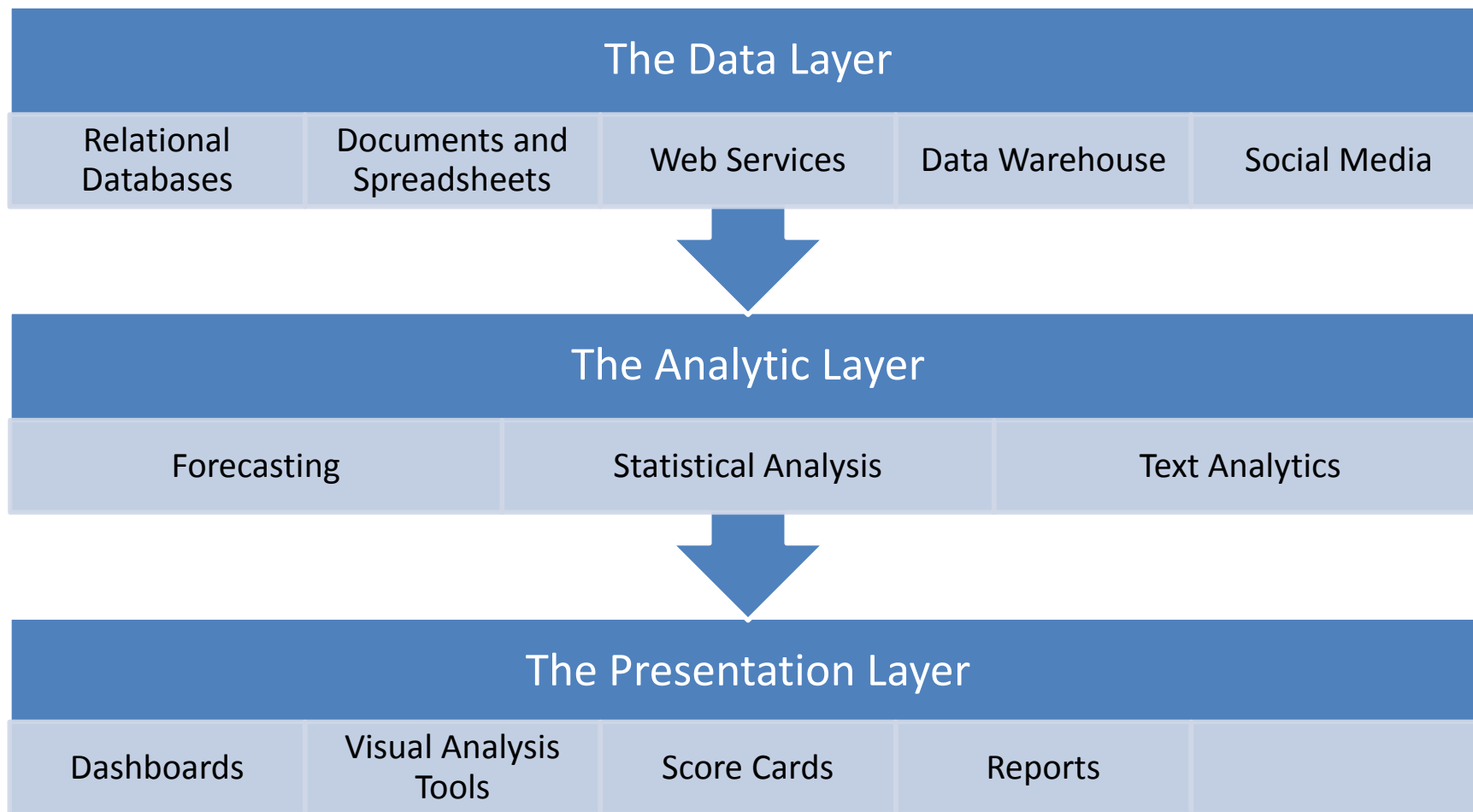


# What is a Dashboard?

- Rooted in the concepts of business intelligence (BI)
  - Transform data into knowledge to promote informed decision-making
  - 4 Steps of the BI Cycle:
    - Accurate Answers
    - Valuable Insights
    - On-time Information
    - Actionable Conclusions



# BI Technology in An Organization





# What is a Dashboard?

- *“A dashboard is a visual display of the most important information needed to achieve one or more objectives; consolidated and arranged on a single screen so the information can be monitored at a glance.”*  
— Stephen Few



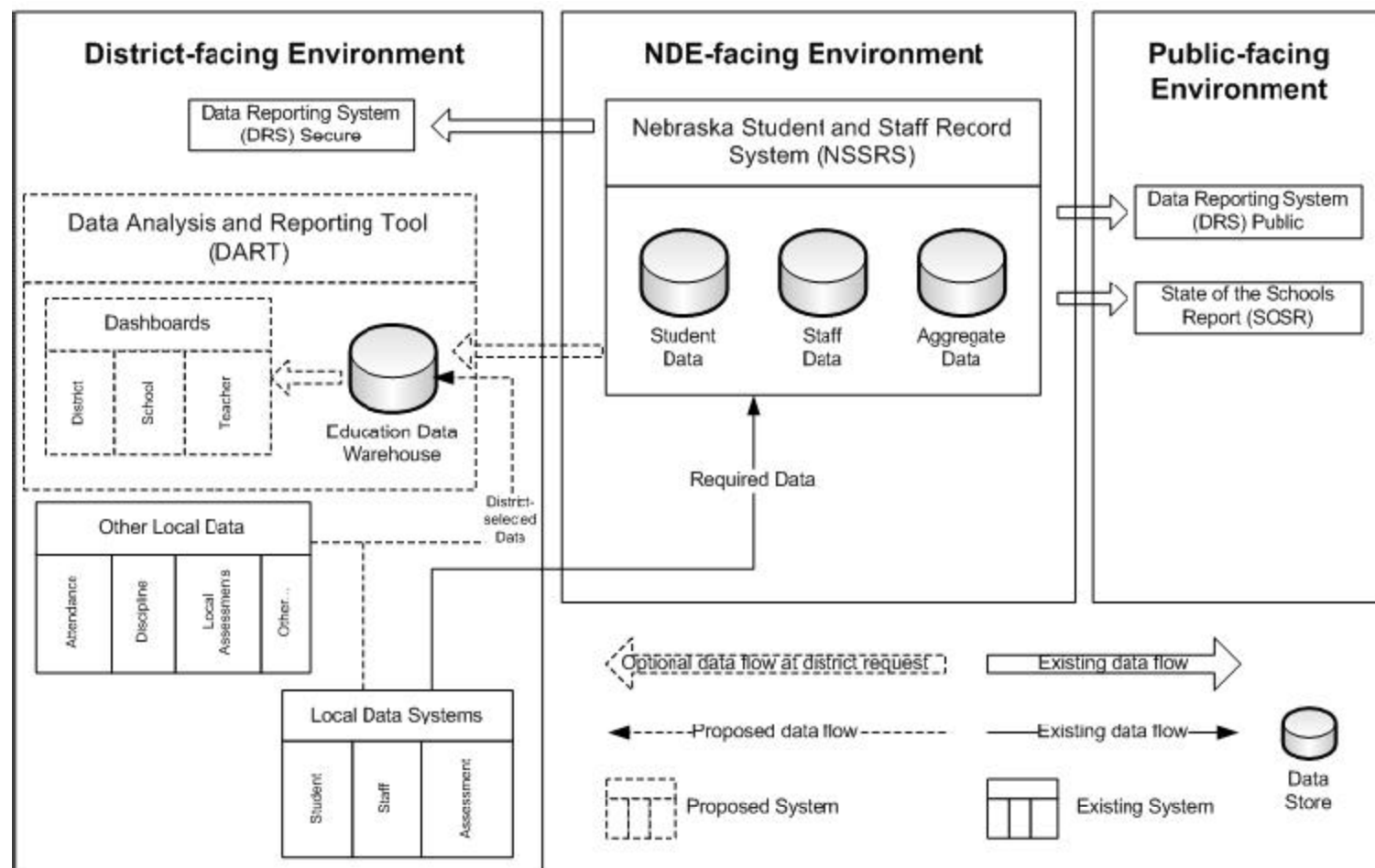


# What is a Dashboard?

- Key Dashboard Characteristics:
  - All visualizations fit on a computer screen
  - Show most important KPIs to be monitored
  - Interactivity such as filtering and drill-downs can be utilized
  - Not exclusively for administrators or executives
  - Easy to understand and use
  - Automatic data updates without user assistance



# Dashboard Technical Architecture



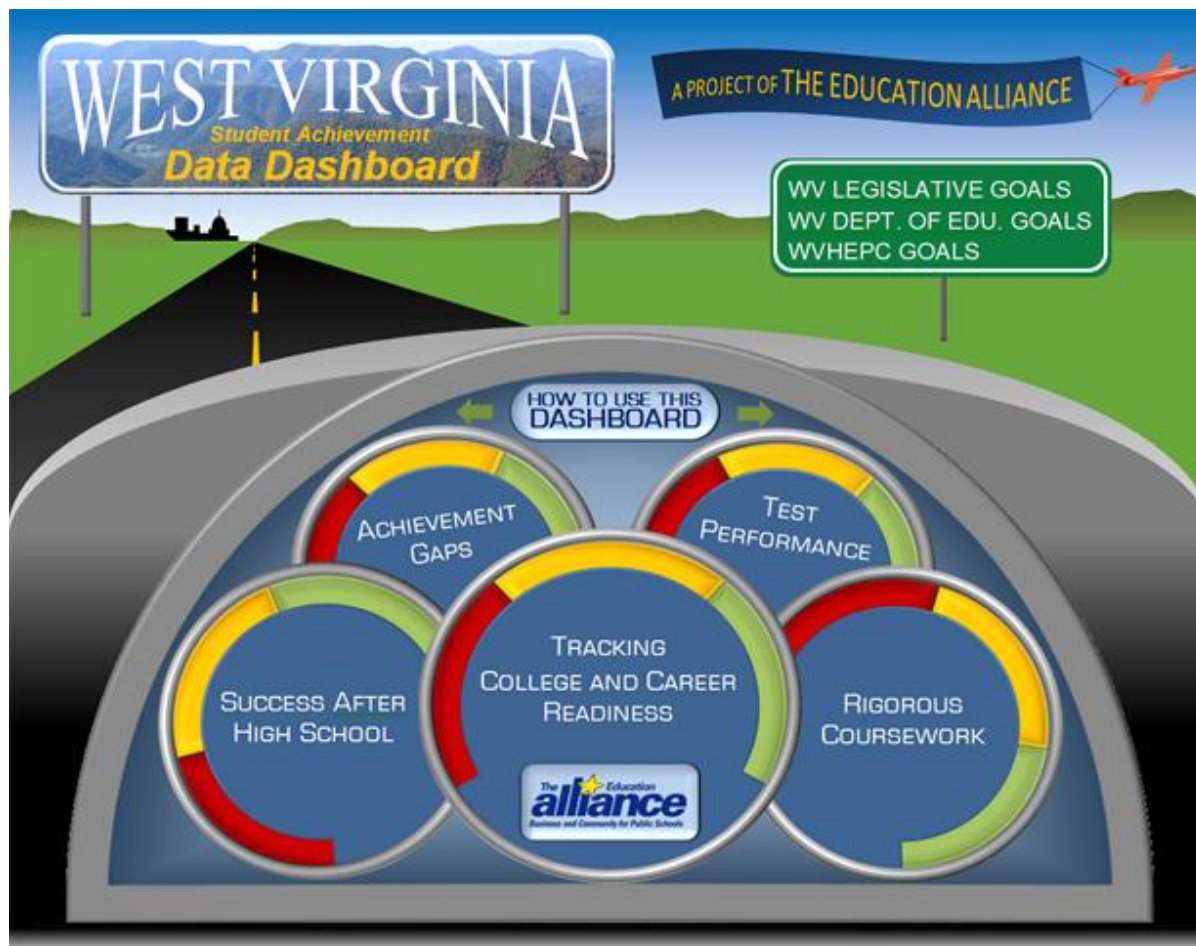


# About Ed-Fi

- The Alliance
  - The Ed-Fi Alliance, LLC, was founded as an organization dedicated to empowering educators with real-time, actionable education data on every student in their classroom, school, district or state.
- The Solution
  - The Ed-Fi solution is an educational data standard and tool suite (unifying data model, data exchange framework, application framework, and sample dashboard source code) that enables vital academic information on K-12 students to be consolidated from the different data systems of school districts while leaving the management and governance of data within those districts and states.
- Michael & Susan Dell Foundation
  - The Ed-Fi Alliance is a wholly-owned subsidiary of the Michael & Susan Dell Foundation. The Ed-Fi solution was developed with support from the Michael & Susan Dell Foundation and is available for use via a free license from the Ed-Fi Alliance.

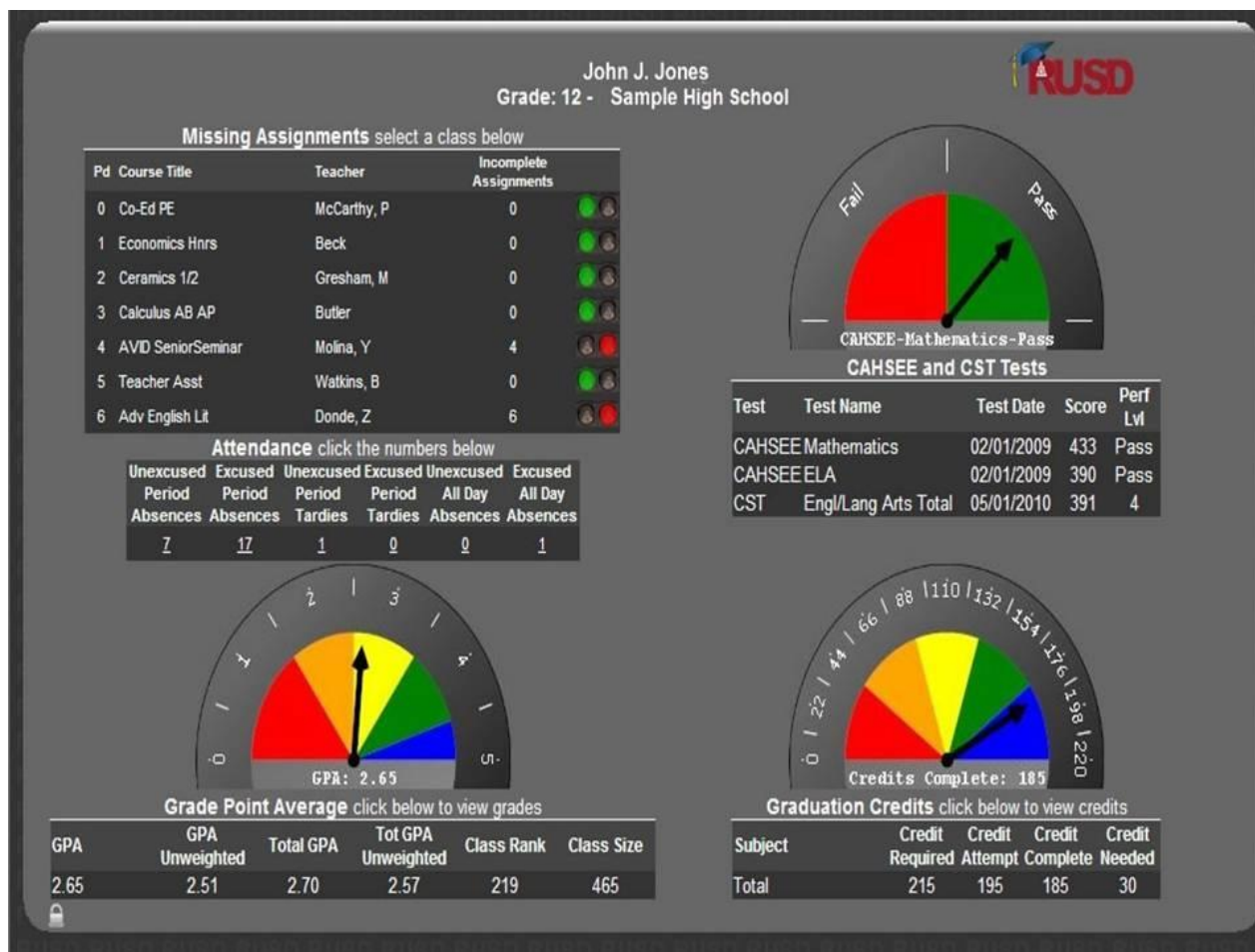


# Examples from Other States





# Example from Other States





# Ed-Fi-Style Dashboard

Glendale Independent School District • Bradock Elementary School • Grade 5 • Amy Woodlee's Class


STUDENT SNAPSHOT

Hello, [Amy Woodlee](#) | [Help](#) | [Log Out](#)

Switch Dashboard Level...[GO →](#)

Select a Student...[GO →](#)

[PRINT](#)



**Jose Spence**

Grade 5

SS

LANG

R

Student Information

Academic Dashboard

Current Schedule

Academic Profile

Overview

Attendance and Discipline

Assessments

Grades and Credits

## ASSESSMENTS

Jump to subcategory: [Reading](#) | [Benchmarks](#) | [State Standardized](#) | [Language](#)

[Show All Details](#)

READING ASSESSMENTS	STATUS	VALUE	TREND	DETAILS
<b>Reading</b> Test scores and whether met standard				
TPRI (05/09)	DEV.		▲	<a href="#">More...</a>
Tejas Lee (05/07)	STILL DEV.			
Reading Level (05/10)	BELOW	DRA-38	▼	<a href="#">More...</a>

BENCHMARK ASSESSMENTS	STATUS	VALUE	TREND	DETAILS
<b>Benchmarks</b> Benchmark scores and whether met benchmark				
Reading/ELA (MOY 2010)	ABOVE	75%	▲	<a href="#">More...</a>
Writing (BOY 2010)	ABOVE	70%	▲	<a href="#">More...</a>
Mathematics (MOY 2010)	ABOVE	70%	▲	<a href="#">More...</a>
Science (BOY 2010)	BELOW	60%	▼	<a href="#">More...</a>
Social Studies (BOY 2010)	ABOVE	80%	▲	<a href="#">More...</a>

STATE STANDARDIZED ASSESSMENTS	STATUS	VALUE	TREND	DETAILS
<b>TAKS Performance</b> Test scores and whether met standard				
Reading (2010 Grade 5 TAKS)	BELOW	2051	▲	<a href="#">More...</a>
Writing (2009 Grade 4 TAKS)	BELOW	2099	▲	<a href="#">More...</a>
Mathematics (2010 Grade 5 TAKS)	BELOW	1942	▲	<a href="#">More...</a>
Science (2010 Grade 5 TAKS)	BELOW	1862	▼	<a href="#">More...</a>



# Visual Analysis Tools

- *...tools that offer the ability to select various date ranges, pick different products, or drill down to more detailed data.*
  - Highly interactive with functionality such as filtering, drill downs, etc.
  - Primarily used to find correlations, trends, outliers, patterns and conditions
- Nebraska's Data Reporting System (DRS)
  - <http://drs.education.ne.gov>



## DRS Public

- State level data
- Access open to anyone
- Masking rules apply if needed

## DRS Secure

- Same reports as DRS Public
  - District level view
- Must have an access code (takes up to 24 hours to activate)
- Only districts personnel with activation codes can view the data
  - Not student level but no masking





# Nebraska's DRS

Official Nebraska Government Website

Sign Out

NEBRASKA DEPARTMENT OF EDUCATION  
301 Centennial Mall South • P.O. Box 94987 • Lincoln, Nebraska • 68509 • 402-471-2295

Data Reporting System

DRS SECURED HOME QUICK FACTS GUIDED INQUIRY ▾ ADVANCED INQUIRY ▾ TRAINING CENTER

Search this site... 🔍 ⓘ

DRS Secured Home > Guided Inquiry

State Assessment

Federal Accountability

Student Characteristics

Career Education

Early Childhood Education

Special Education

District & School Info

## Early Childhood Education

**Early Childhood Education Program** - Any center-based part-day or full-day program operated by a public school district or Educational Service Unit with a stated purpose of promoting social, emotional, intellectual, language, physical, and aesthetic development and learning for children from birth to kindergarten entrance age.

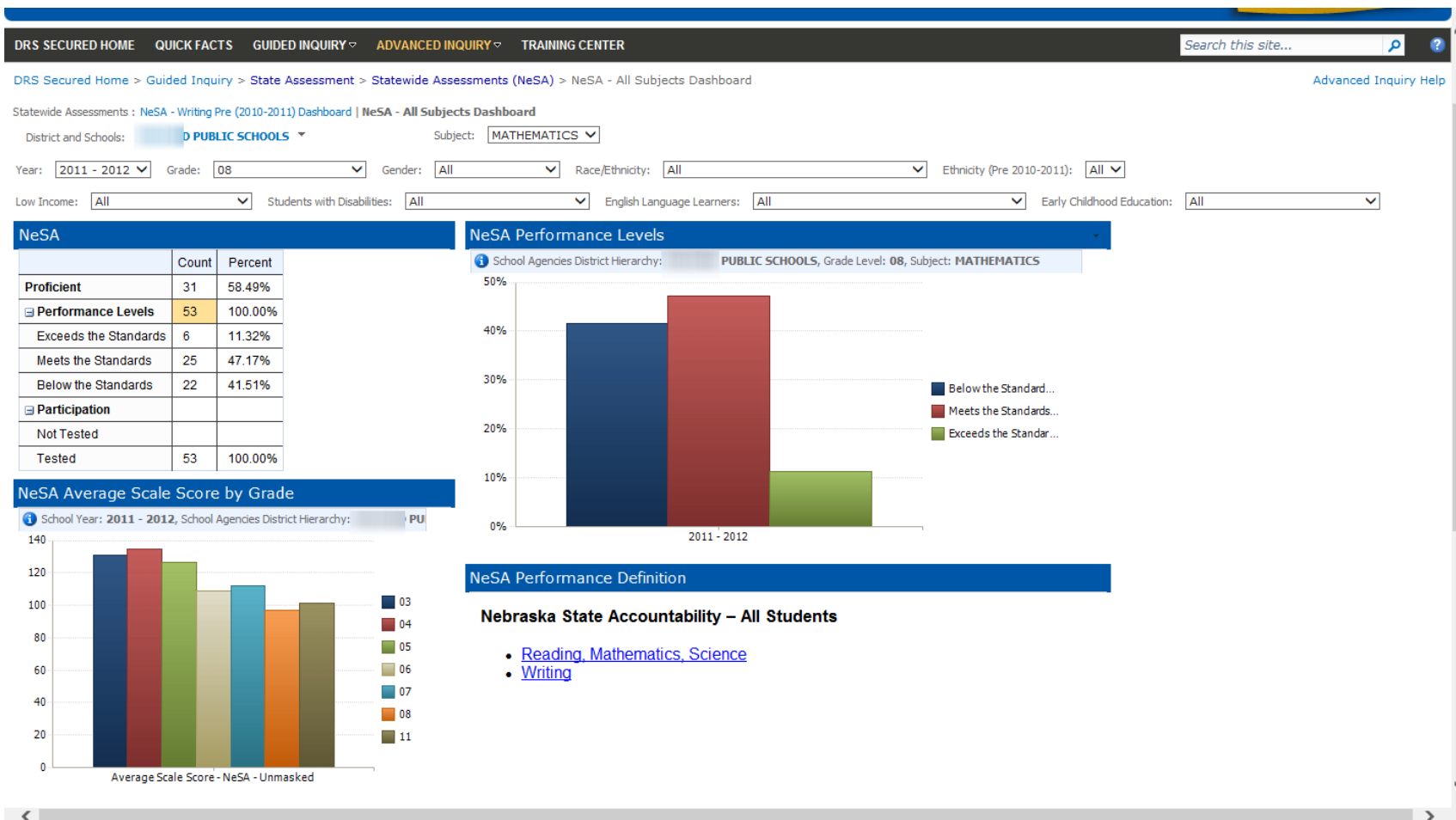
**Early Childhood Birth to Age 3 Endowment Grant Program** - A public-private funded endowment to provide grants to public school districts to provide programs and services for infants and toddlers who are at risk for school failure. Grants are awarded by the Endowment Board of Trustees through the Nebraska Department of Education.

Funding and support provided by a Statewide Longitudinal Data Systems grant from the U. S. Department of Education through P. L. 107-279 Educational Technical Assistance Act of 2002 (ACT).

Nebraska Department of Education Data Reporting System  
Home | Quick Facts | Guided Inquiry | Advanced Inquiry | Training Center

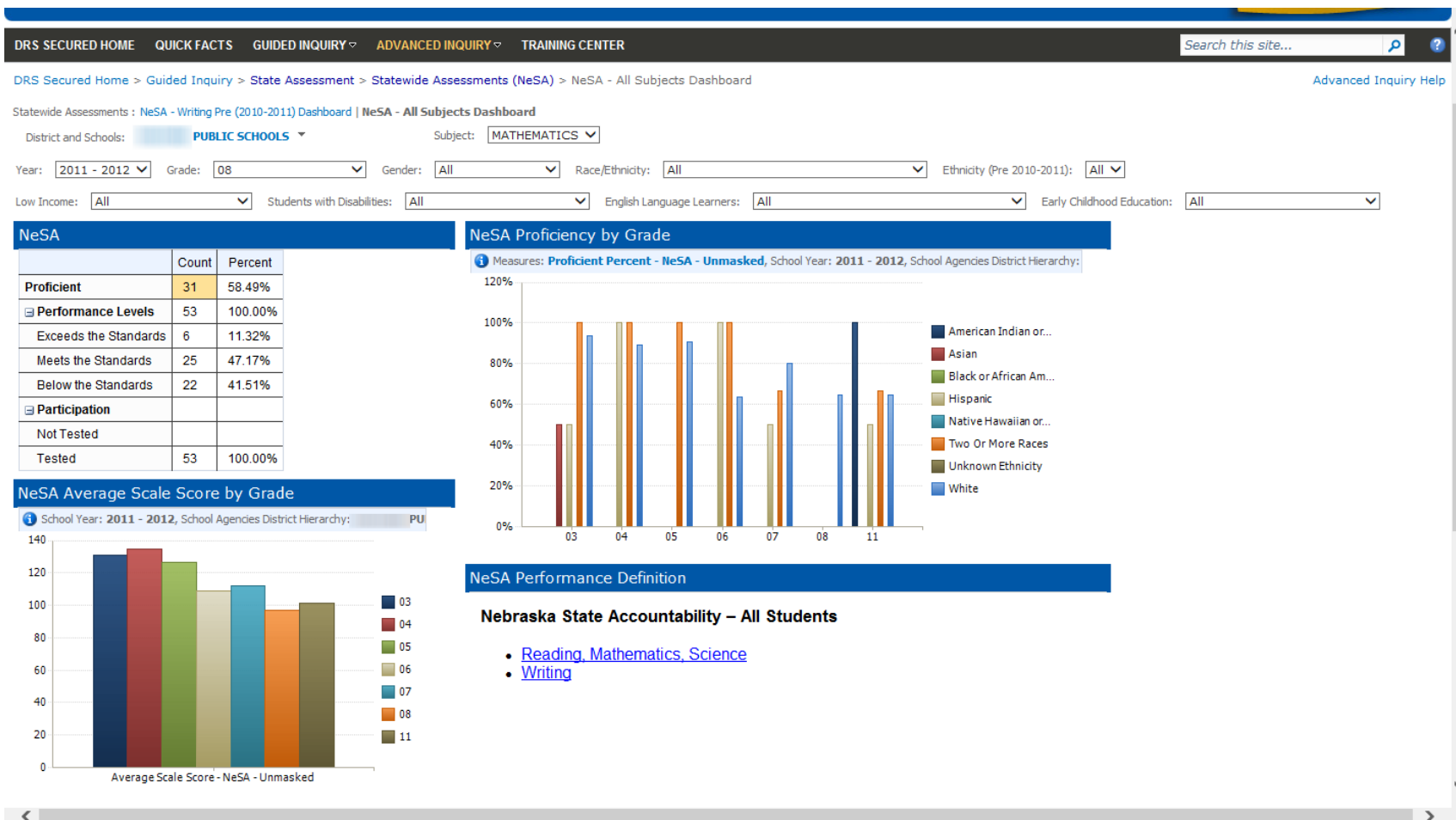


# Nebraska's DRS





# Nebraska's DRS





# Data Dashboard Pilot Districts

- Districts were invited to apply for pilots status in the development and implementation of the NE dashboard
- Application deadline of June 2013
- NDE is currently reviewing applications and will make final selections in the coming weeks
  - Selected districts must contribute staff time and technical expertise to help implement the Ed-Fi dashboard solution
    - SLDS grant will pay for staff time and other approvable expenditures
    - Estimated time – still uncertain
    - Initial meetings to begin this fall, technical implementation winter



# Working Timeline

- Dashboard Development:
  - Dashboard Design Team:
    - Insights submitted to NDE June, 2013
    - NDE currently processing results, will share with stakeholders early August, 2013
  - Dashboard Pilot Districts:
    - Applications submitted to NDE June, 2013
    - NDE pilot district selection (currently)
    - Initial meetings Fall, 2013
    - Technical implementation Spring, 2014
  - Dashboard Prototype Implementation with Pilots
    - By end of 2013-14 school year
  - Next, make available for any interested district(s)



# Challenges

- Data from districts is pulled daily
  - Districts may not update their data daily
- Standards are needed for data stored by the district
  - Other data not in NSSRS may not have standard definitions
- Districts have different information systems
  - At least a dozen different systems for student data
- Dashboards use data that may not be electronically stored
  - Classroom teacher and student pictures for example



# Opportunities

- Problems with data are found early when data is updated to dashboards daily
- Perhaps one day NDE will be able to “pull” NSSRS data from the dashboard warehouse versus the current district “push” into NSSRS



# NDE Research & Evaluation Operation

- Develop plan for collaboration with Nebraska stakeholders to answer questions of substantive interest to the education community
  - Implement collaboration plan
- Disseminate findings from original research and evaluation projects conducted by NDE
- Methodological research aimed at quantifying and enhancing data quality
  - Continuous quality improvement process





# SLDS Sustainability

- Develop data governance plan
- Data dictionary aligned with Common Education Data Standards (CEDS)
  - Metadata structures
- Interstate locator:
  - eScholar module to find students who moved out of state
  - Partners include: Iowa, Kansas, and Missouri



# PD for Data Analysis

Provide a statewide system  
of professional development training  
for data analysis  
that reaches every district.



# PD for Data Analysis

## Data Cadre

- Collaborative model between NDE, ESUCC, and ESUs
- Data Cadre development group composed of
  - Eight professional developers from ESUs
  - Five NDE Representatives



# PD for Data Analysis

- Centered around the use of data for continuous school improvement
- Focus on the analysis of data to inform professional development, instructional practices, evaluation processes and school improvement



# PD for Data Analysis

## Assist Districts in:

- Understanding how to interpret a variety of data
- Determining the factors that may explain what the data show
- Arriving at appropriate research based responses to what the data show (PD, Interventions, programs, resources)
- Determining if the responses are or were effective



# PD for Data Analysis

## Four guiding questions

Should be a part of each action taken in education

- What do the data tell us
- Why might that be so
- How should we respond
- Was our response effective (evaluation)



# PD for Data Analysis

## Building upon previous work

Examples but not an exhaustive list

- Using Data to Guide Action for School Improvement (Data Guidebook)
- ESU Data retreat protocols followed in the past
- *Data Analysis for Continuous School Improvement*  
Victoria Bernhardt



# PD for Data Analysis

- Nebraska K12 Standards Model using different terms
- **Literacies** based on the four guiding questions
  - **Concepts** stated as objectives
    - **Indicators** of measurable outcome
- Organized by Levels





# PD for Data Analysis

D  
R  
A  
F  
T

**Literacy Driving Question**

Expected outcome of this Literacy

- Concept
  - Indicator

**1. Data Foundation** *What Data are Important?*

Professional and support staff identify multiple measures of data.

- a. Multiple Measures of Data
- b. Continuous Improvement Process
- c. Comprehensive Assessment System

**2. Data Comprehension** *What do the Data Show?*

Professional and support staff continuously collect, analyze and apply learning from a range of data sources, including comparison and trend data about student learning, instruction, program evaluation, and organizational conditions that support learning using multiple levels of analysis.

- a. Multiple Levels of Data
- b. Multiple Levels of Data Analysis
- c. Measures of Data Over Time
- d. Data Tools and Skills

**3. Data Interpretation** *Why Might This Be?*

Professional and support staff are trained in the evaluation, interpretation and use of data.

- a. Data Literacy
- b. Display and Analyze Data
- c. Comparability

**4. Data Use** *How Should We Respond?*

The school system engages in a continuous process to determine verifiable improvement in student learning including readiness for and success at the next level.

- a. Policies and Procedures
- b. Surveys
- c. Instructional Strategies

**5. Evaluation** *Did Our Response Produce Results?*

System and school leaders monitor and communicate comprehensive information about student learning, school performance and the achievement of system and school improvement goals to stakeholders.

- a. Program Evaluation
- b. Communicating Results
- c. Measurement



## 5. **Evaluation** *Did Our Response Produce Results?*

System and school leaders monitor and communicate comprehensive information about student learning, school performance and the achievement of system and school improvement goals to stakeholders.

### A. **Program Evaluation:**

1. Team members will be able to demonstrate an understanding of the role of programs and school processes in the continuous improvement process (Bernhardt, 2004; Using Data to Guide Action for School Improvement, 2012).
  - a. Instructional strategies
  - b. Scheduling
  - c. Class size
  - d. Discipline strategies
  - e. Professional development
  - f. Curricular sequences
  - g. Assessment
  - h. School setting
  - i. Extra-curricular activities
  - j. Other



2. Team members will understand the relationship between programs and processes and the school's mission, purpose, and actions (*Bernhardt, 2013*).
3. Team members will become knowledgeable of what programs and processes are being implemented.
4. Team members will be able to evaluate the impact of programs through effective evaluation practices (Wall, 2010).
  - a. Define the purpose and scope of the evaluation
  - b. Specify the stakeholders served by the evaluation
  - c. Specify the evaluation questions – What do you want to know?
  - d. Specify the evaluation design
  - e. Create the data collection action plan
  - f. Collect data
  - g. Analyze data
  - h. Document findings
  - i. Disseminate findings
  - j. Provide feedback to program improvement
  - k. Operationalize the evaluation findings into a response toward the current program being evaluated (continue as is, change and adjust, terminate etc.)
5. Team members will study the results of processes over time
6. Team members will develop action plans to achieve different results, if necessary



## B. Communicating Results:

1. Team members will be able to summarize the steps taken and results of those steps to address the Key Challenge (goal/target) using the Evaluating Progress Improvement tool (Using Data to Guide Action for School Improvement, 2012).
  - a. Identify and enter:
    1. Focus area
    2. Key challenge
    3. Strategic statement
  - b. Identify and enter:
    1. Baseline measurement(s)
    2. Data sources
  - c. Identify and enter new measurement(s) data
  - d. Compare baseline and new measurement data to determine change
  - e. Enter findings
  - f. Compare outcomes to target (identified in the strategic statement)
  - g. Indicate achieved change for Key Challenge (Y/N)
  - h. Indicate achieved change for Focus Area (Y/N)
  - i. Identify and enter next steps
  - j. If next steps indicate additional focus on the target, identify and enter a date for the next measurement to occur



2. Team members will be able to determine the most appropriate method for communicating the results and the evidence of the results to an identified audience (*Bernhardt, 2004*).
  - a. Newsletter(s)
  - b. Article in local paper
  - c. Public meeting
  - d. Special event
  - e. School portfolio
  - f. Web site
  - g. School Summary Report
  - h. Synopsis for staff meeting
  - i. Other
3. Team members will be able to generate a document and/or event plan for the vehicle selected to disseminate the information to an identified audience (*Bernhardt, 2004*).
4. Team members will be able to generate appropriate visual representations to communicate the results (*Using Data to Guide Action for School Improvement 2012*).
  - a. Color-Coding the Data (Appendix C)
  - b. Creating Visual Displays of the Data (Appendix D)
  - c. Understand the appropriate type of display (graph or chart) for certain
  - d. Types of data



### C. Measurement:

1. Team members will be able to conduct various methods of analyzing data over over time and cross sectionally and know what types of analysis are appropriate for certain outcome desires
  - a. cohort
  - b. Trend
  - c. panel
  - d. matched I.D.
2. Team members will understand the importance of establishing a baseline and will be able to Identify the process for setting baselines for measuring the variable of interest
3. Team members will understand how to isolate a variable or variables to be measured in an evaluation
  - a. Identify test or control variables that may interfere with the evaluation
  - b. process for controlling for non-measured (control) variables



4. Team members will be able to properly interpret various test scores
  - a. scale score
  - b. raw score
  - c. Percentile
  - d. normal curve equivalent
  - e. cut scores (points)
  - f. standard error of measure (confidence intervals)
  - g. common errors made in using test scores
  - h. Summative tests versus formative tests
5. Team members will know and be able to apply the basic design and ethics of several quantitative evaluation models
  - a. Control and Treatment group(Experimental design)
  - b. Time series
  - c. Non-equivalent control groups
6. Team members will be able to construct a process to measure levels of program implementation and cost associated with the program.
  - a. program fidelity
  - b. spill-over effects
  - c. cost benefit analysis



# PD for Data Analysis

## Levels:

- Each level will go deeper and progressively expand the skills and concepts learned
- Each level will involve work in each of the four questions
- Complete cycle of data analysis will be completed at each level
- Current work is on Level 1; future work will add levels





# PD for Data Analysis

## Advantages of standards model

Allows

- Integration of the training curriculum with the dashboard and other available data tools
- Vertical and horizontal expansion of the scope as capacity and expertise are developed
  - Additional indicators
  - Additional levels
- Distillation of existing formats, sources, and practices



# PD for Data Analysis: Delivery Model

Once the content is developed

- Professional developers from each ESU will be trained
- ESU professional developers will deliver training to key district personnel
- Key district personnel will deliver the training to the teacher level within the district
- Professional developers will follow up with districts and provide assistance with implementation after initial training



# PD for Data Analysis

Training materials will be designed for inclusion in learning management software

- ESU use in training districts
- District use in training teachers
- Personnel review
- Availability to use when looking at district's own data
- Online and on demand guided practice



# PD for Data Analysis

## Advantages of the delivery model

- Allows presentations to smaller groups
  - Guided practice
  - Work with live data from the district
  - Hands on with any technical skills
- Allows coaching, follow up, and assistance in implementation
- Quicker delivery to Nebraska districts



# PD for Data Analysis Timeline

## **September 2013**

Outline of Literacies (guiding document) presented to ESU PDO

## **Fall 2013**

Used in fall CIP workshops

## **Fall 2013**

Training of ESU Professional developers

## **Fall 2013/Winter of 2013-2014**

Level 1 delivered to districts

## **2013-2014 and 2014-2015 and beyond**

Ongoing delivery to teachers in districts

Future levels implemented



# PD for Data Analysis

## Strengths

Collaborative with ESU professional development staff

allows the identification of appropriate strategies,  
Intervention, and Professional Development based on ESU staff expertise

Standardized

Shared consistent knowledge statewide

Sustainable

Based on existing staff and resources

Measureable

Specific literacies, concepts, and indicators can be evaluated for success  
Allow follow up on implementation



# Data Use

*Makes CIP Real for Every Accredited  
School in Nebraska*



Seen in our CIP External Reviews

<http://www.education.ne.gov/APAC/Documents/School-Improvement/5yrschedule.pdf>

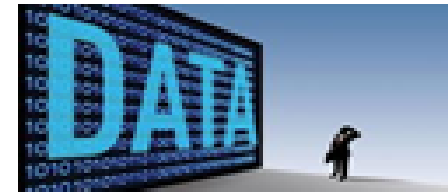




# CIP 2013-14 Workshops

## “A Focus on Data”

- Norfolk: September 19-20
- Kearney: October 7-8
- Gering: October 23-24
- Lincoln: October 29-30







# Data portion of CIP workshops

- A portion of the Data Cadre Training that is being developed
- Training on the DRS system
- Time for districts and ESU staff to sit and work in the district's own data



# Preparation for the CIP workshops

## Districts

- Touch base with ESU PD staff and request their help during the workshops
- Work with ESU staff on starting a conversation about data access of district data so the ESU can assist with PD needs determined through data analysis
- Be sure your DRS activation is working so you can access the secure site (this can take up to 24 hours to process so check early)

## ESUs

- Look at list of schools in your ESU that are conducting an accreditation visit and contact them to offer assistance
- Work with districts on data sharing agreement discussion
- Become familiar with the district's data and the DRS site



What could be some research  
questions to answer?  
What should be added to DRS?  
What Metrics should be in  
Dashboard?