



Nebraska Council
of School Administrators

NEBRASKA EDUCATION DATA SYSTEMS **LEGISLATIVE STUDY**

Developed in Response to Legislative Resolution 264



31 July 2014



TABLE OF CONTENTS

Preface	1
Foreword from the Commissioner.....	2
Executive Summary.....	3-4
Assessment of the Current Education Data System	5-8
Assessment Methodology.....	5-8
State Data Systems	9-13
Accountability Requirements	9-11
Systems to Support Accountability.....	11
Additional State Systems	12-13
District Data Systems.....	13
Findings	14-27
Availability of Systems.....	13-17
NETA Teaching and Learning Responses	18
System Need.....	18-19
Student Information Systems.....	20
System Cost and Accountability Burden	20-21
Likelihood of Participating.....	22
Data Use Perceptions	22
Survey and Focus Group Conclusions.....	23-24
ESU Data Systems	24-25
Assessment of Current Education Data Systems	25
Adequacy for Reporting	25
Level of Integration.....	26
Adequacy of Staff.....	26
Adequacy to Support Instructional Improvement Initiatives	26-27
Costs of the Education Data Systems	27
Current Performance on DQC’s 10 Essential Elements for Effective Data Use.....	28
Summary of Current Data System Challenges	29
Future Vision.....	30-34
The Role of the State Education Agency in Promoting Continuous Improvement	34
Recommendations	35-37
1, 3, and 5 Year Roadmap	38-39

Financial Investments and Returns..... 40-41

Budget Request for Investment 40
Estimated Financial Returns..... 40
Reduced Accountability Costs..... 40
Reduced Technology Costs for Districts..... 41
Return on Investment..... 41

Recommended Roadmap Meets the Needs and Priorities of Nebraska 42-45

Appendices 47-89

Appendix A: Study Contributors 48
Appendix B: Glossary of Terms..... 49-50
Commonly Used Acronyms 50
Appendix C: Description of Systems 51-54
 Teaching and Learning Systems..... 51-52
 Administrative Systems 52-53
 Back Office Systems 54
Appendix D: Survey of District Leaders 55-74
Appendix E: Survey of NETA Membership..... 75-84
Appendix F: References 85
Appendix G: Legislative Resolution 264 86
Appendix H: Complete Budget Estimate 87-89

PREFACE

The One Hundred Third Legislature passed Legislative Resolution 264 whose purpose is stated as follows:

The purpose of this resolution is to examine the education data system. The study shall include an assessment of the adequacy of the current data system maintained by the State Department of Education to provide timely access to relevant and accurate data to meet various needs, including information for teachers in public schools about student achievement in their classrooms, objective research regarding educational practices, data for policy formation and review, and accountability to the public regarding the performance of the public schools.

The study contained in this document was developed in response to LR 264 to include, but not be limited to, the following topics:

1. The costs of the data system;
2. Legislative access and public access to the department's data system;
3. The role and inter-relationships between the Nebraska Student and Staff Record System, the Consolidated Data System, the State of the Schools Report, and the Statewide Longitudinal Data System as developed pursuant to federal grant funding;
4. Timeliness and access to financial information related to school spending, budgets, taxes, and state aid;
5. Adequacy of school staff data in the Nebraska Student and Staff Record System in relation to teacher and classified staff qualifications, assignments, degree level, college credits, and experience; and
6. Any other issue related to the education data system that the study committee deems important.

The Commissioner of Education, Dr. Matt Blomstedt, further directed that, based upon the assessment of the current data system, the study make specific recommendations and propose a high-level one, three and five year plan to improve, upgrade, and modernize the Nebraska Education Data System to meet the needs of Nebraska's public education system.

The study of Nebraska education data systems gathered information on three types of systems (Teaching and Learning, Administrative, and Back Office) as well as the cost and effort associated with data and accountability submissions. Superintendents and technology educators were invited to participate in a survey of system availability and importance. The Nebraska Council of School Administrators (NCSA) recommended district leaders to participate in virtual focus groups on each system type. The NCSA also recommended district financial personnel to participate in individual interviews detailing the cost associated with education systems and data submission in their districts. Specific briefings and interviews were held with NCSA, the Nebraska State Education Association (NSEA), the Education Service Unit Coordinating Council (ESUCC), and Nebraska Department of Education (NDE) leaders. Over 200 education leaders in Nebraska participated in the study.

FOREWORD FROM THE COMMISSIONER

MATTHEW L. BLOMSTEDT, PH.D.



Nebraska is committed to improve the achievement outcomes for all students. To this end, the Nebraska Department of Education is committed to a process of continuous improvement. This will require us to embrace continuously evolving best practices throughout the system of education, and require the active involvement of all of Nebraska’s education leaders and professionals. In this context, our education data systems play a key role to:

1. Provide measures of achievement outcomes to guide the continuous improvement process; and
2. Put relevant information in the hands of those educators that day-by-day can positively influence instruction.

In commissioning this study pursuant to LR 264, I directed that the study take a broad view of education across the state – one that is not about accountability alone, but about the myriad possible and positive uses of information being collected. We have to build an education data system that interacts with the goals of the state; the goals for the district; the goals of individual students.

Moreover, I directed that the study carefully consider the entire “system of education” and develop a cohesive vision and plan as to the Nebraska Education Data System required to best serve that vision. When I think about what the whole system has to look like, ultimately, it has to have a system of supports that are going to give the teacher the best opportunity to succeed. The “system of education” necessarily spans NDE, the ESUs, the districts, students and parents, as well as the broader set of legislative and community stakeholders.

In this vision, NDE is part of the system, not top of a hierarchy. I tasked the study to consider the changing role of NDE and how best the state can lead, facilitate, collaborate, and enable the districts to provide the very best education to our kids while preserving their autonomy to innovate, their ability to choose, while ensuring technology is uniformly available across districts large and small.

I would like to recognize the organizations that co-sponsored this report: Educational Service Unit Coordinating Council, Nebraska Council of School Administrators, and the Nebraska State Education Association. In addition, I would like to thank the over 200 people from these organizations and from the ESUs, districts, and Nebraska Education Technology Association that contributed their time to provide input to this study.

EXECUTIVE SUMMARY

Nebraska spends an estimated \$100 million annually for technology systems, software systems, and accountability data submissions by the public school districts and the Nebraska Department of Education (NDE).

The NDE systems and applications are largely focused on satisfying Federal and State accountability reporting requirements and do not directly contribute to supporting teaching and learning. The districts submit annual collections of data to support accountability to the state using a combination of automated and manual methods. An estimated 655,200 hours are spent by districts preparing the required collections for each year's accountability data submission.

Each district has selected its own set of administrative, teaching and learning, and back office applications. There is a wide difference in the number of applications that are available in small districts versus larger districts due to budget, staff, and capability disparities. The student information system (SIS) is the single most important application for districts, supporting the day-to-day operation of schools, typically requiring a major investment in licensing, infrastructure, support and professional development. Outside of Nebraska's largest districts, the tools are poorly integrated, there is little support for data-driven decision making, and modern tools are not available to support instructional improvement necessary for the state's education initiatives of blended learning, teacher and principal evaluation, career readiness, and education intelligence.

Nebraska's network of Educational Service Units (ESUs), the ESU Coordinating Council (ESUCC), and Network Nebraska are all contributing to improving the capabilities and the efficiencies of the data systems for the districts. However, the capabilities and support provided by the ESUs varies across the state. Additional capacity is needed.

The vision recommended by the study is a statewide data system that builds long-term capacity, efficacy and efficiency in the system of education. The study makes the following recommendations:

1. Ensure security, privacy, transparency, and the proper use of data the core of the Nebraska Education Data System implementation.
2. Unify the accountability data collection requirements into the Nebraska Education Data System to minimize the reporting burden on districts.
3. Require application vendors and other sources to provide data in a standard form specified by NDE directly into the Nebraska Education Data Standard (NEDS).
4. Leverage and strengthen Nebraska's ESU network, the ESUCC, and Network Nebraska to host, maintain, and sustain the Nebraska Education Data System, to support a statewide virtual help desk, and to train the educators in its use.
5. Leverage the state-level market to influence vendors, negotiate lower prices through competition, provide consistent functions and pricing across large and small districts, and expand the number and quality of instructional applications.
6. Invest in providing education intelligence - access to actionable insight - through a warehouse, business intelligence tools, and increased internal capacity for districts, policy makers, and researchers.
7. Invest in an integrated data system that spans the districts, the ESUs, and NDE to support continuous education improvement.

8. Integrate staff data from district and state data sources, link teachers to student performance and success, and add additional data to better support teacher evaluation and professional development.
9. Invest in the licensing, integration and training of an Instructional Improvement System that is cost-effective for districts of all sizes.
10. Develop the staff and processes necessary to sustain the Nebraska Education Data System.

The proposed implementation builds upon pilot activities funded by the State's \$4.3 million Statewide Longitudinal Data System (SLDS) grant and scheduled for SY 2015. The system leverages the Ed-Fi data standard and set of royalty-free technologies. The Ed-Fi standard is directly aligned to the U.S. Department of Education Common Education Data Standards (CEDS) and is in various stages of implementations in 22 states.

The proposed implementation roadmap for the Nebraska Education Data System estimates a three year investment of \$41,960,110, roughly evenly split across the three years. The rollout plan targets a phase in process over three years that could include 50 districts the first year, 150 the second year, and 245 during the third year.

The primary benefits from the recommended investments will come from a greatly improved instructional system that improves student performance leading to greater student success. However the proposed approach also results in cost savings and efficiencies that will also provide a financial return from substantially-reduced accountability costs and from reduced technology costs to districts. The projected cumulative net return for the investment over five years is \$44.8 million.

ASSESSMENT OF THE CURRENT EDUCATION DATA SYSTEM

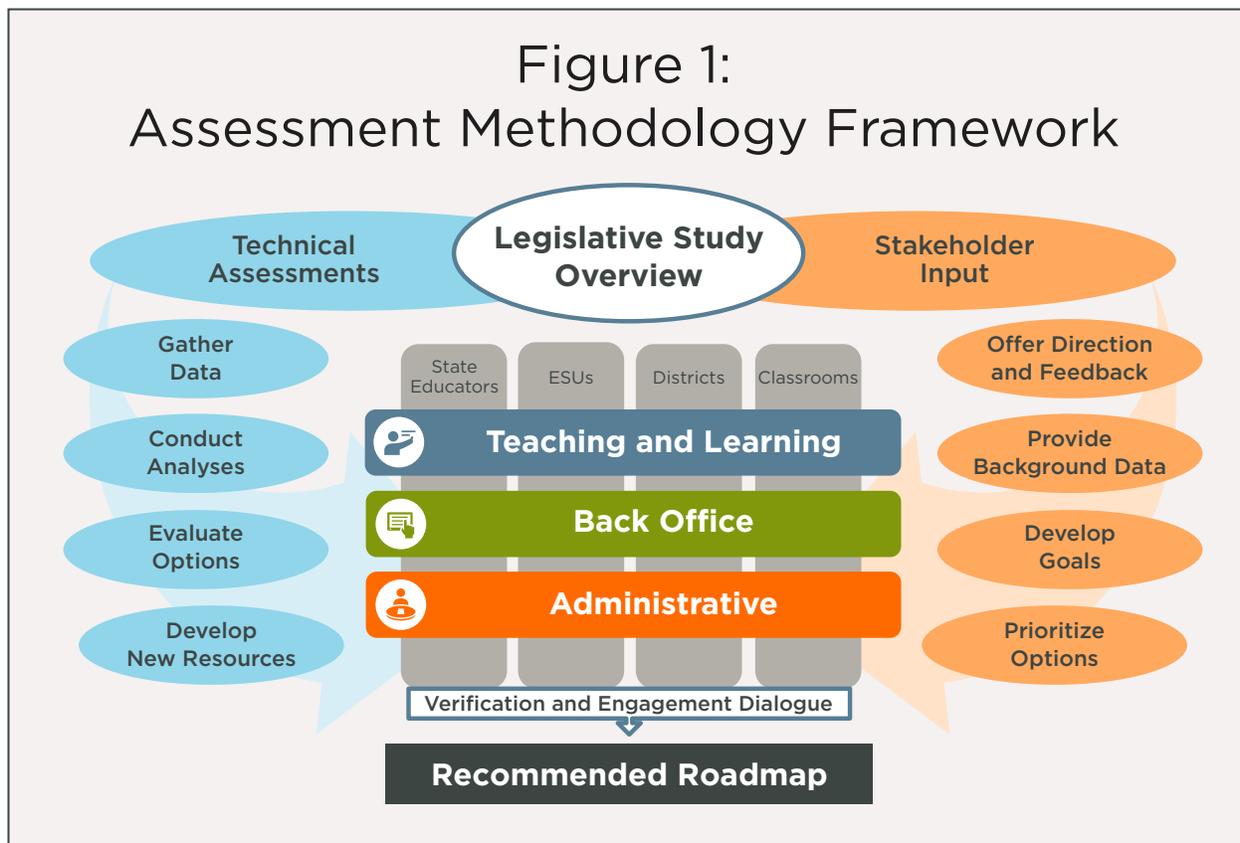
The Nebraska education data systems are organized as follows:

- The Nebraska Department of Education fields a set of applications at the state level largely focused on State and Federal accountability.
- Each district has its own set of administrative, teaching and learning, and back office applications for “operating” the business of education with the district. The districts submit annual collections of data to support accountability to the state using a combination of automated and manual methods.

This section provides an overview of state and district education data systems and assessment of their capacity and capabilities to support future Nebraska education needs, as directed by Legislative Resolution 264 (LR 264). The complete text of LR 264 is available in Appendix G.

ASSESSMENT METHODOLOGY

This study investigated the ecosystem of data and technology systems in Nebraska. The study sought input from educators across at the state, ESU, district, and classroom level. In addition to an inventory of existing systems and data collections, the study participants revealed their vision for students in Nebraska, how data and technology might assist in that vision, and the obstacles that systemic change may help overcome. Ultimately, nearly 200 education leaders in Nebraska participated in the study, representing over 80% of the students in the state. Figure 1 below illustrates the process of soliciting and interpreting feedback on the state technology and data ecosystem.



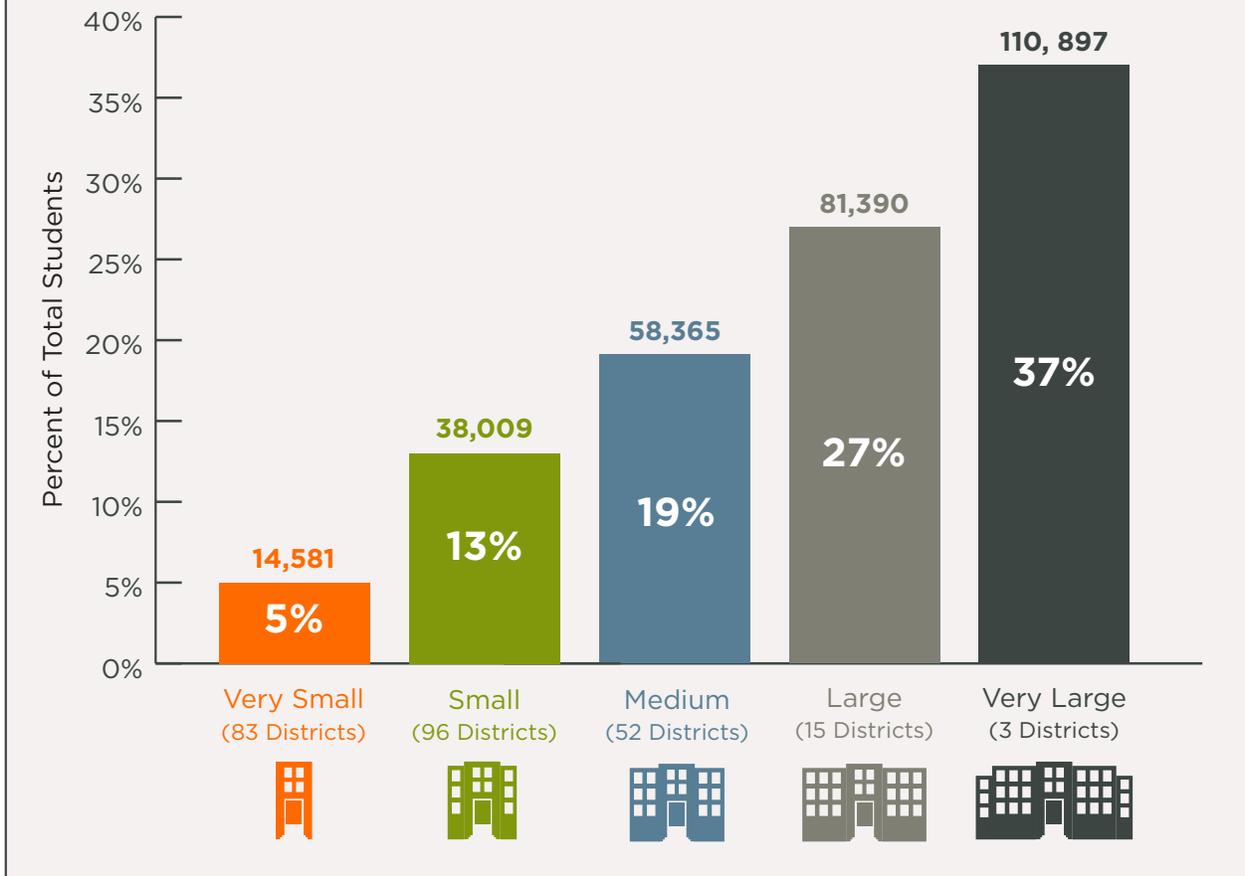
All district superintendents were invited to participate in a survey of system availability and importance. The survey introduced the concept of three types of systems: Teaching and Learning, Administrative, and Back Office. Superintendents reported whether their districts had a system in place, or whether their staff were performing the functions as described manually (or not at all). They were asked about the importance of each system. The combination of system presence (or absence) and perceived importance paints an emerging picture of districts' most-pressing needs. The superintendents reported their opinion on the need for data to inform upcoming strategic initiatives in the schools and districts, and their likelihood of participating in state or ESU-led systems if offered. The survey also asked district leaders to estimate high-level cost and employee effort associated with data and accountability submissions.

The Nebraska Council of School Administrators (NCSA) and NSEA recommended district leaders to participate in virtual focus groups on each system type. The study also conducted focus groups with members from the Nebraska Education Technology Association (NETA) and the Educational Service Units (ESU). In total, 40 educators participated in conversations on their existing systems and priorities. The focus group protocol built on findings from the survey. These conversations provided an opportunity for deeper conversation about the existing systems' features and interoperability. These district leaders also expounded on the survey respondents reported likelihood of participation, describing the conditions under which their districts might be likely to join statewide systems. The NCSA also recommended district financial personnel to participate in individual interviews detailing the cost associated with education systems and data submission in their districts.

The study engaged NCSA, NSEA, ESUCC, and NDE leaders throughout the process to help form the study methodology and interpret the findings. The groups also provided feedback on preliminary versions of the report. More information is available on contributing study participants in Appendix A.

The study classified the districts by number of students in order to better understand the nuance of districts' experience with information systems and accountability submissions. The three largest districts, Omaha Public Schools, Lincoln Public Schools, and Millard Public Schools are classified as Very Large. These three represent 37% of the student population in Nebraska. Large districts are those with student counts between 3,000 and 10,000. Medium districts are those with student populations between 590 and 3,000 students; this grouping was informed in part by those districts that self-identify as "mid-size" in the Schools Taking Action for Nebraska Children's Education (STANCE) Coalition. Small districts are those under 590 students but above 250. Very Small districts are those with less than 250 students. Figure 2 below shows the percent of total students in Nebraska represented by each of the size classifications above. Figure 2: Percent of Total Students Represented by Group

Figure 2: Percent of Total Students Represented by Group



Leaders from all districts were invited to respond to an online survey of Nebraska educational data systems. The complete survey is available in Appendix D. Of 249 public districts in Nebraska, 163 districts responded to the survey, representing 65% of districts. This sample size is strong enough to produce a level of confidence above 95%. Each district size grouping (e.g., Very Small) was represented by at least 58% of its districts. This is represented in Figure 3 below. In total, districts representing 77% of the student population participated in the study in some form.

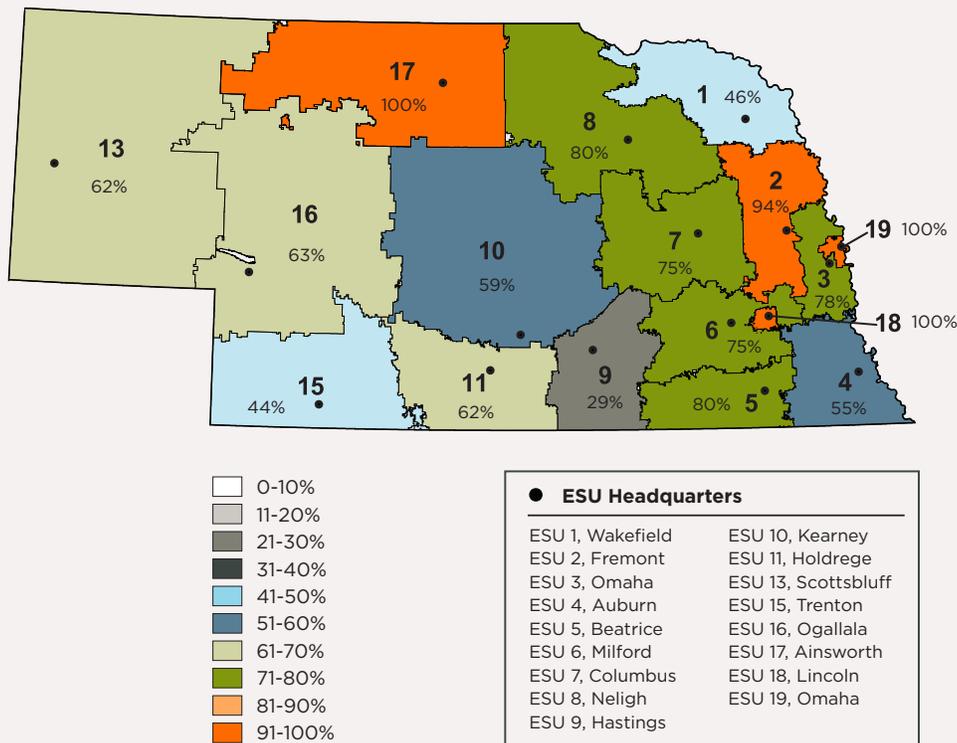
¹When the study was conducted, there were 249 districts in Nebraska. As of July 1, 2014 there are 245 districts. The study will reference the 249 sample size; future recommendations plan for 245.

Figure 3: Response Rate by Size Classification



Each ESU was also well-represented in the survey responses. ESU 2 and ESU 17 were the most represented, as shown in Figure 4 below.

Figure 4: Response Rate by ESU



- 0-10%
- 11-20%
- 21-30%
- 31-40%
- 41-50%
- 51-60%
- 61-70%
- 71-80%
- 81-90%
- 91-100%

ESU Headquarters	
ESU 1, Wakefield	ESU 10, Kearney
ESU 2, Fremont	ESU 11, Holdrege
ESU 3, Omaha	ESU 13, Scottsbluff
ESU 4, Auburn	ESU 15, Trenton
ESU 5, Beatrice	ESU 16, Ogallala
ESU 6, Milford	ESU 17, Ainsworth
ESU 7, Columbus	ESU 18, Lincoln
ESU 8, Neligh	ESU 19, Omaha
ESU 9, Hastings	

STATE DATA SYSTEMS

ACCOUNTABILITY REQUIREMENTS

The data collected by the state for accountability is driven by Federal and State legislation. Figure 5 shows the Federal, State and NDE reporting requirements and the systems developed to support these requirements.

Figure 5: Accountability Collections

Federal Level Requirements	State Level Requirements	NDE Requirements from Districts	Systems Developed to Support Requirements
EDEN/EDFacts CCD Fiscal CCD Nonfiscal CSPR CRDC	State of the Schools Report Data Report System NePAS Annual Financial Reports	NSSRS CDC AFR School Accreditation and Approval	NSSRS/eScholar CDC system AFR Online GMS Child Nutrition system Special Education ILCD NDE Teacher Cert. System NPERS

A new US Department of Education web site (<http://datainventory.ed.gov/>) describes all data reported to the Department of Education, with the exception of personnel and administrative data. It includes data collected as part of grant activities, along with statistical data collected to allow publication of valuable statistics about the state of education in this country. The ED Data Inventory includes descriptive information about each data collection, along with information on the specific data elements in individual collections.

The most significant Federal reporting requirements are as follows:

- **EDEN/EDFacts.** EDFacts is a U. S. Department of Education initiative to put performance data at the center of policy, management and budget decisions for all K-12 educational programs. EDFacts centralizes performance data supplied by K-12 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. (<http://www2.ed.gov/about/inits/ed/edfacts/index.html>)
- **CCD Fiscal.** The Common Core of Data (CCD) is a program of the U.S. Department of Education’s National Center for Education Statistics that annually collects fiscal and non-fiscal data about all public schools, public school districts and state education agencies in the United States. The data are supplied by state education agency officials and include information that describes schools and school districts, including name, address, and phone number; descriptive information about students and staff, including demographics; and fiscal data, including revenues. (<https://nces.ed.gov/ccd/index.asp>)

- **CCD Nonfiscal.** The primary purpose of the State Nonfiscal Survey Public Elementary/ Secondary Education Survey is: to provide basic information on public elementary and secondary school students and staff for each state, the District of Columbia, and the outlying territories with a U.S. relationship. State Education Agencies have one year to revise this data. Each year, we put out a revised file approximately one year after the original file is released. (<http://nces.ed.gov/ccd/stNfis.asp>)
- **CSPR.** The Consolidated State Performance Report (CSPR) is the required annual reporting tool for of each State, the District of Columbia, and Puerto Rico as authorized under Section 9303 of the Elementary and Secondary Education Act (ESEA), as amended. (<http://www2.ed.gov/admins/lead/account/consolidated/index.html>)
- **CRDC.** The Civil Rights Data Collection (CRDC) collects data on key education and civil rights issues in our nation’s public schools. CRDC collects a variety of information including, student enrollment and educational programs and services, disaggregated by race/ethnicity, sex, limited English proficiency and disability. CRDC used for administering and enforcing the civil rights statutes for which it is responsible. (<http://www2.ed.gov/about/offices/list/ocr/data.html>)

At the state level, the following Nebraska public reporting requirements are supported:

- **State of the Schools Report.** The State of the Schools Report, an annual report, provides information and data about Nebraska public schools and student performance. The report highlights the performance of students by district and school building in reading, mathematics, writing and science. The report summarizes Nebraska State Accountability (NeSA) test results by subpopulations of students. (<http://reportcard.education.ne.gov/>)
- **Data Reporting System.** The Data Reporting System (DRS) provides student achievement results for the state, school districts and individual school buildings. The DRS also displays federal accountability results, student characteristics data, early childhood education data, career education data, special population data, and education staff data in three main content areas, Quick Facts, Guided Inquiry, and Advanced Inquiry. (<http://drs.education.ne.gov/Pages/default.aspx>)
- **NePAS (Nebraska Performance Accountability System).** The State Board of Education and Nebraska Department of Education staff developed a state accountability system as required by state law 79-760.06 called Nebraska Performance Accountability Systems. In August 2012, the State Board of Education adopted NePAS, which is based on student scale scores within grades, buildings and districts. The system is intended to inform educators, parents, school board members, community members and policymakers about the learning progress of Nebraska schools and school districts. (<http://www.education.ne.gov/assessment/NePAS.html>)
- **Annual Financial Reports.** AFR data and other financial information is publically available for ESUs and school districts at <http://www.education.ne.gov/FOS/Index.html> .

In addition, NDE must respond to public data requests. Pursuant to the Nebraska public records laws, the Nebraska Department of Education (NDE) will provide access to or copies of NDE records upon written request, unless the records are specifically required to be kept confidential or the records are permitted to be kept confidential.

(http://www.education.ne.gov/nssrs/docs/Nebraska_Data_Policy_December_2010.pdf)

To satisfy these Federal and State accountability requirements, NDE requires districts to submit data annually for the following:

- **NSSRS.** The Nebraska Student and Staff Record System (NSSRS) is the Nebraska Department of Education's primary method of data collection from Nebraska public districts. Refer to NSSRS through the Years for details of how the system has evolved. Data collected via NSSRS will be used for state and federal reporting - including the State of the Schools Report (<http://reportcard.education.ne.gov>) and Data Reporting System (<http://drs.education.ne.gov>)
- **Consolidated Data Collection.** The Consolidated Data Collection (CDC) is a system designed to collect data for Federal and State reporting that is not collected through the Nebraska Student and Staff Record System (NSSRS). CDC is a data collection available on the NDE Portal. The NDE Portal is available via a link on the NDE homepage: www.nde.state.ne.us or by directly accessing the link: (<http://portal.nde.state.ne.us>)
- **Annual Financial Report (AFR Reporting).** District financial data and audit information is collected annually from school districts. In addition, district's narratives are submitted describing Limited English Proficiency Programs, Poverty Programs, and expenditures for ARRA Funds. The AFR Online system accepts the data submitted in standardized Excel spreadsheets. (<http://www.education.ne.gov/FOS/SchoolFinance/AFR/>)

SYSTEMS TO SUPPORT ACCOUNTABILITY

To support the data collection and reporting cycle, NDE maintains the following systems

- **NSSRS / eScholar, included Student Unique Identifier.** The unique identification of students across time and location has been identified by the Data Quality Campaign and in the America COMPETES Act as a fundamental element of an effective Longitudinal Data System Without unique identification of students, any analysis of an individual's program participation, academic or related history becomes virtually impossible to undertake. (<http://www.escholar.com/documents/Selecting%20Uniq-ID%20Systems%20for%20Students%20-%20mb20090831.pdf>)
- **Consolidated Data Collection.** The Consolidated Data Collection (CDC) is a system designed to collect data for Federal and State reporting that is not collected through the Nebraska Student and Staff Record System (NSSRS). CDC is a data collection available on the NDE Portal. The NDE Portal is available via a link on the NDE homepage: www.nde.state.ne.us or by directly accessing the link: (<http://portal.nde.state.ne.us>)
- **AFR Online.** The AFR Online system accepts financial data submitted in standardized Excel spreadsheets by districts. AFR Online is available through the NDE Portal. (<http://www.education.ne.gov/FOS/SchoolFinance/AFR/>)
- **School Accreditation and Approval.** Accredited schools must comply with 92NAC 10, the rules and regulations which govern standards and procedures for the accreditation of all public schools and any nonpublic schools that request state accreditation. Districts/schools may also choose to be accredited by the AdvancED/North Central Association. Approved schools must comply with 92 NAC 14 the rules and regulations which govern standards and procedures for the approval and legal operation of all non-accredited nonpublic schools in the state. (<http://www.education.ne.gov/APAC/>)

ADDITIONAL STATE SYSTEMS

Additional systems are maintained in areas where there is joint involvement of the state and districts:

- **Grants Management System (GMS).** The GMS is a web-based system used by the Department for processing various grants and plans. The system supports application submissions, amendments, and approval as well as the issuance of grant award notifications. The system also supports the processing of payments against grant awards through reimbursement requests. A majority of grants continue to be placed on the GMS which has become the principal method for processing Department issued grants. (<http://www.education.ne.gov/gms2/index.html>)
- **Child Nutrition System.** The Child Nutrition System administers the National School Lunch Program (NSLP) - a federally assisted meal program. Based upon income eligibility guidelines, children at participating schools are eligible for free or reduced price lunches. (<http://www.education.ne.gov/ns/index.html>)
- **Special Education (ILCD).** The Improving Learning for Children with Disabilities (ILCD) process has the following objectives: 1. to identify gaps between current results and desired outcomes; 2. to facilitate the development of improvement strategies at the district level; 3. to document the implementation of federal and state laws and regulations; and 4. to document positive outcomes for children with disabilities. It is a partnership between the NDE Special Education Office and Nebraska's School Districts to gather data, analyze results, identify gaps with both Part B and Part C services, rate district performance, stimulate the development of improvement strategies, and develop and implement improvement strategies for the district. The ILCD process relies on multiple sources of data (including, but not limited to: parent/staff surveys, functional outcomes, graduation rates, drop-out rates, student file reviews, performance of students with disabilities on state-wide and local assessments) to gauge the effectiveness of special education supports and services for children and youth with disabilities. The ILCD system that displays district data around eight Inquiries including self-assessment ratings by the districts. (<http://www.education.ne.gov/SPED/index.html>)
- **Nebraska Department of Education Teacher Certification System.** The Nebraska Department of Education defines the requirements and offers Teaching, Administrative, and Special Services certificates/permits. NDE also approves Teacher Preparation Programs. A web site is maintained to assist current and aspiring educators. The Teacher Certification System allows teachers to apply, renew, or update their certification online. (<http://www.education.ne.gov/tcert/index.html>)
- **Nebraska Public Employees Retirement System (NPERS).** The Nebraska Public Employees Retirement Systems (NPERS), under the direction of the Public Employees Retirement Board (PERB), administers several statewide retirement systems and one deferred compensation plan for the State of Nebraska. All five mandatory retirement plans are governmental plans as defined under Internal Revenue Code § 414(d) and 29 U.S.C. § 1002(32) [i.e. ERISA § 3(32)]. The voluntary Deferred Compensation Plan (DCP) is instituted under IRC § 457(b). NPERS carries out its mission from one location in Lincoln, Nebraska. The five mandatory plans NPERS administers are for State, County, School, Judges and Patrol employees. The voluntary Deferred Compensation Plan is administered primarily for State, Judges, and State Patrol employees, however County employees are eligible to participate if their county does not offer a voluntary plan. (<http://npers.ne.gov/SelfService/>)

NDE is developing a new **Statewide Longitudinal Data System (SLDS (P-20))** to support the long term reporting and analytics needs of both NDE and the districts. “Better decisions require better information” is the principle that lies at the heart of the Statewide Longitudinal Data Systems (SLDS) Grant Program. Through grants and a growing range of services and resources, the program has helped propel the successful design, development, implementation, and expansion of K12 and P-20W (early learning through the workforce) longitudinal data systems. The Ed-Fi data standard and set of Ed-Fi technologies are available from the Ed-Fi Alliance (www.ed-fi.org) without licensing fees. Nebraska is piloting an Ed-Fi transactional operational data store that directly receives data from the SIS. Data from the ODS is used to populate a longitudinal data warehouse and a set of student performance dashboards for teachers and school administrators. (<http://nces.ed.gov/programs/slds/>)

See Nebraska SLDS Grant:

(http://www.education.ne.gov/DataServices/PDF/Statewide_Longitudinal_Data_Systems.pdf)

DISTRICT DATA SYSTEMS

Types of Systems

The study identified three types of systems: Teaching and Learning systems, Administrative systems, and Back Office systems. These are presented in Figure 6 below. A chief distinction among the groups is the primary user. Teaching and Learning systems are tools that inform the daily efforts of teachers including: planning lessons, delivering content, assessing students’ understanding, differentiating instruction, and reflecting on data to inform decisions. Administrative systems are geared to school leaders – principals and specialists – to manage the operations of schools and student information. Back Office systems are those systems used primarily by district administrative personnel responsible for financial information, human resources, and procurement. A complete description of each system is available in Appendix C.

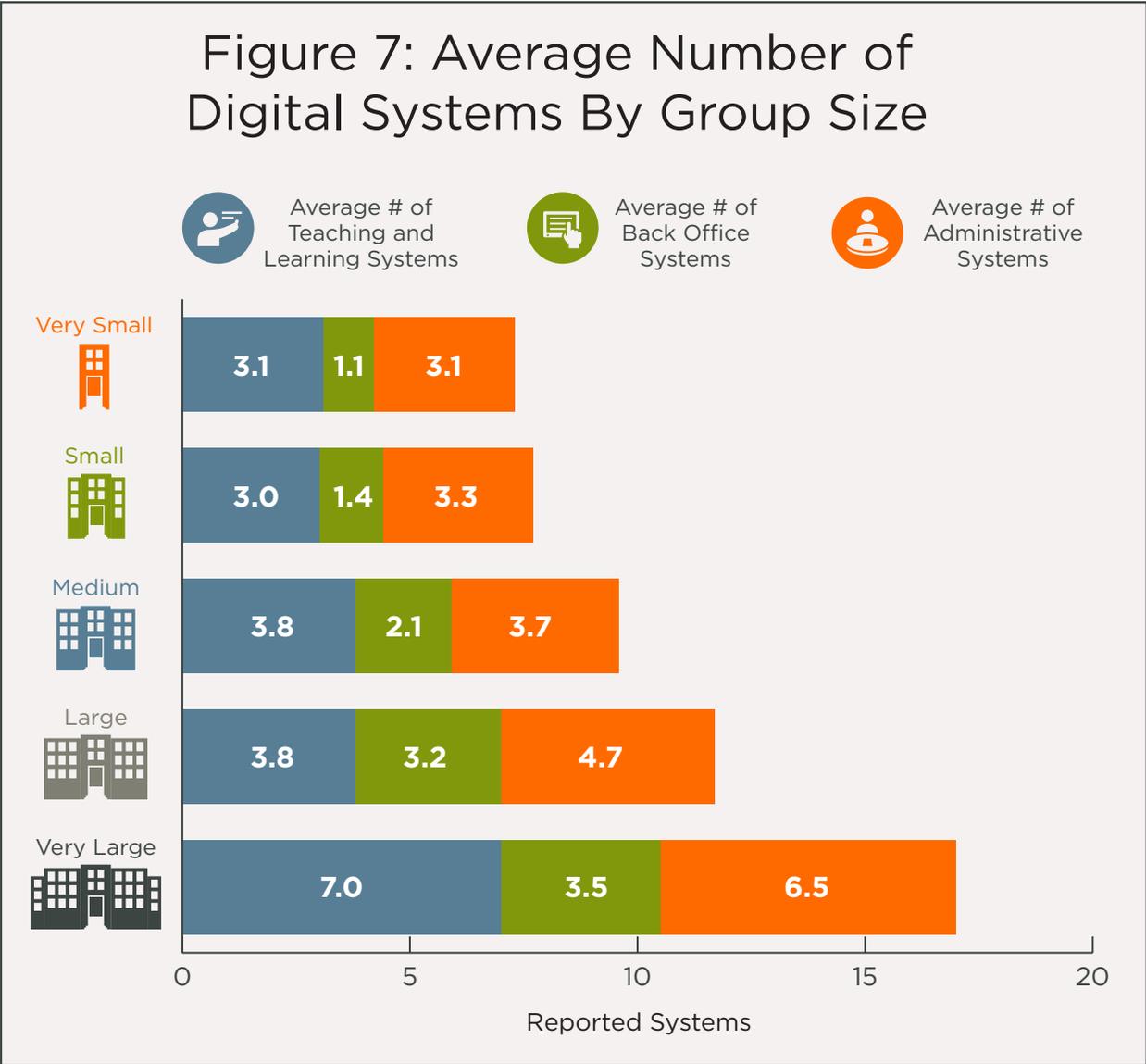
Figure 6: Education Data Systems

 Teaching and Learning Systems	 Administrative Systems	 Back Office Systems
<ul style="list-style-type: none"> • Data Management • Student Centric Assessment Tool • Learning Management System – Teacher centric • Professional Development • Educator Evaluation • Content Management • Progress Monitoring/ Response to Intervention System • Credit Recovery • Career Readiness 	<ul style="list-style-type: none"> • Student Information System • Test Analysis • Transportation • Nutrition Management • IEP Management • Guidance and Counseling • Library Management 	<ul style="list-style-type: none"> • Finance System • Human Resource System • Procurement • Substitute Management

FINDINGS

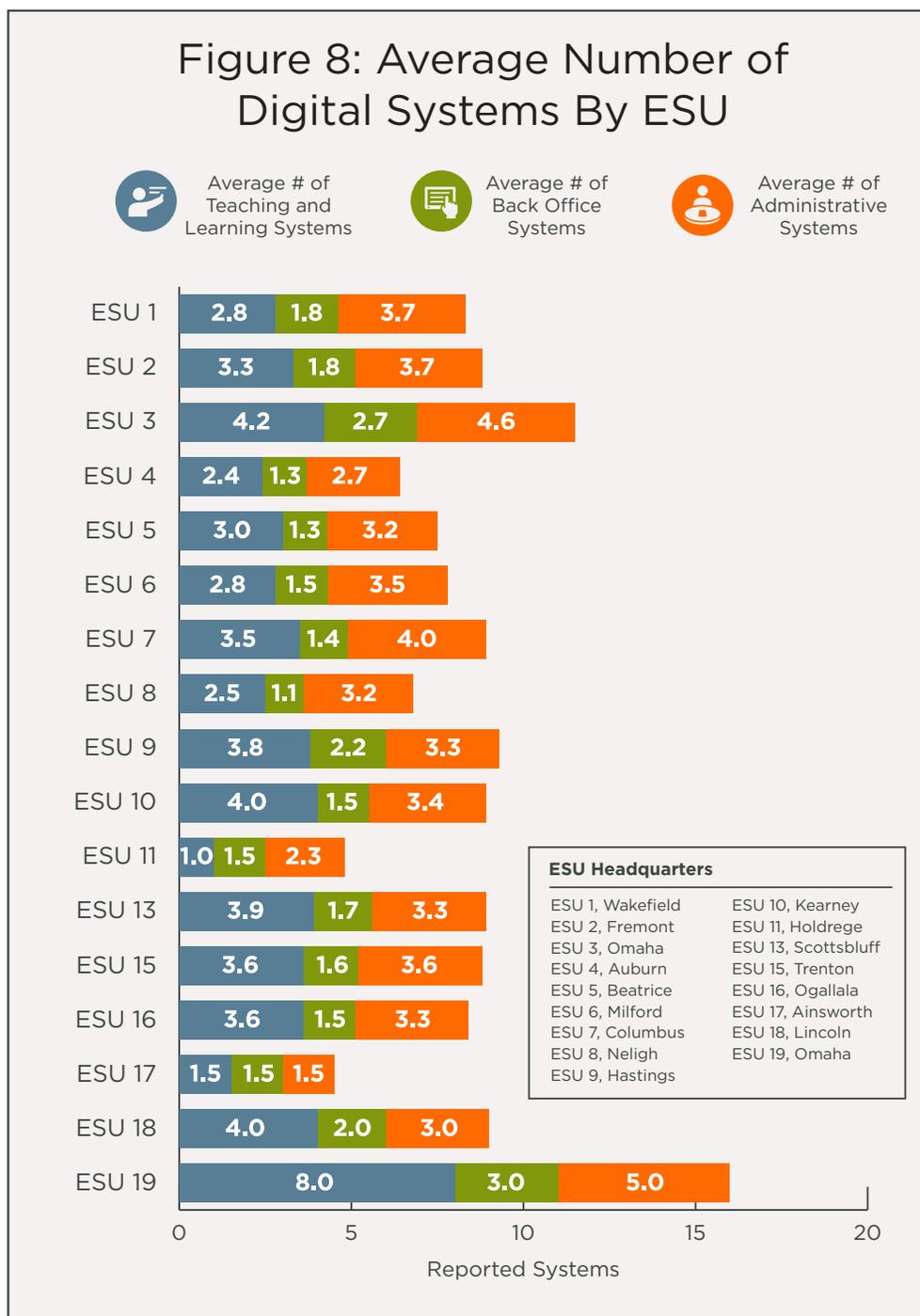
AVAILABILITY OF SYSTEMS

Districts reported an average of 8.4 digital systems out of a possible 20 identified, as shown in Figure 7 below. The average number of systems declined with each size grouping. Very Large districts reported an average of 17 digital systems; Very Small districts reported an average of 7.3 digital systems.



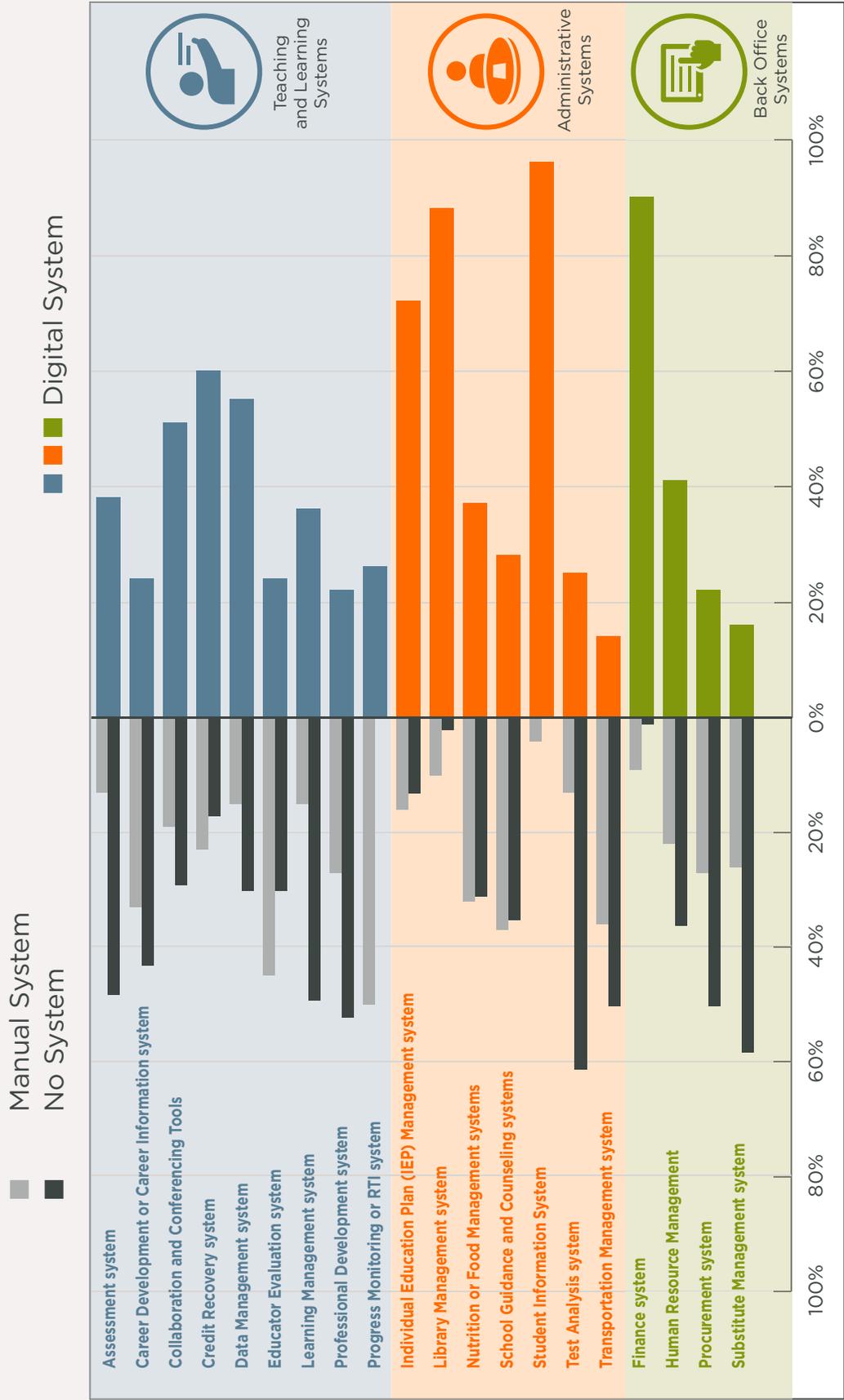
By system type, nearly all districts reported the presence of administrative and back office tools. Nearly all of the districts reported having a digital Student Information System, Finance system, and Library Management System.

The ESUs surveyed generally have more uniform availability of systems, as shown below in Figure 8.



The districts reported a general lack of tools and therefore significant manual effort in the Teaching and Learning category. The processes districts most frequently report performing manually are Progress Monitoring (RTI), Educator Evaluation, and Transportation. Over half of districts reported having no system, even for manually collecting and distributing data, for Test Analysis, Substitute Management, and Professional Development. Figure 9 depicts the system availability for each type of system for the surveyed districts.

Figure 9: System Availability



Participants in the Teaching and Learning Systems focus group described the manual effort often involved in gathering and distributing information related to successful implementations of key initiatives. This manual effort may be that one (or more) school leader gathers information on formative test results and distributes to teachers in paper format. It can also be that teachers are tracking and gathering student information on their own. Participants described challenges in these cases because data is not connected to other key systems, nor can it be easily analyzed against comparable benchmarks or cohorts of students.

“We do not have a comprehensive tracking system. Administrators provide some information to staff in electronic and paper form, but we have many assessment systems with no great way to tie them together. Some staff members just use paper and pencil.” – District Leader, Teaching and Learning Focus Group

A particular group of systems is relevant to NDE’s upcoming priorities: blended learning, implementing teacher/principal evaluation, and using data to support a cycle of continuous improvement. Digital systems may support the implementation of these objectives in so far as the systems are integrated with other key systems, usable, and save time for those responsible for the organization of new initiatives.

Figure 10: Alignment of NDE Initiatives to Supporting Systems

NDE Initiatives	System(s)
Blended Learning	Learning Management System
Teacher/Principal Evaluation	Educator Evaluation System, Professional Development
Data-driven education intelligence systems for continuous improvement	Data Management System, Assessment System, Test Analysis, Progress Monitoring System

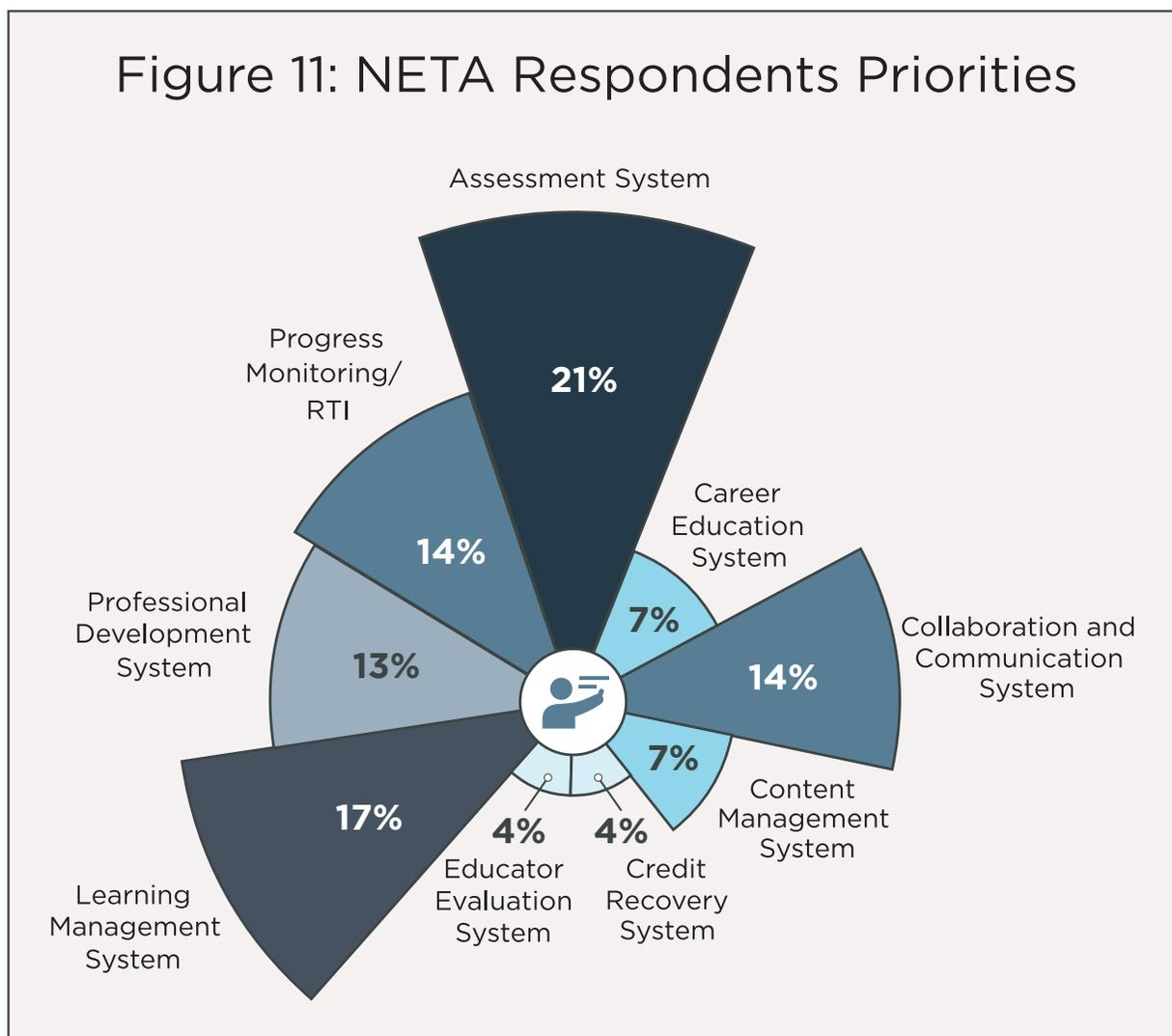
The systems that may support NDE’s priorities are sparsely present in districts. The Data Management System is the most ubiquitous of this group, but according to the focus group participants, the student information system is often performing some of the functions of a data management system.

“I challenge anyone to say they are ready for all of what is coming next.” – District Leader, Teaching and Learning Focus Group

“I know the important things will be the new initiatives – like linking teacher data to student data – and we haven’t found a way to do this.” – District Leader, Back Office Focus Group

NETA TEACHING AND LEARNING RESPONSES

Researchers invited members of the Nebraska Education Technology Association (NETA) to participate in a survey of Teaching and Learning system availability and importance. The complete survey is available in Appendix E. Two hundred forty four educators responded to the survey, representing the district size groupings fairly evenly. The survey asked educators to list the top three most important Teaching and Learning systems. Figure 11 shows the frequency in which a particular system was listed in the top three systems by NETA participants.



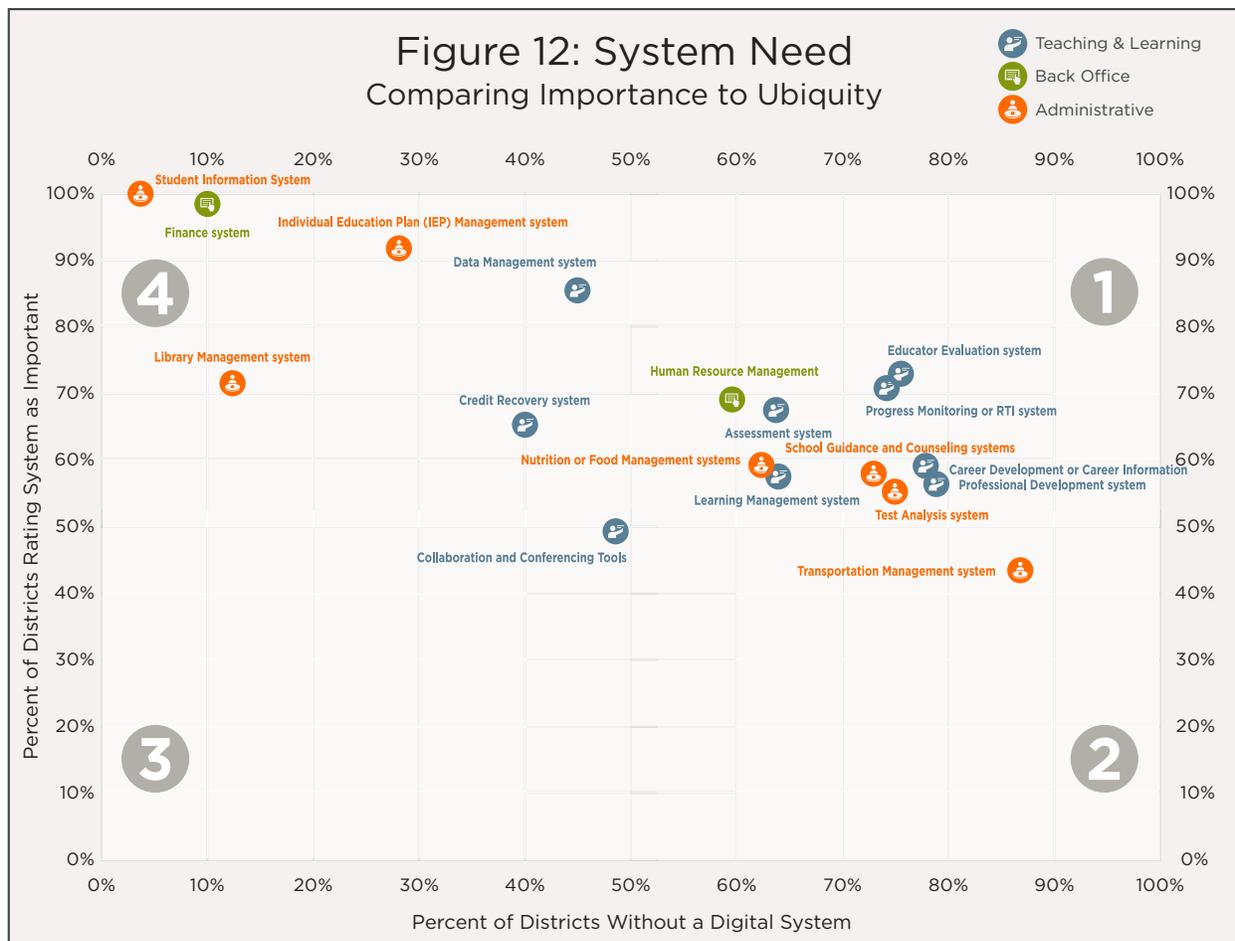
SYSTEM NEED

The larger survey asked district leaders to identify if their districts currently employ a digital system to perform the functions as described. Each district was then asked about the systems' importance. The systems that are most ubiquitous in the state (student information systems, finance systems) were most frequently rated as important. Certainly these are valuable to districts, but combining the absence of a system with its perceived importance may more accurately reflect districts' need for systems. Digital Teaching and Learning systems were frequently unavailable yet rated as highly important by district leaders.

The quadrant in Figure 12 illustrates the concept of system need. The vertical axis shows the percent of districts rating the system as highly important (the top two ratings for importance combined). The horizontal axis shows the percent of districts that do not currently have a digital system available.

Therefore, the quadrants represent the following:

- Quadrant 1: Highly Important, Not Readily Available (Most Need)
- Quadrant 2: Less Important, Not Readily Available
- Quadrant 3: Less Important, Less Available
- Quadrant 4: Highly Important, Highly Available



The systems that are clustered in Quadrant 1 are both unavailable and important. Teaching and Learning Systems are most likely to appear in this category. The systems in Quadrant 4 are highly important to districts but it is safe to assume they have already purchased these systems. The transportation management system is alone in Quadrant 3; in focus groups district participants confirmed that is was only a priority when logistically necessary. Collaboration and Conferencing Tools were alone in Quadrant 2. This is likely because few systems were considered entirely unimportant by districts.

The focus group participants elaborated on the capacity-building opportunity for each quadrant. For example, NDE may build capacity by systems in Quadrant 4 (likely already in place by districts) by negotiating lower costs if possible. For systems in Quadrant 1, NDE may consider selecting new systems to fill the need and setting standards for cost and integration to the NEDS.

STUDENT INFORMATION SYSTEMS

Overall, the respondents reported satisfaction with student information systems. The relatively lower satisfaction rates for flexibility and training suggest that districts feel locked in to their options of vendors for the SIS. The participants in the focus group on Administrative Systems revealed that the bulk of transition cost to a new SIS vendor is related to training users on the new system. Study participants named the training effort (along with data transferability and flexibility to accommodate necessary customizations) as a deterrent to switching systems even when dissatisfied. Small and Very Small districts reported feeling dissatisfied more often on all factors than their larger counterparts, but were still satisfied overall with their student information systems.

Figure 13 shows the top four SIS vendors cover over 95% of the state's students.

Figure 13: Student Information System Vendors

Name	Vendor	Districts	Dist %	13-14 PK-12 Membership	Student %
Infinite Campus	Infinite Campus	33	13.25%	119,340	38.82%
Powerschool	Pearson	165	66.27%	114,452	37.23%
EduPoint	Synergy	1	0.40%	37,879	12.32%
SIMS	ESU3	7	2.81%	23,685	7.70%
Schoolmaster	Tyler Technologies	16	6.43%	4,794	1.56%
GoEdustar	Harris School Solutions	12	4.82%	3,693	1.20%
Sycamore Education	Sycamore Leaf Solutions	6	2.41%	1,275	0.41%
Administrator's Plus	Rediker Software	3	1.20%	1,121	0.36%
JMC	JMC Inc	3	1.20%	855	0.28%
Other	Other	3	1.20%	304	0.10%
TOTALS		249		307,398	

The SIS is the single most important application for districts, supporting the day-to-day operation of schools. In addition because the SIS is the system of record for much of the student data, it also represent the single most important source for the state's data system. Four issues were identified with the respect to the SIS:

- Districts may not be receiving the best pricing for their SIS
- SIS pricing is generally not equitable across districts of different sizes
- Support (implementation services, training, help desk) is not consistent across different districts and vendors
- The willingness and capability of the SIS vendors to connect into the state's infrastructure varies

SYSTEM COST AND ACCOUNTABILITY BURDEN

Superintendents responding to the survey offered a high-level estimate of IT system cost. District bookkeepers provided more detailed financial information in the individual financial interviews. Their responses demonstrated relative consistency in percent of total district budget spent on Information Technology (between 2% and 3%) and an average overall per student cost of nearly \$250/student for total systems.

Although this study does not focus on the cost of networking, hardware, and other infrastructure, it is worth noting that districts reported paying for such activities through local bond issue and not the general district budget. It is also relevant to the upcoming blended learning initiative that districts are concerned about the cost related to reducing ratios of students to devices and replacing devices more frequently.

The survey also asked superintendents for an estimate of full-time employees (FTE) devoted to the effort of submitting accountability data. The survey respondents reported an average of six FTEs per district devoted to system and data management. The financial interviewees were more exact in their estimates of employee time for the state accountability submissions alone. Figure 14 reports the FTE count appropriate for district size grouping. If each of these employees costs an average of \$50,000 per year (salary, benefits, and other allocated expenses), then the accountability submission represents time worth over \$22 million per year.

Figure 14: FTE Cost of Accountability Submission

District Size	Reported FTE for Accountability Submission	Cost @ \$50,000 each per year
Very Small	1 FTE/District for 83 Districts	
Small	1 FTE /District for 96 Districts	
Medium	3 FTE/District for 52 Districts	
Large	6 FTE/District for 15 Districts	
Very Large	10 FTE/District for 3 Districts	
Total District Cost		\$22,750,000 per year
NDE Cost		\$2,500,000 per year

Beyond quantifying the value of their employees' time, focus group participants and financial interviewees discussed the burden of state accountability reporting in more depth. District leaders generally believe in the need for state-level data collection, but reported feeling frustrated about the return on their time investment. Participants frequently told researchers that the type of information sent to the districts was irrelevant to student learning, or that reports came back too late to impact instruction.

“The state should be there to assist districts in achieving their missions locally. Of course this will include regulation and accountability. But these reports are cumbersome and time-consuming, and ultimately they do not impact student learning. The purpose of data is to get it to the classroom level to change instruction and differentiate, but these reports don’t do that.” – District Leader, Back Office Focus Group

LIKELIHOOD OF PARTICIPATING

The overwhelming response by the survey respondents was that they were likely to join systems. The virtual focus group attendees discussed in more detail the “right conditions” for participation in these systems. Participants identified cost (and financial support from the state) as a key factor. In many cases participants reported being more likely to join a system that they do not currently have in their district, rather than switching vendors from an existing system. This is particularly relevant to those systems that will support NDE’s upcoming priorities (blended learning, teacher/principal evaluation, education intelligence). District leaders also told researchers that interoperability and data transferability would be ideal for joining a new system or cooperative purchasing agreement.

The focus group participants discussed the student information system separately from the others perhaps because of the large effort involved in implementing a new system. Participants were reticent to consider switching student information systems as they recalled either recent effort to implement a new system or the long history of customizations needed to make the system function appropriately for their districts. Study participants did, however, nearly universally support connecting the student information system to data collections.

“I think school districts are excited about the prospect of working together to strengthen the state as a whole.” – District Leader, Teaching and Learning Focus Group

DATA USE PERCEPTIONS

The survey asked district leaders their opinion on the importance of data use to state and local strategic initiatives. Researchers derived the questions from meetings with NDE and district stakeholders on their current initiatives and the highlights of the 2014 NDE State Data Conference. These initiatives include: implementing a teacher effectiveness framework, improving special education services, measuring student perceptual information, measuring the post-secondary outcomes of Nebraska students, measuring the success of early childhood providers, and strengthening credential-based career education in Nebraska. Respondents from all district groupings rated the use of data as highly important to achieve success in these areas.

“We use data for multiple things, but it is most effective when it is centered on student learning.” – District Leader, Teaching and Learning Focus Group

The focus group participants agreed that data use will be integral to achieving their local goals and improving student outcomes in Nebraska. They imagine that an integrated, efficient instructional improvement system could overcome any lasting resistance to data use, which is largely related to a lack of time, training, and support. In fact, districts perceive their investment –both time and money – in producing and sustaining custom applications as proof that there is unmet demand for systems that will ease the burden of data use on those that need it most.

**“Data availability has come so far that we’re swimming in it. But we can’t get it to do what we need with simplicity. We’re playing catch up to what’s possible.”
– District Leader, Back Office Focus Group**

SURVEY AND FOCUS GROUP CONCLUSIONS

The focus group participants discussed strategies for building capacity of the districts to meet the needs of all students. They agree that NDE and the ESUs are best suited to work together to scale innovation and systems to all districts. The strategies and priorities the participants identified are below.

1. The districts overwhelmingly support automating accountability submissions.

If the student information system could connect to a system that would validate the submission to the state from existing systems, limiting the redundancy and effort in data collection, the districts could redirect that effort toward the continuous improvement of student outcomes. This fits well with a vision of the state education agency as a contributor to core functions, while letting districts direct efforts to innovation.

2. The districts agree that the ecosystem will better support students and teachers if the systems are interoperable.

These will eliminate the redundancies in data and logistical information. The districts have immediate needs for interoperability, including: connecting the student information systems to those systems that analyze assessment results and special education systems. They would also like human resource systems to be connected to the new educator evaluation frameworks and professional development systems. The need for interoperability will only increase as new systems are introduced into the ecosystem.

3. The districts would like to leverage collective purchasing agreements when possible to lower costs of new or existing systems.

Those systems in particular are the student information system library management systems, substitute management, and transportation management. However, the effort associated with transitioning systems is an obstacle to participation for districts.

4. The districts are looking for particular guidance and assistance from the state for purchasing new technology systems that will support strategic priorities.

The systems for blended learning, teacher and principal evaluations, and education intelligence are particularly relevant. Districts want access to secure and private data warehouses with an education intelligence reporting layer for longitudinal outcome analysis. They would also like a comprehensive dashboard tool that serves as a one-stop-shop for student information relevant to the daily needs of teachers (differentiating for personalized learning and reflecting on practice). They are interested in connecting data from early childhood services to K12 classroom teachers. To support upcoming data cadre initiatives to include student perceptual information and school climate data, districts will need delivery and display systems that do not add to the burden of manually implementing new initiatives.

In fact, all of the above will only be possible for districts if they have access to efficient and effective systems, and re-direct their time and money away from accountability submissions and to continuously improving teaching and learning instead. The state should lead this effort by setting expectations of technology vendors interested in providing the above system to Nebraska districts. NDE will set expectations for operating on the Nebraska standards for interoperability, security, and privacy. The systems should be cost-effective, particularly with a group purchasing agreement negotiated by NDE and the ESUs.

ESU DATA SYSTEMS

Nebraska's 16 Education Service Units are chartered by Title 92 Chapter 84 to support the school districts as follows:

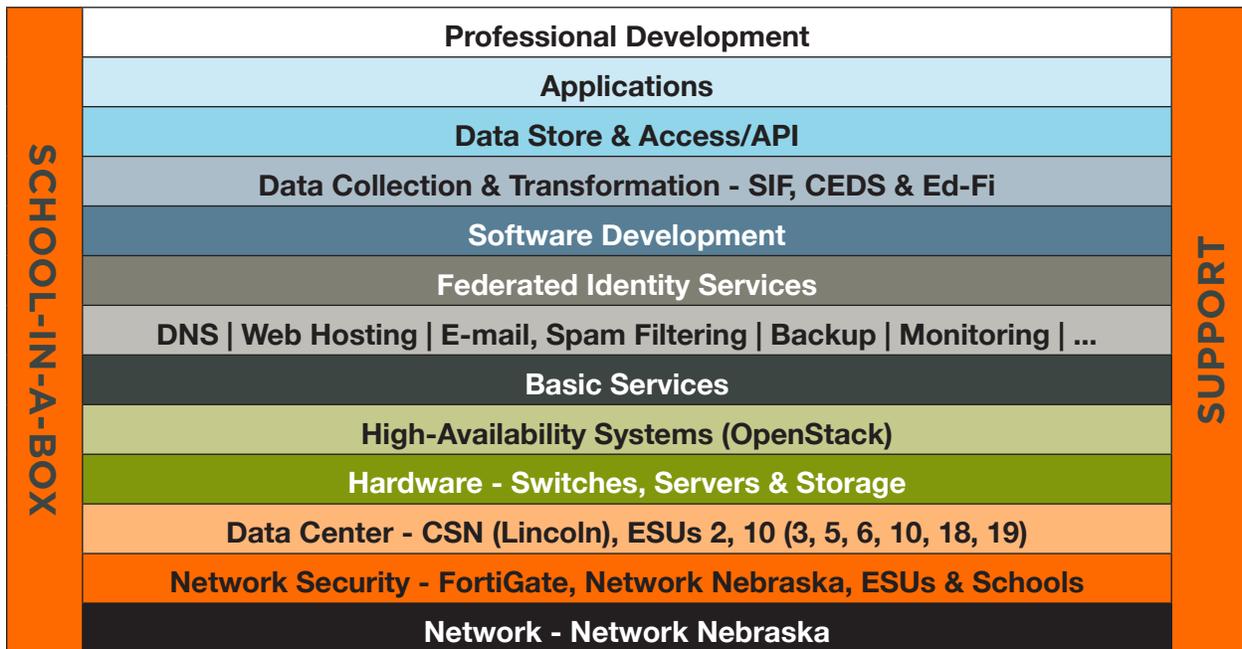
- Act primarily as service agencies in providing core services and services identified and requested by member school districts;
- Provide for economy, efficiency, and cost-effectiveness in the cooperative delivery of educational services;
- Provide educational services through leadership, research, and development in elementary and secondary education;
- Act in a cooperative and supportive role with the State Department of Education and school districts in development and implementation of long-range plans, strategies, and goals for the enhancement of educational opportunities in elementary and secondary education; and
- Serve, when appropriate and as funds become available, as a repository, clearinghouse, and administrator of federal, state, and private funds on behalf of school districts which choose to participate in special programs, projects, or grants in order to enhance the quality of education in Nebraska schools.

The ESUs are funded through state allocations and by providing paid services to districts. Two percent of this funding supports the ESU Coordinating Council (ESUCC).

The ESUs provide the statewide network infrastructure through Network Nebraska and support many districts with shared data centers, and basic software infrastructure (directory services, Domain Name System, email, web hosting, etc.). ESUCC is piloting a federated identity and single sign-on (SSO) capability.

The ESUCC has stated a long term vision to “provide an enterprise-grade, efficient and economical technology platform through which applications and services are delivered to improve school performance and learner outcomes.” This means expanding their service offerings to support a full range of data system offerings and services, as in Figure 15 below.

Figure 15: ESU Service Offerings



ASSESSMENT OF CURRENT EDUCATION DATA SYSTEMS

The Nebraska Education Data Systems were assessed along the following criteria:

- Adequacy for reporting
- Level of integration
- Adequacy of staff
- Adequacy to support instructional improvement initiatives
- Performance on Data Quality Campaign’s 10 Essential Elements for Effective Data Use

ADEQUACY FOR REPORTING

The current state systems meet the statutory requirements for Federal and State reporting. However, the accountability focus has limited the data provided for legislative and public access to accountability data and assessment scores. There are other areas of interest to the teachers, parents, community leaders and legislators that could be addressed if a broader data set existed across all districts.

The annual timelines for accountability reporting limits the timeliness of the data to support meaningful decision-making during the school year. The lack of timeliness and limited scope of the data collections has made the state reporting of little use to districts to inform instructional improvement.

Financial information in the AFR is reported in account summaries based upon the state-defined accounting system. This system is at too high of a level of granularity to easily provide data for public or legislative consumption that answers meaningful questions about whether the dollars are resulting in meaningful instructional improvement.

LEVEL OF INTEGRATION

The current structure of data systems provides no integration of data systems between districts. The exception to this is where a specific vendor that happens to be selected by multiple districts provides a level of integration (e.g., for transcript transfer).

Within a district, the data systems are not well integrated because of poor inter-vendor integration. There are a few noteworthy exceptions, as follows:

- The large districts have sufficient staff to build and sustain integrations between systems and to bring data from different systems into database and warehouses for reporting and analytics
- Single vendor suites typically integrate their own modules within a suite

The NDE Portal provides common access to state systems for users. In addition, the front end data collection systems are integrated with backend data reporting systems.

The districts' Student Information System generates most of the data required for the NSSRS data collections. Most of the data required by the CDC is a manual entry of computed data.

ADEQUACY OF STAFF

The medium to very large districts have adequate in size and capability staff to host, customize, maintain, and sustain their data systems. However, even there, there are many worthwhile projects that remain on the back burner. The small and very small districts however do not have the necessary Information Technology (IT) staff to field and maintain a robust set of education applications.

The small districts are often assisted by ESU IT staff. The ESU network also allows smaller districts to effectively pool resources for common software systems. However the capabilities and services provided by the ESUs are not uniform across the state. Moreover the ESUs are currently not staffed to support their larger support vision.

The NDE staff is adequate to support today's systems, but is not sufficient to support future systems. As the state's role changes to be a more active collaborator in instructional improvement systems, the NDE staff will need to expand and add capacity and capabilities and also add more leadership positions. A K-12 CIO has served as a critical success factor for the coordination of education data and technology in other states, and Nebraska would do well to follow suit.

ADEQUACY TO SUPPORT INSTRUCTIONAL IMPROVEMENT INITIATIVES

The state's Instructional improvement initiatives include the following:

- **Blended Learning** to implement instructional and content technologies to enhance teaching and learning to improve outcomes for students of all ages. It is promoted by education research as one of the most promising innovations to access and develop content for the face-to-face classroom, for distance learning, and for student learning outside of the classroom and the normal school day.
- **Teacher Evaluation** for principals and teachers based upon multiple components of performance including a teacher-generated goal related to student performance growth.

- **Career Readiness** by incorporating appropriate curriculum and programs to bring greater relevance and value to every student’s school experience, by providing opportunities for students to become aware of career choice throughout their education, and by helping students understand the relationship between today’s educational choices and tomorrow’s career potential.
- **Education Intelligence** to provide a statewide resource for districts to gather data from multiple sources, unify it into a single longitudinal data store, provide visualizations to understand the data, to apply analytics to understand correlations and trends, draw conclusions as to what the data shows and arrive at appropriate sustainable responses to the data.

The current systems do not meet the needs of these initiatives. The state needs new education data systems to include the following:

- Instructional improvement systems that include learning management, assessment creation and management, and learning content management
- A comprehensive data system that longitudinally links student performance over the years; links teachers and programs to students; and links early childhood, and postsecondary and workforce data with K-12
- Application(s) of teacher performance rating, observation, and surveys.

While current state data systems do not provide timely access to relevant and accurate data to meet various needs, recent initiatives are aimed at closing that gap, as follows:

- The Ed-Fi dashboards target providing information for teachers in public schools about student achievement in their classrooms
- The unified Ed-Fi data warehouse will provide a platform for objective research regarding educational practices, data for policy formation and review, and accountability to the public regarding the performance of the public schools.

COSTS OF THE CURRENT EDUCATION DATA SYSTEMS

Historically, the education data collection systems in Nebraska have been built using federal resources. Much of the ongoing support and maintenance of the systems remains federally funded as well.

The most recent federal investment was provided by a \$4.3 million Statewide Longitudinal Data Systems grant from the US Department of Education. The resources are supporting the creation of a data dashboard tool for teacher and administrators in school districts to access secure and appropriate data to support decisions in the classroom. As part of the implementation, an opportunity to restructure the data systems, warehousing, and collection approaches, using open source resources, provide a significant opportunity to eliminate ongoing license fees and increase the efficiency, effectiveness, and timeliness of the data collection.

Outside of Federally-funded investments, Nebraska spends an estimated annual \$100 million for technology, software systems, and accountability data submission, as follows:

- Based upon the district surveys, Nebraska districts spend roughly \$74.7 million per year on IT and systems.
- An estimated 455 FTEs are involved in the current data collection process at districts, representing an annual cost of \$22.75 million
- NDE spends \$2.5M per year on licensing, IT personnel and help desk supporting the accountability submissions.

CURRENT PERFORMANCE ON DQC'S 10 ESSENTIAL ELEMENTS FOR EFFECTIVE DATA USE

The Data Quality Campaign (DQC) is a nonprofit and nonpartisan national advocacy group founded in 2005. They now lead a partnership of nearly 100 organizations committed to realizing the vision of an education system in which all major stakeholders are empowered with high-quality data. Their “10 Essential Elements” are the follow-up to “10 State Actions” which together provide a roadmap for state policymakers to create a culture of continuous improvement through data use. States publicly report their progress each year.

In 2013 Nebraska demonstrated 3 of the 10 Essential Elements, as they did in 2011 and 2012. The DQC survey found Nebraska has succeeded in securely linking data between early childhood and K-12, establishing data governance structures, and offering data literacy training to teachers and principals to engage in continuous improvement. Other positive highlights include the funding committed in the state budget to sustaining a longitudinal data system.

Still, there is work to be done. The DQC roadmap to success suggests that Nebraska mature its data use in some of the following ways:

- Supporting the production of early warning systems
- Sharing teacher performance data with educator preparation programs
- Measuring teacher and principal effectiveness with components of student achievement and growth
- Providing parents of Nebraska children with access to their own children’s data
- Providing information to families about financial readiness for college choice (Data Quality Campaign, 2013).

SUMMARY OF CURRENT DATA SYSTEM CHALLENGES

Nebraska's education system is largely supported by district-centric data system implementations which have a large amount of variability from district to district.

Within each district's data system, there is poor integration between applications from different vendors, creating silos which limit the use of data and result in inconsistencies. There are inequities in the capabilities of district data systems, particularly between large and small districts. Most districts do not have all of the education applications that they consider important, particularly those related to teaching and learning.

The state's data system is focused on accountability and does not directly contribute to the core mission of teaching and learning at the districts.

The accountability data collection process is expensive and burdensome for the districts, requiring an estimated 655,200 hours annually. The accountability process is also expensive for Student Information System vendors, a cost that they directly or indirectly pass onto districts.

Staff data is spread across Human Resources and Student Information Systems at the district level and the Teacher Certification and Nebraska Public Employees Retirement system (NPERS) at the state level.

The school staff data collection from the Nebraska Student and Staff Record System (NSSRS) provides the state minimal information on staff demographics, experience, education, and position assignment information. This information is not adequate to address current and future requirements for more in-depth teacher data or to link teachers to student performance and success data. This data should also support the entire continuum of professional learning, from high-quality teacher preparation programs to professional development related to student needs.

Nebraska's network of Educational Service Units (ESUs), the ESU Coordinating Council (ESUCC), and Network Nebraska are all contributing to improving the capabilities and the efficiencies of the data systems for the districts.

However, the capabilities and support provided by the ESUs varies across the state. Additional capacity is needed.

Nebraska's data systems across the districts, ESUs, and NDE are not adequate to support the current education initiatives that include Blended Education, Teacher Evaluation, Education Intelligence, and Career Readiness.

Most districts do not have access to the tools to support instructional improvement, teacher evaluation, or data analytics.

FUTURE VISION

The Nebraska State Board of Education reaffirmed an overarching set of three major goals in June 2014 as follows.

Goal 1: Improve Achievement Outcomes for All Students

- 1) Continue to develop longitudinal data system including implementing data analysis and retrieval tools such as the data reporting system, data dashboards, and integrated systems supporting data based decision making at a state and local level
- 2) Support teacher/principal evaluation pilot implementations and support partners in efforts to implement instructional models
- 3) Build a system to measure progress toward reducing achievement gaps and promote data that focuses on achievement outcomes for all educational levels in Nebraska
- 4) Improve graduation rates across all districts and all subgroups
- 5) Explore use of nationally recognized assessment for career and college readiness for all Nebraska high school students
- 6) Lead the coordination of early education opportunities to expand the availability of quality public preschools

Goal 2: Improve and Support State and Local Accountability

- 1) Implement a “next generation” accountability system under the provisions of LB 438
- 2) Continue to organize investment in accountability and intervention system
- 3) Invest in an integrated data and reporting system
- 4) Develop a professional development system that increases capacity for school district improvement and school building intervention
- 5) Initiate a process for regular policy forums by the Board across the state

Goal 3: Improve Communication and Collaboration with Policy Partners

- 1) Develop and implement a communication plan designed to engage policy partners on a regular basis
- 2) Work closely with Legislators and the Governor as well as other state and local level leaders to determine key system investments

Develop a plan with policy partners that contributes to a vision for Pre-K through post-secondary education in Nebraska

Achieving these objectives is a multi-year initiative that will require broad participation across the districts, ESUs and NDE.

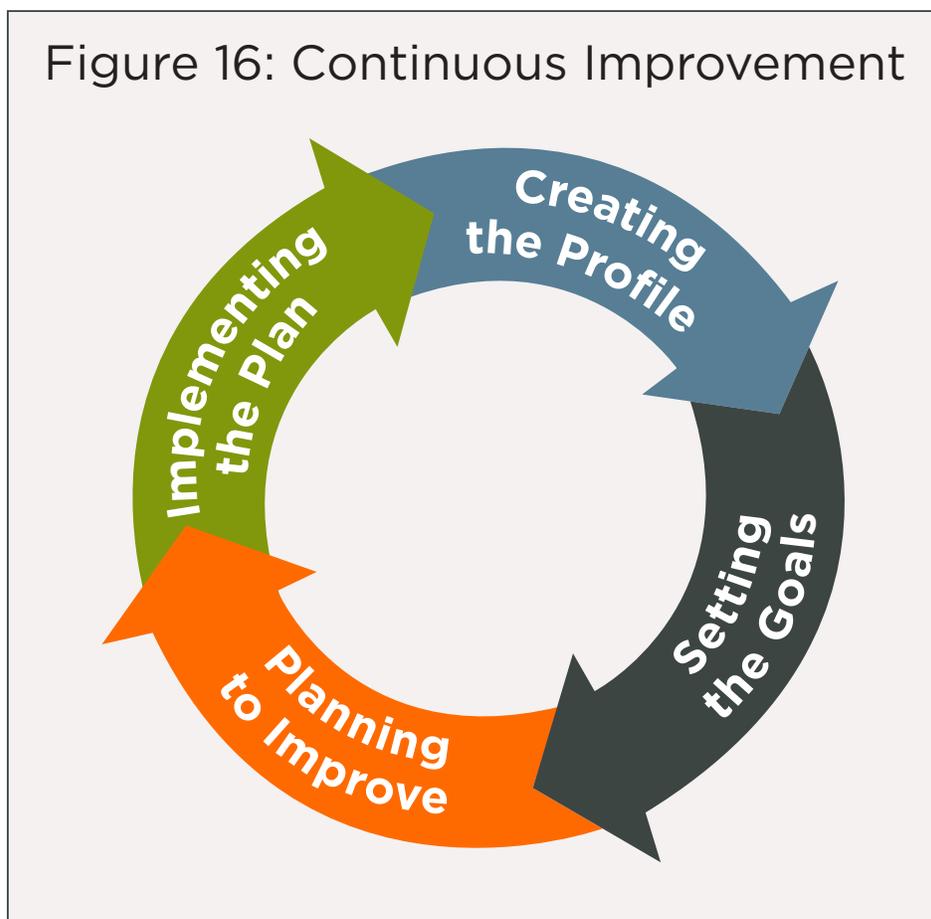
Nebraska is committed to a process of continuous education improvement

The “system” of education is a complex undertaking – there is no “silver bullet,” be it policy, curriculum, technique, or method - that will guarantee the academic performance of every student, at every school. Improvement requires experimentation and embracing continuously evolving best practices throughout the system of education, requiring the active involvement of all of Nebraska’s education leaders and professionals. Continuous improvement requires a sustainable culture and infrastructure supporting deliberate and managed change.

A white paper by The Carnegie Foundation for the Advancement of Teaching defines the continuous improvement cycle in a recent methodological study of educational organizations engaging in the process. First, “improvement” science differs from an “audit”; the latter is designed to find out what is actual whereas the former “describes how to reduce the gap between what is actual and what is possible.” The field of study itself is focused on the efforts to improve quality of “practice that have genuine consequences for people’s lives” in the day-to-day (Park, et.al 2013, 3). The Carnegie Study focused on education organizations implementing many different models of this, including “The Model for Improvement”, “Six Sigma”, “Results-Oriented-Cycle-of-Inquiry”, “Data Wise”, and the “Plan-Do-Study-Act Cycle”.

The Nebraska version of this is the NDE Continuous Improvement Process (CIP) Toolkit (shown in Figure 16 below). The CIP Toolkit:

- Builds on existing efforts to improve student achievement
- Encourages a continuous process
- Integrates activities and programs
- Incorporates researched practices (Effective Schools)
- Uses the rubric for school improvement developed by Nebraskans for Nebraskans
- Identifies strategies for targeting areas of low performance



Fostering continuous improvement requires data systems for benchmarking student, teacher, and organizational performance and measuring “improvements” at all levels. NDE’s CIP Toolkit’s first action is to create a profile of a student. The steps of profile creation alone are:

- Determine Data Sources
- Include Student Performance Data
- Include Demographic Data
- Consider Program Data
- Consider Perceptual Data
- Organize and Present Data
- Reflect On and Analyze Data
- Check the Profile for Recommended Components

Once educators at each level complete this step, they can put it to use improving the outcomes of the classroom, school, or district. The challenge is to get timely, understandable, and actionable data into the hands of those who can best use it.

The Carnegie Study of educational organizations found that data collection is critical for eventual improvement, but collecting data was a common challenge. Those that were particularly successful developed data systems to achieve the phase comparable to profile creation (above). They also built a culture of data-driven inquiry by investing heavily in data literacy among the educators (Park, et al 2013, 25).

The educators necessary for continuous improvement are a wide range of people. Different data is required for different stakeholders, at different levels of granularity and in different forms. Naturally, the teachers, school leaders, education specialists, counselors, and principals at the schools are the closest to the students and best suited to improve student performance and are in the greatest need for education data system support. However other stakeholders, such as parent, researchers, community service providers, administrators, and legislators must also be served. Figure 17 below illustrates the many uses and stakeholders of student data.

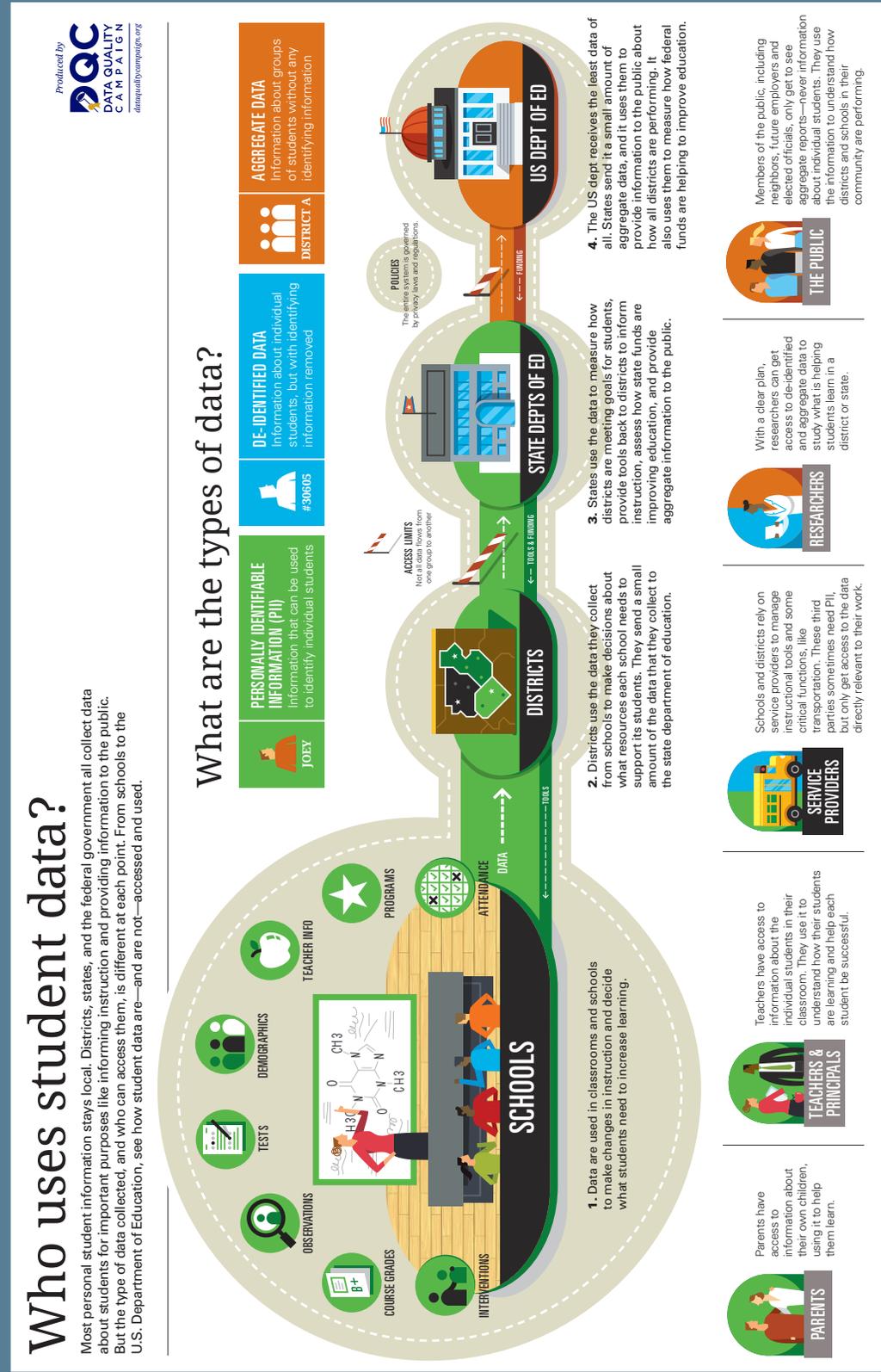
The vision is a statewide data system that builds long term capacity, efficacy and efficiency in the system of education.

The hallmarks of the envisioned system are as follows:

- Integrate data from multiple systems to provide a more complete and comprehensive view of students and staff.
- Provide a comprehensive set of instructional improvement tools to meet the state’s education initiative.
- Reduce district costs for accountability and software licensing to enhance the focus on instructional improvement.
- Provide uniform access to technology, applications and data across school districts of all size.
- Leverage and strengthen the efficiencies provided by the ESUCC, the ESU network and Network Nebraska
- Continue to provide choice and encourage education innovation in districts.

This will require a transformation of NDE’s emphasis from solely accountability to being a change agent for improving student outcomes in partnership with the ESUs and districts.

Figure 17: Who Uses Student Data?



(Data Quality Campaign, 2014)

THE ROLE OF THE STATE EDUCATION AGENCY IN PROMOTING CONTINUOUS IMPROVEMENT

The state is well-suited to support and implement the vision of effective data use defined here. In a collaborative effort the Building State Capacity and Productivity Center (BCSP Center) has published a series of articles outlining the “SEA of the Future” - a state education agency that assists districts in becoming more productive. Several state education agencies including Georgia, Texas, and Delaware have successfully streamlined data management to reduce data redundancies and provide more direct access to data for educators. Oregon’s Department of Education supported this data access with data literacy training for approximately 5,000 educators (as recommended here for Nebraska). In Oregon, researchers found that the “percentage of students scoring proficient or better on the state test grew significantly more” in schools whose teachers participated in the training (Gross & Jochim 2014, 21-22).

The BSCP Center publications further identified the following four guiding principles for supporting data use in districts and schools:

- Principle 1: Collaboratively identify district data capacity to inform state data efforts.
- Principle 2: Transform data into actionable information and ensure district access.
- Principle 3: Ensure data literacy among educators through pre-service and in-service policies and practices.
- Principle 4: Maximize efficiency and minimize burden in data collection (Gross & Jochim 2013, 22).

Even when arguing for a more limited role of SEAs, other industry thought-leaders support the idea of building infrastructure at the state level. In “The State Education Agency: At the Helm, Not the Oar”, Andy Smarick and Juliet Squire argue that the core competencies of state departments should include creating and maintaining statewide data systems. This frees up districts to focus on design and implementation of more successful school models (Smarick & Squire 2014, 17).

RECOMMENDATIONS

This study concludes with the following specific recommendations.

Recommendation 1: Make security, privacy, transparency, and the proper use of data the core of the Nebraska Education Data System implementation.

Districts should continue to “own” their data within the statewide system. The ESU hosting must support enterprise-grade security with yearly independent security audits. The following tenets are recommended to protect privacy while ensuring proper use of student data:

1. Ensure that all agencies, organizations, contractors, and vendors that have access to student education records provide the same strength of protection, control, and transparency as codified in appropriate policies, contracts, and data sharing agreements.
2. Ensure that all persons that have access to student education records have training and certification (micro credentials) on the proper use and protection of education records.
3. Limit access to individual student education records to the minimal set of personnel essential for legitimate education purposes, for the shortest period of time required for that purpose, and to the smallest set of data required for that purpose.
4. To the maximum extent possible, use aggregate data and de-identified data in place of individual student education records.
5. Provide parents transparency into the sources and uses of student data.
6. Provide parents control of the child’s education record to the maximum extent that is possible while preserving legitimate educational use of that data.

Recommendation 2: Unify the accountability data collection requirements into the Nebraska Education Data System to minimize the reporting burden on districts.

Replace the current system of accountability data submissions by instead deriving accountability data from an extended set of data sent securely by district systems into the Nebraska Education Data Standard (NEDS). The system would move the computations and business rule checks to the state level for better efficiency and consistency while also providing a transparent facility for district review and approval.

Recommendation 3: Require application vendors and other sources to provide data in a standard form specified by NDE directly into the NEDS. Adopt a Nebraska Education Data Standard in collaboration with the NITC.

Native vendor interfaces are required for sustainability. Ed-Fi defines CEDS-compliant data standard adopted by 22 states that can be extended for Nebraska-specific requirements. Ed-Fi adoption preserves district choice while maintaining data standardization at the state level. A governance process will be required to maintain the Nebraska-extended version of Ed-Fi year-to-year. Note that to ensure continued vendor participation, the data interface requirement needs to be in policy or legislation to ensure vendor compliance.

Recommendation 4: Leverage and strengthen Nebraska’s ESU network, the ESUCC, and Network Nebraska to host, maintain, and sustain the Nebraska Education Data System, to support a statewide virtual help desk, and to train the educators in its use.

Provide an enterprise-grade, efficient and economical technology platform through which applications and services are delivered to improve school performance and learner outcomes. The statewide system of support would leverage the resources at NDE, ESUCC, ESUs and districts to provide help desk support to districts and professional development coordination.

Recommendation 5: Leverage the state-level market to influence vendors, negotiate lower prices through competition, provide consistent functions and pricing across large and small districts, and expand the number and quality of instructional applications.

Facilitate “economies of scale” and cooperative purchasing at the state and/or ESU level and centralized services that lower costs without sacrificing the quality of products and services. Use this leverage to greatly expand the number and quality of instructional improvement applications.

The vision is to create essentially an application store for school districts to choose from that leverages the collective bargaining advantage of 245 school districts, 300,000 students, ESU resources and the Nebraska Department of Education.

Recommendation 6: Invest in providing education intelligence - access to actionable insight - through a warehouse, business intelligence tools, and increased internal capacity for districts, policy makers, and researchers.

Leverage the Ed-Fi K-12 statewide longitudinal data warehouse for use by districts, administrators, and researchers to support analysis of student performance, college and career readiness and success, instructional improvement initiatives, teacher evaluations, student intervention and professional development effectiveness. Integrate finance data, early childhood, postsecondary and workforce data.

Recommendation 7: Invest in an integrated data system that spans the districts, the ESUs, and NDE to support continuous education improvement.

The resulting Nebraska Education Data System (NEDS) should build upon the ongoing SLDS project to leverage the Ed-Fi data standards and technologies for the data system and dashboards. The system should adopt and build upon the ESUCC project for Single Sign-On (SSO). While the system will initially focus on serving the districts, it should ultimately be expanded to reach students and parents, community service organizations, and researchers.

Recommendation 8: Integrate staff data from district and state data sources, link teachers to student performance and success, and add additional data to better support teacher evaluation and professional development.

This will require integration of both the HR and SIS at the district level with the Teacher Certification and NPERs at the state level. Teachers will be linked to students to assess their contribution to student performance and growth. Additional data will be integrated for teacher evaluations and observations, survey data, and professional development.

Recommendation 9: Invest in the licensing, integration and training of an Instructional Improvement System that is cost-effective for districts of all sizes.

The system will include the critical digital assets and tools to support areas like learning management systems, content management systems, blended and online learning, teacher/principal evaluation system, school improvement and climate tools, career readiness and discovery, local assessment systems, and other tools to enhance the educational opportunities and experiences.

Recommendation 10: Develop the staff and processes necessary to sustain the Nebraska Education Data System.

Additional leadership positions are recommended and include a K-12 Chief Information Officer and Chief Privacy Officer at NDE. The recommended initiative will expand an emerging project management office. Additional data governance processes will be required. Additional technical staff will be required at NDE and in the ESUs to meet the statewide help desk and support requirements.

1, 3, AND 5 YEAR ROADMAP

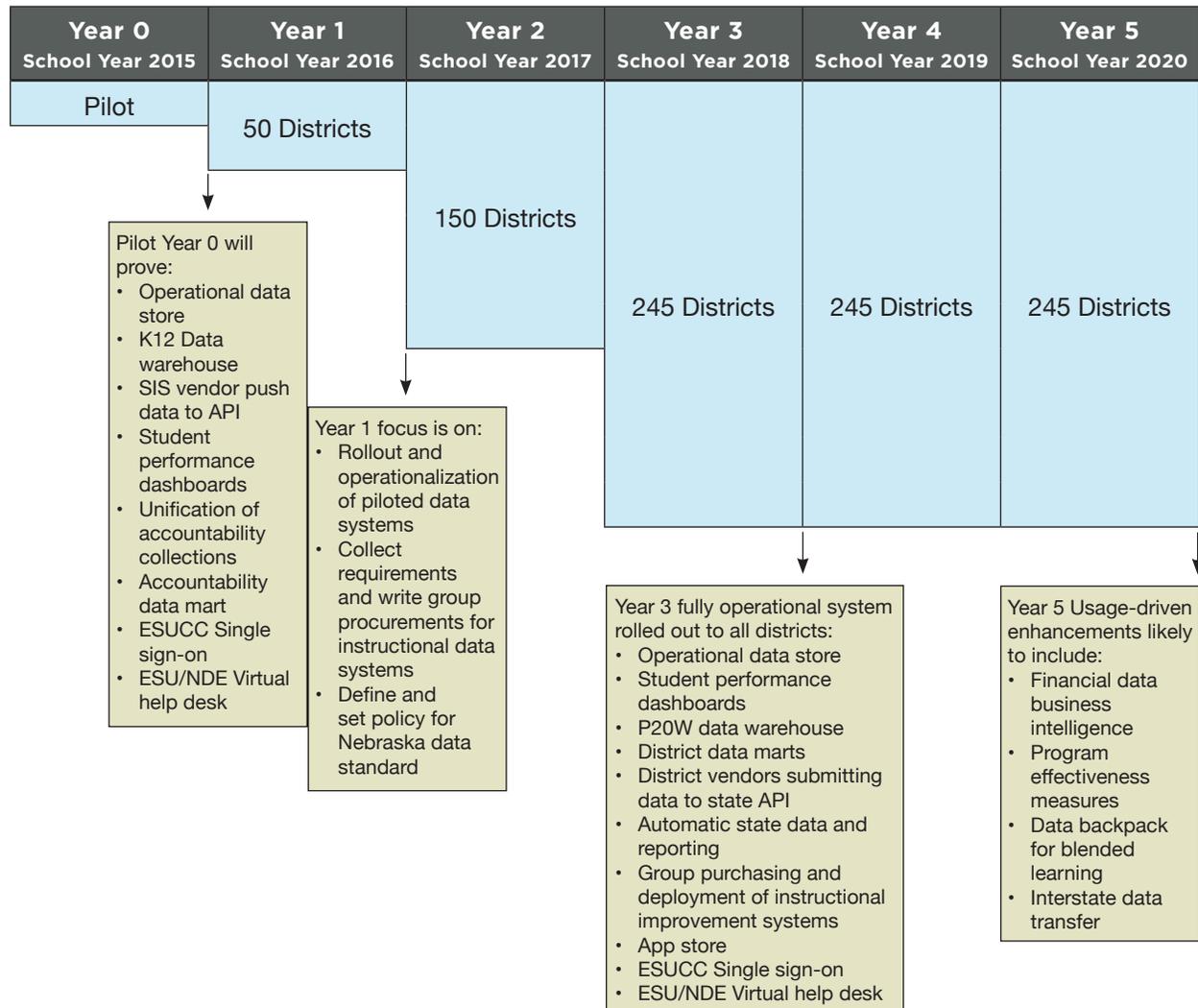
The roadmap builds upon key pilot activities that underway this fiscal year (identified as Year 0, SY 15):

- Install, customize, integrate, pilot, and prove the Ed-Fi data system (www.ed-fi.org) consisting of an operational data store with transactional and batch data interfaces.
- Develop, pilot and prove the single-sign-on system under development by the ESUCC.
- Develop, pilot, and prove an accountability data mart, deriving accountability data from transactional data streams from the district student information systems. Accountability data will be submitted on dual paths from pilot districts, allowing the automatically derived data to be compared with their actual submissions.
- Install, customize, integrate, pilot, and prove the Ed-Fi longitudinal data warehouse and student performance dashboard.
- Use the dashboard pilots to also pilot the NDE-ESU virtual help desk to support the pilots.

These pilot activities will provide the base infrastructure to simultaneously expand and rollout the new Nebraska Education Data System over the next three years. The rollout plan targets the total districts being operational of approximately 50, 150, and ultimately 245 across years 1 through 3.

The major 1, 3, and 5 year milestones are summarized in Figure 18.

Figure 18: 5 Year Roadmap



The objective is that by year 3 of the plan (SY 18) to have the first version of the Nebraska Education Data System operational, integrated, supported, and rolled out to every district in the state. Years 4 and 5 of the plan will focus on expanding the system based upon Nebraska continuous improvement priorities of the time.

The roadmap is organized into implementation five work streams as follows:

1. Nebraska Education Infrastructure – leverage the Ed-Fi infrastructure to connect source systems and drive down costs.
2. NDE Accountability Data System – reduce the burden of accountability data submissions on districts through automated process leveraging the Ed-Fi infrastructure.
3. NDE Education Intelligence System – to provide access to actionable insight – through a warehouse, business intelligence tools, and increased internal capacity.
4. Help Desk & Support – NDE, along with the ESUCC and ESUs, will provide technical support for Nebraska education data systems through a virtual help desk and coordinated knowledge transfer.
5. Nebraska Instructional Improvement System – building the capacity for Nebraska educators to continuously improve the quality of instruction for students through integrated, efficient systems. This will serve as an application store.

Figure 19 shows the major activities planned for each of these work streams.

Figure 19: Major Activities

Year 0 School Year 2015 Pilot	Year 1 School Year 2016 50 Districts	Year 2 School Year 2017 150 Districts	Year 3 School Year 2018 249 Districts	Year 4 School Year 2019 249 Districts	Year 5 School Year 2020 249 Districts
Nebraska					
Pilot data infrastructure	Integrate HR systems	Integrate Career Readiness	Intra-state data mobility	Interstate data mobility	
Pilot Ed-Fi dashboards	Expand and extend dashboards				
Pilot ESUCC Single sign-on	Integrate identity mgmt	Mature & scale data <i>infrastructure</i>		Integrate financial systems	
	Procure state-sponsored SIS'	Transition & support state-sponsored SIS'			
NDE Accountability Data System					
Unify NSSRS data collection	Unify CDC collection				
SIS vendors pilot data to API	Define NE Data Standard				
Pilot data mart	Build business rules	Develop state and Federal reporting		Add/modify state & Federal collections as required	
	Review & approval system	Dual submissions		Deprecate old systems	
NDE Education Intelligence System					
Install K12 data warehouse	Expand warehouse to P20W				
	Build district security	Pilot district data marts		Develop program effectiveness analytics	
		Mature & scale data warehouse		Integrate financial data	Integrate financial analytics
Help Desk & Support					
Pilot virtual help desk	Expand capacity for ESUs + NDE Virtual Help Desk				
Nebraska Instructional Improvement System					
Define IIS requirements	Procure, deploy & train IIS tools			Student data backpack	
	Write group procurements	Develop, pilot & mature PD			
			App store		

FINANCIAL INVESTMENTS AND RETURNS

BUDGET REQUEST FOR INVESTMENT

The proposed Biennium budget request for the five work streams is summarized in the table below. The detailed budget request is provided in Appendix H.

	Year 1 FY 2016 SY 2015-2016	Year 2 FY 2017 SY 2016-2017
Nebraska Education Infrastructure	\$2,204,617	\$2,144,257
NDE Accountability Data System	\$2,579,252	\$2,541,572
NDE Education Intelligence System	\$2,085,080	\$2,035,720
Help Desk & Support	\$1,304,821	\$1,264,223
Total NDE DRE Capacity Building	\$8,173,770	\$7,985,772
NE Instructional Improvement System	\$5,975,358	\$5,919,718
Total NDE DRE Budget Issue Requests	\$14,149,128	\$13,905,490

DRE: Data, Research, and Evaluation

ESTIMATED FINANCIAL RETURNS

The primary benefits from the recommended investments will come from a greatly improved instructional system that improves student performance leading to greater student success.

However the proposed approach also results in cost savings and efficiencies that will provide a financial return from substantially-reduced accountability costs and from reduced technology costs to districts.

REDUCED ACCOUNTABILITY COSTS

Accountability costs will be reduced by unifying and moving accountability computations to state from a single fine-grained data collection.

An estimated 455 FTEs are involved in the current data collection process at districts, representing an annual cost of \$22.75 million. NDE spends an additional \$2.5M per year on licensing, IT personnel and help desk supporting the accountability submissions.

The recommended NEDS, when fully implemented, can re-direct at an estimated 50% of the district FTE time related to accountability submissions to focus on other initiatives that impact can more directly improve student performance and success. This value is estimated at 12.6 million annually once fully implemented.

It should be noted that the remaining 50% will be involved in a larger mission of improving data quality across the all types of data (not just accountability) that are more directly contributing to the mission of continuous education improvement.

REDUCED TECHNOLOGY COSTS FOR DISTRICTS

Technology costs will be reduced for districts as a result of several factors, including:

- Reduced investment in data system costs by having a centralized capability that uses valuable Ed-Fi components obtained without license costs
- Negotiated statewide costs for licensing to allow pricing as with largest districts – “cooperative purchasing”
- Reduced integration costs because vendors are supporting native Ed-Fi interfaces to the statewide system
- Reduced number of different systems reduces integration and maintenance costs
- Increased stability of systems over time, reducing transition costs
- Reduced costs to increased competitiveness because of reduced vendor lock-in
- Reduced district costs maintaining their own data warehouse
- Savings on procurement costs

Based upon the district surveys, Nebraska districts spend roughly \$74.7 million per year on IT and systems.

The recommended NEDS, when fully implemented, will save an estimated 25% on the districts’ systems cost a year or \$18.7 million.

RETURN ON INVESTMENT

Total financial return is estimated to be valued at \$31.3 M in savings/year after the third year of investment as shown in Figure 20. Note that the computation of return assumes that a district achieves the projected cost savings the year after it accomplishes the rollout. For example, if a district went into production in year 2, their annual savings is assumed from year 3 and beyond.

Figure 20: Return on Investment

	Year 1 FY 2016 SY 2015-2016	Year 2 FY 2017 SY 2016-2017	Year 3 FY 2018 SY 2017-2018	Year 4 FY 2019 SY 2018-2019	Year 5 FY 2020 SY 2019-2020
Investment	\$(14,149,128)	\$(13,905,490)	\$(13,905,492)		
Returns					
Reduced accountability costs		\$1,524,169	\$7,590,361	\$12,600,000	\$12,600,000
Reduced technology costs		\$3,755,020	\$11,265,060	\$18,700,000	\$18,700,000
Yearly net investment/return	\$(14,149,128)	\$(8,626,301)	\$4,949,930	\$31,300,000	\$31,300,000
Cumulative investment/return	\$(14,149,128)	\$(22,775,429)	\$(17,825,499)	\$13,474,501	\$44,774,501

RECOMMENDED ROADMAP MEETS THE NEEDS AND PRIORITIES OF NEBRASKA

The roadmap above, organized into five work streams, aligns with the states goals and objectives of the Nebraska State Board of Education, with the conclusions of the study and focus groups, with the principles published for the SEA of the Future, and with the 10 specific recommendations made by this study. Figure 21 illustrates how each recommendation supports the major principles.

Figure 21: Recommendations to Meet Nebraska’s Needs

Work Streams Nebraska State Board of Education Goals	Nebraska Education Infrastructure	NDE Account- ability Data System	NDE Education Intelligence System	Help Desk & Support	NE Instructional Improvement System
Goal 1: Improve Achievement Outcomes for All Students					
1) Continue to develop longitudinal data system including implementing data analysis and retrieval tools such as the data reporting system, data dashboards, and integrated systems supporting data based decision making at a state and local level	●	●	●	●	
2) Support teacher/principal evaluation pilot implementations and support partners in efforts to implement instructional models				●	●
3) Build a system to measure progress toward reducing achievement gaps and promote data that focuses on achievement outcomes for all educational levels in Nebraska			●	●	
4) Improve graduation rates across all districts and all subgroups	●	●	●	●	●
5) Explore use of nationally recognized assessment for career and college readiness for all Nebraska high school students				●	●
6) Lead the coordination of early education opportunities to expand the availability of quality public preschools			●	●	

Work Streams Nebraska State Board of Education Goals	Nebraska Education Infrastructure	NDE Account- ability Data System	NDE Education Intelligence System	Help Desk & Support	NE Instructional Improvement System
Goal 2: Improve and Support State and Local Accountability					
1) Implement a “next generation” accountability system under the provisions of LB 438		●		●	
2) Continue to organize investment in accountability and intervention system	●	●	●	●	●
3) Invest in an integrated data and reporting system	●	●	●	●	
4) Develop a professional development system that increases capacity for school district improvement and school building intervention			●		●
5) Initiate a process for regular policy forums by the Board across the state			●		

Work Streams Nebraska State Board of Education Goals	Nebraska Education Infrastructure	NDE Account- ability Data System	NDE Education Intelligence System	Help Desk & Support	NE Instructional Improvement System
Goal 3: Improve Communication and Collaboration with Policy Partners					
1) Develop and implement a communication plan designed to engage policy partners on a regular basis			●		
2) Work closely with Legislators and the Governor as well as other state and local level leaders to determine key system investments	●	●	●	●	●
3) Develop a plan with policy partners that contributes to a vision for PreK through post-secondary education in Nebraska			●		

Work Streams Nebraska State Board of Education Goals	Nebraska Education Infrastructure	NDE Account- ability Data System	NDE Education Intelligence System	Help Desk & Support	NE Instructional Improvement System
Study and Focus Group Conclusions					
1. The districts overwhelmingly support automating accountability submissions.	●	●			
2. The districts agree that the ecosystem will better support students and teachers if the systems are interoperable.	●		●	●	●
3. The districts would like to leverage collective purchasing agreements when possible to lower costs of new or existing systems.	●				●
4. The districts are looking for particular guidance and assistance from the state for purchasing new technology systems that will support strategic priorities.				●	●

Work Streams Nebraska State Board of Education Goals	Nebraska Education Infrastructure	NDE Account- ability Data System	NDE Education Intelligence System	Help Desk & Support	NE Instructional Improvement System
SEA of the Future Principles					
Principle 1: Collaboratively identify district data capacity to inform state data efforts.	●		●		●
Principle 2: Transform data into actionable information and ensure district access.	●		●		●
Principle 3: Ensure data literacy among educators through pre-service and in-service policies and practices.				●	
Principle 4: Maximize efficiency and minimize burden in data collection.		●			

<p style="text-align: center;">Work Streams</p> <p style="text-align: center;">Nebraska State Board of Education Goals</p>	<p style="text-align: center;">Nebraska Education Infrastructure</p>	<p style="text-align: center;">NDE Account- ability Data System</p>	<p style="text-align: center;">NDE Education Intelligence System</p>	<p style="text-align: center;">Help Desk & Support</p>	<p style="text-align: center;">NE Instructional Improvement System</p>
Recommendations of the Study					
<p>1. Make security, privacy, transparency, and the proper use of data the core of the Nebraska Education Data System implementation.</p>	●	●	●	●	●
<p>2. Unify the accountability data collection requirements into the Nebraska Education Data System to minimize the reporting burden on districts.</p>		●			
<p>3. Require application vendors and other sources to provide data in a standard form specified by NDE directly into the NEDS.</p>	●	●			●
<p>4. Leverage and strengthen Nebraska's ESU network, the ESUCC, and Network Nebraska to host, maintain, and sustain the Nebraska Education Data System, to support a statewide virtual help desk, and to train the educators in its use.</p>				●	
<p>5. Leverage the state-level market to influence vendors, negotiate lower prices through competition, provide consistent functions and pricing across large and small districts, and expand the number and quality of instructional applications.</p>	●				●
<p>6. Invest in providing education intelligence - access to actionable insight - through a warehouse, business intelligence tools, and increased internal capacity for districts, policy makers, and researchers.</p>			●		
<p>7. Invest in an integrated data system that spans the districts, the ESUs, and NDE to support continuous education improvement.</p>	●	●	●	●	●
<p>8. Integrate staff data from district and state data sources, link teachers to student performance and success, and add additional data to better support teacher evaluation and professional development.</p>	●				●
<p>9. Invest in the licensing, integration and training of an Instructional Improvement System that is cost-effective for districts of all sizes.</p>					●
<p>10. Develop the staff and processes necessary to sustain the Nebraska Education Data System.</p>	●	●	●	●	●

APPENDICES

APPENDIX A: STUDY CONTRIBUTORS



NEBRASKA DEPARTMENT OF EDUCATION

The Nebraska Department of Education (NDE) mission is to lead and support the preparation of Nebraskans for learning, earning, and living. NDE led efforts to conduct the study of technology and data systems commissioned by Legislative Resolution 264.



NEBRASKA STATE EDUCATION ASSOCIATION

The Nebraska State Education Association (NSEA) is a member-directed union representing 28,000 public school teachers and other educational professionals across Nebraska. The mission of the NSEA is to advocate for all education professionals, empowering them to provide an excellent public education for every student.



NEBRASKA COUNCIL OF SCHOOL ADMINISTRATORS

The Nebraska Council of School Administrators (NCSA) is an umbrella organization with more than 1,300 school administrators who serve in Nebraska schools. They are a partner in developing excellence in educational leadership, providing the “tools” necessary for administrators to be successful. NCSA provides strength in numbers of school administrators to ensure their voices are heard in educational matters in Nebraska.



NEBRASKA EDUCATION TECHNOLOGY ASSOCIATION

The Nebraska Educational Technology Association (NETA) is a grassroots organization open to everyone interested in sharing information about using technology in the educational process. NETA has approximately 2,000 members. NETA provides leadership by promoting the application of technology to the educational process at all levels.



EDUCATIONAL SERVICE UNIT COORDINATING COUNCIL

The Nebraska Educational Service Unit Coordinating Council (ESUCC) was created in statute to coordinate the activities of Nebraska’s 17 Educational Service Units. The ESUCC works toward statewide coordination to provide the most cost-effective services for the students, teachers, and school districts in each educational service unit. This includes preparation of strategic plans to assure cost-efficient and equitable delivery of services across the state and administration of statewide initiatives and provision of statewide services.



DOUBLE LINE PARTNERS

Double Line Partners (DLP) is a technical consulting firm specializing in designing and implementing K-12 longitudinal data systems. DLP is a wholly-owned subsidiary of the Michael & Susan Dell Foundation.

APPENDIX B: GLOSSARY OF TERMS

Accountability Submissions – generally refers to the collective body of data submissions made by districts to the State and then in turn to the federal government. These typically include annual reports of information such as student demographic information, attendance, and performance on statewide tests.

Continuous Improvement – a cycle of continuous improvement is used here to describe the active collection of and reflection on student performance on tasks related to learning. Teachers engaging in a continuous improvement cycle will frequently assess their students (with low stakes) and quickly intervene to support students who have not yet mastered a concept.

Data-Driven Decision-Making – this too refers to the active process of teachers and school and district leaders that make decisions on what to change, keep, and/or improve in school and classroom practices based on the student need demonstrated in the data.

Ed-Fi – a data standard and associated technical assets that serve as a foundation for enabling interoperability among education data systems designed to improve student achievement and teacher satisfaction.

Instructional Improvement System – a network of systems secured and hosted in Nebraska that will connect to eliminate redundancies, enhance student performance across platforms, and save teachers' time

State Longitudinal Data System (SLDS) – This refers to those systems funded by federal grant dollars intended to enhance the ability of States to efficiently and accurately manage, analyze, and use education data, including individual student records.

Nebraska was first awarded \$3,468,335 in SLDS funds in 2007. Through these funds Nebraska incorporated Special Education and Curriculum segments into a more comprehensive system, created a special education template to streamline the collection of special education data and enhance the accessibility and usefulness of data. Nebraska also implanted the Data Quality Curriculum to improve the overall quality of data in the statewide system by providing training to local personnel in the creation, collection and reporting of education data.

Nebraska's 2012 SLDS grant in the amount of \$4,362,534 will serve to accomplish four goals:

- Provide a data analysis tool for districts that uses multiple local and state data sources to produce reports for local decision makers
- Provide a statewide system of professional development training for data analysis that reaches every district
- Build a research and evaluation operation in NDE collaboratively with the research community
- Expand and enhance the SLDS for sustainability

Education Intelligence – a term for the application of Business Intelligence principles and tools to the education domain with reports relevant to student performance and instructional practices

Nebraska Education Data Standard (NEDS) - a customized version of the Ed-Fi data standard for technology and data systems in Nebraska

COMMONLY USED ACRONYMS

- AFR – Annual Financial Report
- DRE – Nebraska Department of Education’s Data, Research, and Evaluation Team
- ESU – Educational Service Units
- ESUCC – Educational Service Units Coordinating Council
- NCSA – Nebraska Council of School Administrators
- NDE – Nebraska Department of Education
- NSSRS – Nebraska Student and Staff Record System

APPENDIX C: DESCRIPTION OF SYSTEMS

TEACHING AND LEARNING SYSTEMS



Data Management System

- Ability to load and update content data from any system
- Search, index, browse, and retrieve content data elements
- Analysis of education data from other systems
- Maintain auditing data across systems
- Reporting with education data from other systems

Assessment System

- Manage, assign, deliver, and score student assessments
- Manage test items and forms including questions types, questions, answers, rationale, etc.
- Author, review, and approve workflows and tools
- Scoring tools
- Manage test set-up options

Learning Management System

- Browse/search course catalog and view course description/content
- Complete pretest/posttest
- Complete course evaluation
- View/print transcript and certificate
- Manage learning activities (e.g., online courses, training, webinars, etc.) assign/schedule or publish, and archive
- Course/section self-registration and payment

Professional Development System

- View/print calendar with scheduled and completed evaluations, course sections, etc.
- Brick and mortar classroom, online, and asynchronous learning
- View/print certificate and transcripts
- Progress reports
- Override class enrollment
- Manage educator goal plans and coaching plans

Educator Evaluation System

View, complete, submit and approve an evaluation

- Create and schedule cycles and individual evaluations for educators teachers and principals
- Manage evaluation model frameworks and tools
- Manage and deliver surveys
- Administer and assign evaluations to educators
- Monitor progress

Progress Monitoring/Response to Intervention System

Student progress monitoring tools by stage of intervention

- Set intervention levels of intensity
- Manage resources: general education and special education teachers and specialists
- Monitor learning rate and level of individual student performance
- Ongoing student assessment
- Tiered instruction
- Parental reports on student progress

Credit Recovery System

- Section scheduling supports students across multiple districts or schools, students within same district only, or students within same school only
- Pretest/Posttest
- In- person student-teacher interaction
- Manage course catalog, including core and elective
- Independent completion option

Collaboration and Conferencing Tools

- Chat, Wiki, Blogs
- Discussion boards
- Staff collaboration and conferencing

Career Development/Information System

- Manages student progress toward industry certifications
- Identifies postsecondary options based on career interest inventories
- Tracks participation in career education programs
- Manages student personal learning plans
- Provides occupational information by career clusters/paths

ADMINISTRATIVE SYSTEMS

Nutrition/Food Management System

- Manage menus
- Manage food inventory
- Manage meal costs and income

Transportation Management Systems

- Manage drivers
- Manage buses and maintenance
- Manage students and routes
- Manage extracurricular activity traffic



School Counseling and Guidance

- Manage and track each counseling contact including reason and outcome, anecdotal comments, etc. over the course of a school year, including history
- Configuration options including contact reasons, outcomes, follow up date, etc.
- View/print cumulative counselor contact history for any student
- View/manage counseling records
- Print list of contacts
- Permit a follow update for any counseling contact
- Manage rules and guidelines
- Incident reports

IEP Management System

- Forms management including referrals, meeting notes, prior written notices as well as e-signatures, evaluations report forms and design forms
- Manage library content, including goals and prescriptions
- Manage plans such as student accommodation plan, individual language learner plan, individual compensatory plan, etc.
- Section 504 management compliance
- Monitor individual student progress

Library Management System

- Acquisitions
- Book and content cataloging
- Circulation
- Serials: periodicals and other subscriptions
- Multimedia
- Overdue materials tracking
- Barcoding

Test Analysis System

- Robust import capability (i.e., national, state and local assessments; information from a Student Information System; and student academic grades and attendance)
- Support report format and styles such as dashboards with drilldown, text, charts, graphs, etc.
- Support report groupings such as district, school, teacher, class and student; demographics or programs; cohorts; custom groupings; standards
- Support reporting periods such as single year, multiyear, custom date ranges, etc.
- Support output medium for reports including print, PDF, Excel CSV and SAS

Student Information System

- Discipline and behavior management
- Grades reporting and transcripts management
- Health and Immunization records management
- Class scheduling management
- Parent portal
- Student personal information
- Manage student absences
- Messaging among stakeholders
- School calendar functions

BACK OFFICE SYSTEMS



Finance System

- Accounts payable capabilities
- Accounts receivable capabilities
- Controlling/budgeting capabilities
- Fixed assets management capabilities
- Other capabilities include calendar and support for parent and child account codes

Human Resources Management System

- Personnel/employee administration including personal information, benefits and termination
- Time management (e.g., time clocks, etc.)
- Organization management
- Recruitment/talent management
- Training and development
- Payroll management
- Self-service center
- Manager center

Procurement System

- Purchasing
- Inventory Management
- Vendor Management
- Materials Planning
- Warehouse Management
- Workflow/approval
- Plant Maintenance

Substitute Management

- Substitute pool management
- Manage absences and substitute assignments
- Communication tools

APPENDIX D: SURVEY OF DISTRICT LEADERS

Nebraska Survey of Educational Data Systems

Welcome and Introduction

Hello,

Welcome to the Nebraska Survey of Educational Data Systems.

Administrators from all public school districts in Nebraska have been invited to provide information that will inform an interim study to the Nebraska Legislature prompted by LR 264. This study will examine Nebraska's educational data systems to including questions of adequacy, quality, cost, and transparency.

We appreciate you taking a few minutes to provide responses to the following questions on behalf of your school district. The questionnaire contains 47 items and should take about 15 minutes to complete.

In the following questionnaire, educational data systems are grouped into three general categories: Teaching and Learning Systems, "Back Office" Systems, and Administrative Systems. A group of questions will be asked about each category of educational data systems in your school district.

If you have any questions about this survey, please contact Matt Hastings at matt.hastings@nebraska.gov or call 402-471-4483.

Thank you for your participation!

Teaching and Learning Systems

The following group of questions address data systems for "Teaching and Learning" in your school district.

1. Do you have a Data Management system in your district?

Data management systems generally provide the following features:

- **Ability to load and update content data from any system**
- **Search, index, browse and retrieve content data elements**
- **Analysis of education data from other systems**
- **Maintain auditing data across systems**
- **Reporting with education data from other systems**

- Yes (we have a digital system)
- Yes (we do not have a digital system)
- No

2. How important is a Data Management system for your district?

- Extremely important
- Very important
- Somewhat important
- Not too important
- Not important at all

3. Do you have an Assessment system in your district?

Assessment systems generally provide the following features:

- **Manage, assign, deliver and score student assessments**
- **Manage test items and forms including question types, questions, answers, rationale, etc.**
- **Author, review and approve workflows and tools**
- **Scoring tools**
- **Manage test set-up options**

- Yes (we have a digital system)
- Yes (we do not have a digital system)
- No

4. How important is an Assessment system for your district?

- Extremely important
- Very important
- Somewhat important
- Not too important
- Not important at all

5. Do you have a Learning Management System in your district?

Learning management systems generally provide the following features:

- **Browse/search course catalog and view course description/content**
- **Complete pretest/posttest**
- **Complete course evaluation**
- **View/print transcript and certificate**
- **Manage learning activities (e.g., online courses, training, webinars, etc.), assign/schedule or publish, and archive**
- **Course/section self-registration and payment**

- Yes (we have a digital system)
- Yes (we do not have a digital system)
- No

6. How important is a Learning Management system for your district?

- Extremely important
- Very important
- Somewhat important
- Not too important
- Not important at all

7. Do you have a Professional Development system in your district?

Professional development systems generally provide the following features:

- **View/print calendar with scheduled and completed evaluations, course sections, etc.**
- **Brick and mortar classroom, online, and asynchronous learning**
- **View/print certificate and transcripts**
- **Progress reports**
- **Override class enrollment**
- **Manage educator goal plans and coaching plans**

- Yes (we have a digital system)
- Yes (we do not have a digital system)
- No

8. How important is a Professional Development system for your district?

- Extremely important
- Very important
- Somewhat important
- Not too important
- Not important at all

9. Do you have an Educator Evaluation system in your district?

Educator evaluation systems generally provide the following features:

- **View, complete, submit and approve an evaluation**
- **Create and schedule cycles and individual evaluations for educators teachers and principals**
- **Manage evaluation model frameworks and tools**
- **Manage and deliver surveys**
- **Administer and assign evaluations to educators**
- **Monitor progress**

- Yes (we have a digital system)
- Yes (we do not have a digital system)
- No

Nebraska Survey of Educational Data Systems

10. How important is an Educator Evaluation system for your district?

- Extremely important
- Very important
- Somewhat important
- Not too important
- Not important at all

11. Do you have a Progress Monitoring or Response To Intervention (RTI) system in your district?

Progress monitoring/response to intervention systems generally provide the following features:

- **Student progress monitoring tools by stage of intervention**
- **Set intervention levels of intensity**
- **Manage resources: general education and special education teachers and specialists**
- **Monitor learning rate and level of individual student performance**
- **Ongoing student assessment**
- **Tiered instruction**
- **Parental reports on student progress**

- Yes (we have a digital system)
- Yes (we do not have a digital system)
- No

12. How important is a Progress Monitoring/RTI system for your district?

- Extremely important
- Very important
- Somewhat important
- Not too important
- Not important at all

Nebraska Survey of Educational Data Systems

13. Do you have a Credit Recovery system in your district?

Credit recovery systems generally provide the following features:

- **Section scheduling supports students across multiple districts or schools, students within same district only, or students within same school only**
- **Pretest/Posttest**
- **Face-to-face student-teacher interaction**
- **Manage course catalog, including core and elective**
- **Independent completion option**

- Yes (we have a digital system)
- Yes (we do not have a digital system)
- No

14. How important is a Credit Recovery system for your district?

- Extremely important
- Very important
- Somewhat important
- Not too important
- Not important at all

15. Do you have Collaboration and Conferencing Tools in your district?

Collaboration and conferencing tools generally provide the following features:

- **Chat, Wiki, blogs**
- **Discussion boards**
- **Staff collaboration and conferencing**

- Yes (we have a digital system)
- Yes (we do not have a digital system)
- No

Nebraska Survey of Educational Data Systems

16. How important are Collaboration and Conferencing Tools for your district?

- Extremely important
- Very important
- Somewhat important
- Not too important
- Not important at all

17. Do you have a Career Development or Career Information system in your district?

Career Development/Information systems generally provide the following features:

- Manages student progress toward industry certifications**
- Identifies post-secondary options based on career interest inventories**
- Tracks participation in career education programs**
- Manages student personal learning plans**
- Provides occupational information by career clusters/paths**

- Yes (we have a digital system)
- Yes (we do not have a digital system)
- No

18. How important is a Career Development/Information system for your district?

- Extremely important
- Very important
- Somewhat important
- Not too important
- Not important at all

Administrative Systems

The next group of questions address data systems for "Administrative" purposes in your school district.

19. Do you have Nutrition or Food Management systems in your district?

Nutrition and food management systems generally provide the following features:

- **Manage menus**
- **Manage food inventory**
- **Manage meal costs and income**

- Yes (we have a digital system)
- Yes (we do not have a digital system)
- No

20. How important is a Nutrition and Food Management system for your district?

- Extremely important
- Very important
- Somewhat important
- Not too important
- Not important at all

21. Do you have a Transportation Management system in your district?

Transportation management systems generally provide the following features:

- **Manage drivers**
- **Manage buses and maintenance**
- **Manage students and routes**
- **Manage extracurricular activity traffic**

- Yes (we have a digital system)
- Yes (we do not have a digital system)
- No

22. How important is a Transportation Management system for your district?

- Extremely important
- Very important
- Somewhat important
- Not too important
- Not important at all

23. Do you have School Guidance and Counseling systems in your district?

School Guidance and Counseling systems generally provide the following features:

- **Manage and track each counseling contact including reason and outcome, anecdotal comments, etc. over the course of a school year, including history**
- **Configuration options including contact reasons, outcomes, follow-up date, etc.**
- **View/print cumulative counselor contact history for any student**
- **View/manage counseling records**
- **Print list of contacts**
- **Permit a follow-up date for any counseling contact**
- **Manage rules and guidelines**
- **Incident reports**

- Yes (we have a digital system)
- Yes (we do not have a digital system)
- No

24. How important is a School Guidance/Counseling system for your district?

- Extremely important
- Very important
- Somewhat important
- Not too important
- Not important at all

Nebraska Survey of Educational Data Systems

25. Do you have an Individual Education Plan (IEP) Management system in your district?

IEP management systems generally provide the following features:

- **Forms management including referrals, meeting notes, prior written notices as well as e-signatures, evaluations report forms and design forms**
- **Manage library content, including goals and prescriptions**
- **Manage plans such as student accommodation plan, individual language learner plan, individual compensatory plan, etc.**
- **Section 504 management compliance**
- **Monitor individual student progress**

- Yes (we have a digital system)
- Yes (we do not have a digital system)
- No

26. How important is an IEP Management system for your district?

- Extremely important
- Very important
- Somewhat important
- Not too important
- Not important at all

27. Do you have a Library Management system in your district?

Library management systems generally provide the following features:

- **Acquisitions**
- **Book and content cataloging**
- **Circulation**
- **Serials: periodicals and other subscriptions**
- **Multimedia**
- **Overdue materials tracking**
- **Barcoding**

- Yes (we have a digital system)
- Yes (we do not have a digital system)
- No

Nebraska Survey of Educational Data Systems

28. How important it s a Library Management system for your district?

- Extremely important
- Very important
- Somewhat important
- Not too important
- Not important at all

29. Do you have a Test Analysis system in your district?

Test analysis systems generally provide the following features:

- **Robust import capability (i.e., national, state and local assessments; information from a Student Information System; and student academic grades and attendance)**
- **Support report format and styles such as dashboards with drill-down, text, charts, graphs, etc.**
- **Support report groupings such as district, school, teacher, class and student; demographics or programs; cohorts; custom groupings; standards**
- **Support reporting periods such as single-year, multi-year, custom date ranges, etc.**
- **Support output medium for reports including print, PDF, Excel CSV and SAS**

- Yes (we have a digital system)
- Yes (we do not have a digital system)
- No

30. How important is a Test Analysis system for your district?

- Extremely important
- Very important
- Somewhat important
- Not too important
- Not important at all

"Back Office" Systems

The group of questions below address data systems for school management or "Back Office" purposes in your school district.

31. Do you have a Finance system in your district?

Finance systems generally provide the following features:

- **Accounts payable capabilities**
- **Accounts receivable capabilities**
- **Controlling/budgeting capabilities**
- **Fixed assets management capabilities**
- **Other capabilities include calendar and support for parent and child account codes**

- Yes (we have a digital system)
- Yes (we do not have a digital system)
- No

32. How important is a Finance system for your district?

- Extremely important
- Very important
- Somewhat important
- Not too important
- Not important at all

Nebraska Survey of Educational Data Systems

33. Do you have a Human Resource Management system in your district?

Human resource management systems generally provide the following features:

- **Personnel/employee administration including personal information, benefits and termination**
- **Time management (e.g., time clocks, etc.)**
- **Organization management**
- **Recruitment/talent management**
- **Training and development**
- **Payroll management**
- **Self-service center**
- **Manager center**

- Yes (we have a digital system)
- Yes (we do not have a digital system)
- No

34. How important is a Human Resource Management system for your district?

- Extremely important
- Very important
- Somewhat important
- Not too important
- Not important at all

Nebraska Survey of Educational Data Systems

35. Do you have a Student Information System in your district?

Student information systems generally provide the following features:

- Discipline and behavior management
- Grades reporting and transcripts management
- Health and Immunization records management
- Class scheduling management
- Parent portal
- Student personal information
- Manage student absences
- Messaging among stakeholders
- School calendar functions

- Yes (we have a digital system)
- Yes (we do not have a digital system)
- No

36. How important is a Student Information System for your district?

- Extremely important
- Very important
- Somewhat important
- Not too important
- Not important at all

37. How important were the following factors when selecting your current Student Information System (SIS)?

	Not important at all	Not too important	Somewhat important	Very important	Extremely important
Cost	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Flexibility (it is easily customized)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Continuity (changing would be disruptive or costly)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Usability (this SIS is easy to use)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Parent Access (this SIS provides a parent portal to student information)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Availability (all the modules I need)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Training (vendor provides training for teachers)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Support (vendor offers support)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please specify)

Nebraska Survey of Educational Data Systems

38. On the following factors, how would you rate your satisfaction with your current SIS?

	Very dissatisfied	Somewhat dissatisfied	Somewhat satisfied	Very Satisfied
Cost	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Flexibility	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Usability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Parent Access	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Availability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Training	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Support	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please specify)

39. Do you have a Procurement system in your district?

Procurement systems generally provide the following features:

- Purchasing
- Inventory management
- Vendor management
- Materials planning
- Warehouse management
- Workflow/approval
- Plant maintenance

- Yes (we have a digital system)
- Yes (we do not have a digital system)
- No

40. How important is a Procurement system for your district?

- Extremely important
- Very important
- Somewhat important
- Not too important
- Not important at all

Nebraska Survey of Educational Data Systems

41. Do you have a Substitute Management system in your district?

Substitute management systems generally provide the following features:

- **Substitute pool management**
- **Manage absences and substitute assignments**
- **Communication tools**

- Yes (we have a digital system)
- Yes (we do not have a digital system)
- No

42. How important is a Substitute Management system for your district?

- Extremely important
- Very important
- Somewhat important
- Not too important
- Not important at all

Nebraska Survey of Educational Data Systems

General Perceptions of Educational Data Systems

The following questions address your relative perceptions of data systems and data-related initiatives currently active in your school district.

43. Of the following educational data systems, please identify the five (5) most important to your district?

- Assessment Systems - Student Centric
- Learning Management Systems - Teacher Centric
- Professional Development Systems
- Content Management Systems
- Educator Evaluation Systems
- Progress Monitoring/RTI Systems
- Credit Recovery Systems
- Collaboration and Communication Systems
- Career Education Systems
- Nutrition and Food Management Systems
- Transportation Systems
- Guidance/Counseling Systems
- IEP Management Systems
- Library Management Systems
- Student Information Systems
- Test Analysis System
- Finance Systems
- Human Resource Systems
- Procurement
- Substitute Management

Nebraska Survey of Educational Data Systems

44. How important is data use for the following strategic initiatives in your district?

	Not important at all	Not too important	Somewhat important	Very important	Extremely important
Measuring success of early childhood providers	<input type="radio"/>				
Implementing a teacher effectiveness framework	<input type="radio"/>				
Measuring student perceptual information	<input type="radio"/>				
Improving special education services	<input type="radio"/>				
Offering credential-based career education	<input type="radio"/>				
Measuring the college-going and college-success rates of district graduates	<input type="radio"/>				

Nebraska Survey of Educational Data Systems

Costs of Educational Data Systems

The following questions address the costs associated with educational data systems in your school district.

45. Please estimate the annual cost for all educational data systems (Teaching and Learning, Administrative, and "Back Office") in your district?

\$ per year

46. Please estimate (to the nearest person) the number of full-time employees devoted to managing student information systems and accountability submissions in your district?

of full-time employees

Nebraska Survey of Educational Data Systems

Support Role of Nebraska Department of Education

Finally, the following questions address your perceptions of the role of the Nebraska Department of Education relative to educational data systems.

47. Given the right conditions (e.g., price, features, support, etc.) how likely would your district be to join an optional statewide/regional collaborative for:

	Extremely unlikely	Very unlikely	Somewhat unlikely	Somewhat likely	Very likely	Extremely likely
Assessment Systems - Student Centric	<input type="radio"/>					
Learning Management Systems - Teacher Centric	<input type="radio"/>					
Professional Development Systems	<input type="radio"/>					
Content Management Systems	<input type="radio"/>					
Educator Evaluation Systems	<input type="radio"/>					
Progress Monitoring/RTI Systems	<input type="radio"/>					
Credit Recovery Systems	<input type="radio"/>					
Collaboration and Communication Systems	<input type="radio"/>					
Career Education Systems	<input type="radio"/>					
Nutrition and Food Management Systems	<input type="radio"/>					
Transportation Systems	<input type="radio"/>					
Guidance/Counseling Systems	<input type="radio"/>					
IEP Management Systems	<input type="radio"/>					
Library Management Systems	<input type="radio"/>					
Student Information Systems	<input type="radio"/>					
Test Analysis System	<input type="radio"/>					
Finance Systems	<input type="radio"/>					
Human Resource Systems	<input type="radio"/>					
Procurement	<input type="radio"/>					
Substitute Management	<input type="radio"/>					

APPENDIX E: SURVEY OF NETA MEMBERSHIP

Welcome and Introduction

Hello,

Welcome to the Nebraska Survey of Educational Data Systems.

Members of the Nebraska Education Technology Association (NETA) are invited to provide information that will inform an interim study to the Nebraska Legislature prompted by LR 264. This study will examine Nebraska's educational data systems to including questions of adequacy, quality, cost, and transparency.

We appreciate you taking a few minutes to provide responses to the following questions on behalf of your school district. The questionnaire contains about 5 items and should take less than 5 minutes to complete.

If you have any questions about this survey, please contact Dean Folkers at dean.folkers@nebraska.gov.

Thank you for your participation!

NETA Member Information

Please tell us more about your work situation.

***1. Which of the following best describes the general category of your work?**

- School/district Educator (teacher, paraprofessional, etc.)
- School/district Principal
- School/district Technology Staff
- School/district Administrative Staff (non-superintendent)
- District Administrator (superintendent)
- ESU Technology Staff
- ESU Professional Development Staff
- ESU Administrative Staff
- Other

NETA Member Information (continued)

*2. For which Nebraska school district are you employed?

Select District Name from the following:

Your school district

General Perceptions of Educational Data Systems

The following questions address your relative perceptions of "Teaching and Learning" data systems in your school district. These educational data systems generally provide the following features:

Assessment Systems - Student-centric:

- Manage, assign, deliver and score student assessments
- Manage test items and forms including question types, questions, answers, rationale, etc.
- Author, review and approve workflows and tools
- Scoring tools
- Manage test set-up options

Learning Management Systems - Teacher-centric:

- Browse/search course catalog and view course description/content
- Complete pretest/posttest
- Complete course evaluation
- View/print transcript and certificate
- Manage learning activities, assign/schedule or publish, and archive
- Course/section self-registration

Professional Development Systems:

- View/print calendar with scheduled and completed evaluations, course sections, etc.
- Brick and mortar classroom, online, and asynchronous learning
- View/print certificate and transcripts
- Progress reports
- Override class enrollment
- Manage educator goal plans and coaching plans

Educator Evaluation Systems:

- View, complete, submit and approve an evaluation
- Create and schedule cycles and individual evaluations for educators, teachers, and principals
- Manage evaluation model frameworks and tools
- Manage and deliver surveys
- Administer and assign evaluations to educators
- Monitor progress

Progress Monitoring/RTI Systems:

- Student progress monitoring tools by stage of intervention
- Set intervention levels of intensity
- Manage resources: general education and special education teachers and specialists
- Monitor learning rate and level of individual student performance
- Ongoing student assessment
- Tiered instruction
- Parental reports on student progress

Credit Recovery Systems:

- Section scheduling supports students across schools, or within same school
- Pretest/Posttest
- Face-to-face student-teacher interaction
- Manage course catalog, including core and elective
- Independent completion option

Collaboration and Communication Systems:

- Chat, Wiki, blogs
- Discussion boards
- Staff collaboration and conferencing

Career Education Systems:

- Manages student progress toward industry certifications
- Identifies postsecondary options based on career interest inventories
- Tracks participation in career education programs
- Manages student personal learning plans
- Provides occupational information by career clusters/pathways

3. Of the following educational data systems, please identify the three (3) most important to you:

- Assessment Systems - Student Centric
- Learning Management Systems - Teacher Centric
- Professional Development Systems
- Content Management Systems
- Educator Evaluation Systems
- Progress Monitoring/RTI Systems
- Credit Recovery Systems
- Collaboration and Communication Systems
- Career Education Systems

Other Data Systems to Support Teaching and Learning

For the following group of questions, please consider systems BEYOND what is provided by your school district.

4. Are you using additional data systems to support teaching and learning, aside from the tools provided by your school district? (For example, a classroom social media page or online content.)

Yes

No

Other Data Systems to Support Teaching and Learning (continued)

5. Please identify any additional systems you use:

6. Are any of these systems obtained at a personal cost to you? (For example, do you pay for a subscription)

Yes

No

Other Data Systems - Estimated Personal Costs

7. Please estimate the annual cost to you, personally, for the use these additional systems.

\$ per year

NETA LR 264 Focus Group Invitation

The Nebraska Department of Education will be hosting virtual focus groups to gather more in-depth information about the Nebraska's educational data systems. The focus group arranged for NETA members will be held on Monday, June 30 from 1:30 - 3:30 pm CST.

8. Are you interested and available to participate in the virtual focus group on Monday, June 30 at 1:30 - 3:30 pm CST?

(If you select yes below, we will send you more information about how to access the NETA virtual focus group)

Yes

No

Contact Information

9. Please provide your contact information below.

Name:

School/Organization:

Email Address:

APPENDIX F: REFERENCES

Data Quality Campaign. (2014). Who Uses Student Data. Retrieved July 1, 2014, from <http://www.dataqualitycampaign.org/find-resources/who-uses-student-data/>

Data Quality Campaign. (2013). Nebraska State Analysis. Retrieved July 1, 2014 from Data Quality Campaign website: <http://www.dataqualitycampaign.org/files/pdf/stateprofiles/NE.pdf>.

Gross, B., and Jochim, A. (eds.). (2013). Prioritizing Productivity. The SEA of the Future, 2. San Antonio, TX: Building State Capacity & Productivity Center at Edvance Research, Inc.

NDE CIP Toolkit. Retrieved July 1, 2014 from Nebraska Department of Education Web Site: <http://www.education.ne.gov/CIPToolkit/index.html>.

Park, S., Hironaka, S., Carver, P. & Nordstrum, L. (2013). Continuous Improvement in Education. Carnegie Foundation for the Advancement of Teaching. Retrieved July 1, 2014 from: http://www.carnegiefoundation.org/sites/default/files/carnegie-foundation_continuous-improvement_2013.05.pdf.

Smarick, A., and Squire, J. (2014). The State Education Agency: At the Helm, Not the Oar. Retrieved from the Thomas B. Fordham Institute for Advancing Educational Excellence website: <http://edexcellence.net/publications/the-state-education-agency-at-the-helm-not-the-oar>.

APPENDIX G: LEGISLATIVE RESOLUTION 264

One Hundred Third Legislature

First Session

LEGISLATIVE RESOLUTION 264

Introduced by Scheer, 19.

Purpose: The purpose of this resolution is to examine the education data system. The study shall include an assessment of the adequacy of the current data system maintained by the State Department of Education to provide timely access to relevant and accurate data to meet various needs, including information for teachers in public schools about student achievement in their classrooms, objective research regarding educational practices, data for policy formation and review, and accountability to the public regarding the performance of the public schools. This study shall include, but not be limited to, an examination of the following:

- 1) The costs of the data system;
- 2) Legislative access and public access to the department's data system;
- 3) The role and inter-relationships between the Nebraska Student and Staff Record System, the Consolidated Data System, the State of the Schools Report, and the Statewide Longitudinal Data System as developed pursuant to federal grant funding;
- 4) Timelines and access to financial information related to school spending, budgets, taxes, and state aid;
- 5) Adequacy of school staff data in the Nebraska Student and Staff Record System in relation to teacher and classified staff qualifications, assignments, degree level, college credits, and experience; and
- 6) Any other issue related to the education data system that the study committee deems important.

NOW, THEREFORE, BE IT RESOLVED BY THE MEMBERS OF THE ONE HUNDRED THIRD LEGISLATURE OF NEBRASKA, FIRST SESSION:

1. That the Education Committee of the Legislature shall be designated to conduct an interim study to carry out the purposes of this resolution.
2. That the committee shall upon the conclusion of its study make a report of its findings, together with its recommendations, to the Legislative Council or Legislature.

APPENDIX H: COMPLETE BUDGET ESTIMATE

Nebraska Department of Education Infrastructure Activities Biennium Budget Request

		Year 1	Year 2	Year 3
		FY 2016	FY 2017	FY 2018
		SY 2015-2016	SY 2016-2017	SY 2017-2018
		50 Districts	150 Districts	245 Districts
Nebraska Education Infrastructure	<i>Activities and Objectives</i>			
	Identify and collectively procure state-sponsored SIS(s)			
	Support SIS Vendor Ed-Fi Interfaces	\$ 166,667	\$ 166,667	\$ 166,667
<i>NDE will leverage the Ed-Fi infrastructure to connect source systems and drive down costs.</i>	Support assessment vendor Ed-Fi interfaces	166,667	166,667	166,667
	Other source system interfaces to Ed-Fi (HR,SRS, applications)	250,000	250,000	250,000
	Support transfer to state supported systems in years 2 and 3	166,667	166,667	166,667
	Develop identity management solution for statewide single sign-on ESUCC Infrastructure	100,000	100,000	100,000
	Infrastructure scaling and security audit activities	500,000	500,000	500,000
	Total Contractual Expenditures	250,000	250,000	250,000
		1,600,000	1,600,000	1,600,000
	New Positions			
	Chief of Staff	60,523	60,523	60,523
	Chief Technology Officer	68,502	68,502	68,502
	Lead	60,523	60,523	60,523
	Senior	55,047	55,047	55,047
	Analyst	50,099	50,099	50,099
	Analyst	50,099	50,099	50,099
	Total Salary Expenditures	344,793	344,793	344,793
	Benefits Expenditures	165,264	165,264	165,264
	Operating Expenditures	23,805	23,805	23,805
	Travel Expenditures	10,395	10,395	10,395
	Equipment Expenditures	60,360	-	-
	Nebraska Education Infrastructure Total	\$ 2,204,617	\$ 2,144,257	\$ 2,144,257
NDE Accountability Data System	<i>Objectives</i>			
	Statewide rollout with dual submissions (rollout plan based on SIS vendor)	\$ 500,000	\$ 500,000	\$ 500,000
<i>NDE will reduce the burden of accountability data submissions on districts through automated process leveraging the Ed-Fi infrastructure.</i>	Develop and validate state accountability reports	500,000	500,000	500,000
	Develop business rules and validation for automatic accountability submissions	250,000	250,000	250,000
	Develop and validate federal accountability report submissions	500,000	500,000	500,000
	Develop district review and approval infrastructure	250,000	250,000	250,000
	Total Contractual Expenditures	2,000,000	2,000,000	2,000,000
	New Positions			
	Director, Accountability Data Systems	68,502	68,502	68,502
	Program Specialist III	55,047	55,047	55,047
	Database Analyst Lead	60,523	60,523	60,523
	Database Analyst Senior	55,047	55,047	55,047
	Database Analyst	50,099	50,099	50,099
	Database Analyst	50,099	50,099	50,099
	Total Salary Expenditures	339,317	339,317	339,317
	Benefits Expenditures	164,380	164,380	164,380
	Operating Expenditures	23,805	23,805	23,805
	Travel Expenditures	14,070	14,070	14,070
	Equipment Expenditures	37,680	-	-
	NDE Accountability Data System Total	\$ 2,579,252	\$ 2,541,572	\$ 2,541,572

Nebraska Department of Education Infrastructure Activities
Biennium Budget Request

		Year 1	Year 2	Year 3
		FY 2016	FY 2017	FY 2018
		SY 2015-2016	SY 2016-2017	SY 2017-2018
		50 Districts	150 Districts	245 Districts
NDE Education Intelligence System	<i>Objectives</i>			
	Dashboard statewide rollout	\$ 200,000	\$ 200,000	\$ 200,000
	Dashboard updates and extensions	500,000	500,000	500,000
	District data warehouses and reporting layer	333,333	333,333	333,333
	District data warehouse security layer (with and without de-identification)	250,000	250,000	250,000
	NDE data warehouse cubes and BI layer	166,667	166,667	166,667
	Total Contractual Expenditures	1,450,000	1,450,000	1,450,000
	<i>New Positions</i>			
	Chief Privacy Officer	79,873	79,873	79,873
	Director, Data Research and Evaluation	68,502	68,502	68,502
	Database Analyst Lead	60,523	60,523	60,523
	Database Analyst Senior	55,047	55,047	55,047
	Database Analyst	50,099	50,099	50,099
	Database Analyst	50,099	50,099	50,099
	Total Salary Expenditures	364,143	364,143	364,143
	Benefits Expenditures	168,387	168,387	168,387
	Operating Expenditures	24,510	35,510	35,510
	Travel Expenditures	17,680	17,680	17,680
	Equipment Expenditures	60,360	-	-
	NDE Education Intelligence System Total	\$ 2,085,080	\$ 2,035,720	\$ 2,035,720
Help Desk & Support				
	Expand help-desk support to include Year 1,2 & 3 systems	\$ 50,000	\$ 50,000	\$ 50,000
	Develop professional development curriculum on Year 1,2 & 3 systems	50,000	50,000	50,000
	Integrate statewide ticketing system for "virtual help desk"	166,667	166,667	166,667
	Level 4 Support and Contracts	500,000	500,000	500,000
	Total Contractual Expenditures	766,667	766,667	766,667
	<i>New Positions</i>			
	Director, Project Management Office	68,502	68,502	68,502
	IT Help Desk Specialist Senior	50,099	50,099	50,099
	IT Help Desk Specialist	41,706	41,706	41,706
	IT Help Desk Specialist	41,706	41,706	41,706
	Project Manager	50,099	50,099	50,099
	Project Manager	50,099	50,099	50,099
	Total Salary Expenditures	302,211	302,211	302,211
	Benefits Expenditures	158,393	158,394	158,395
	Operating Expenditures	23,805	26,555	26,555
	Travel Expenditures	10,395	10,396	10,397
	Equipment Expenditures	43,350	-	-
	Help Desk & Support Total	\$ 1,304,821	\$ 1,264,223	\$ 1,264,225
	Total NDE DRE Capacity Building	\$ 8,173,770	\$ 7,985,772	\$ 7,985,774

Nebraska Department of Education Infrastructure Activities
Biennium Budget Request

	Year 1 FY 2016 SY 2015-2016 50 Districts	Year 2 FY 2017 SY 2016-2017 150 Districts	Year 3 FY 2018 SY 2017-2018 245 Districts
NE Instructional Improvement System Objectives			
<i>NDE will build the capacity of Nebraska educators to continuously improve the quality of instruction for students through integrated, efficient systems. This will serve as an application store.</i>			
Identify and collectively procure state-sponsored systems			
Support vendors in integrating with SSO and state data system	\$ 166,667	\$ 166,667	\$ 166,667
Provide PD for districts	83,333	83,333	83,333
System licenses paid by state	5,000,000	5,000,000	5,000,000
App Store			
Survey Resources and Tools			
Total Contractual Expenditures	<u>5,250,000</u>	<u>5,250,000</u>	<u>5,250,000</u>
New Positions			
Director, Instructional Improvement System	68,502	68,502	68,502
Education Specialist IV	68,502	68,502	68,502
Program Specialist III	60,523	60,523	60,523
Applications Developer Lead	60,523	60,523	60,523
Applications Developer Senior	55,047	55,047	55,047
Applications Developer	50,099	50,099	50,099
Applications Developer	50,099	50,099	50,099
Total Salary Expenditures	<u>413,295</u>	<u>413,295</u>	<u>413,295</u>
Benefits Expenditures	194,588	194,588	194,588
Operating Expenditures	28,360	39,360	39,360
Travel Expenditures	22,475	22,475	22,475
Equipment Expenditures	66,640	-	-
NE Instructional Improvement System Total	<u>\$ 5,975,358</u>	<u>\$ 5,919,718</u>	<u>\$ 5,919,718</u>
Total NDE DRE Budget Issue Requests	<u>\$ 14,149,128</u>	<u>\$ 13,905,490</u>	<u>\$ 13,905,492</u>

