Oklahoma State Department of Education

Data Pipeline Needs Assessment Results

Synopsis and Recommendations

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Executive Summary

The Oklahoma State Department of Education (SDE), in partnership with the Office of Management and Enterprise Services (OMES) Information Services Division (ISD), is facing both exciting and challenging times ahead as it refines, expands, synthesizes and makes use of its data collection systems in an effort to efficiently and effectively use school and local education agency (LEA) data to inform policy and practice. The recently awarded Statewide Longitudinal Data System (SLDS) grant from the U.S. Department of Education (USED) Institute of Education Sciences (IES) provides SDE an opportunity to assess the current data system infrastructure and identify areas in need of change in order to build a centralized, coordination longitudinal data system.

As part of the overall Data Pipeline Project at SDE, SDE contracted with DataSmith Solutions to conduct a needs assessment survey of all Oklahoma LEAs and to conduct follow-up conversations and focus groups to gather more detailed information about current data system processes. The Data Pipeline Project in general, and the survey and subsequent LEA stakeholder engagement discussions in particular, is essential for the overall P-12 SLDS planning process to ensure that subsequent solutions address existing and future issues.

DataSmith Solutions administered an electronic survey to all school districts between September 27, 2012 and December 31, 2012. Additional conversations and focus groups were conducted in November 2012 to gather more information about trends in the survey responses. Survey responses were received from 259 people representing at least 173 districts. Many individuals did not provide the name of their district or their title, but 108 respondents identified themselves as superintendents and many of the others who provided their title work in technology offices.

The overarching feedback from the survey, focus groups and additional follow-up conversations indicate the LEAs hope that SDE will provide:

- Better management of existing processes & documentation;
- Better communication, specifically about changes to data requirements, new tools, and upcoming plans;
- Fewer last minute changes to collections;
- Better prioritization and better pacing of major changes that occur simultaneously;
- More transparency about processes and governance;
- More engagement from the field to ensure process & communication management meets LEA needs & understanding; and
- Partnership and clear definition of roles & responsibilities between SDE, OMES & LEAs.

Recommendations

1. Establish an enterprise-wide data governance program at SDE. An enterprise-wide approach at SDE to manage decision-making and change management is needed at SDE, and in conjunction with OMES, to ensure that a centralized coordinated approach to data collections, validation, analyses, access and use exists.
2. Establish data validation procedures at the LEAs and at SDE. Without reliable standardized validation procedures, SDE subjects itself to ongoing questions about the reliability and validity of data reports

and creates continuous struggles for LEAs to ensure they maintain and submit high quality data to SDE.

3. Conduct an inventory of all SDE data collections. SDE should conduct an inventory of all data collections, including program specific data collections outside of the WAVE, which details the data owners, data stewards, the purpose/mandate and the due dates. SDE should also develop a sunset review process for each collection and element to allow for the elimination or consolidation as mandates changes.
4. Publish an enterprise-wide data collections calendar. Based on the data collection inventory, SDE should publish an annual data collections calendar that documents each collection, owner, due date(s), legislative or federal mandate and point of contact. Better planning and management through the calendar would allow LEAs and SDE both to allocate resources in a more financially responsible way to other activities.
5. Establish a pilot or field testing process for new technology. SDE should develop a process with OMES and LEAs to partner in the development and change management of technology resources and applications. SDE, OMES and LEAs (e.g., advisory or technical committees) would work together to establish priorities and reasonable, functional parameters for new technologies or changes to existing tools and applications.
6. Develop a data-related training and documentation program at SDE. SDE should ensure that clear, useful, consistent training and documentation exists for annual collections and reporting procedures. Training materials and documentation should be easily accessible by both internal and external users, including external researchers to ensure appropriate use of SDE data.

Presenting Issue

The Oklahoma State Department of Education (OSDE), in partnership with the Office of Management and Enterprise Services (OMES) Information Services Division (ISD), is facing both exciting and challenging times ahead as it refines, expands, synthesizes and makes use of its data collection systems in an effort to efficiently and effectively use school and local education agency (LEA) data to inform policy and practice. The recently awarded Statewide Longitudinal Data System (SLDS) grant from the U.S. Department of Education (USED) Institute of Education Sciences (IES) provides SDE an opportunity to assess the current data system infrastructure and identify areas in need of change in order to facilitate the successful expansion to a robust P-12 longitudinal data system that benefits both local and state policymakers in their efforts to improve student achievement and ultimately feeds into the larger education information system in the state that spans the P-12, postsecondary and workforce spectrum.

The successful design and implementation of an effective longitudinal data system requires a thorough understanding of the existing infrastructure and its relationship with LEA technology and data-related processes so that SDE/OMES can plan for and address current issues. Documenting a baseline of technology and process issues faced by local school districts is a critical first step towards identifying immediate next steps and designing successful statewide solutions.

As part of the overall Data Pipeline Project at SDE and in order to document the current technology and process issues that affect the collection of consistent high quality data from LEAs, SDE contracted with DataSmith Solutions to conduct a needs assessment survey of all Oklahoma LEAs and to conduct follow-up conversations and focus groups to gather more detailed information. The Data Pipeline Project in general, and the survey and subsequent LEA stakeholder engagement discussions in particular, is essential for the overall P-12 SLDS planning process to ensure that subsequent solutions address existing and future issues.

Methodology

While the focus of many SLDS grant activities is on technology solutions, the ultimate success and use of data systems depends on developing efficient and effective processes around data standards, collection, storage, access and use and then effectively communicating requirements and expectations to all key stakeholders. The Data Pipeline Project Needs Assessment survey[1] addressed each of the following issues:

- Technology solutions – web portals, file transfer, data exchange and interoperability, student information systems (SIS)
- Data standards and documentation – data submission requirements, data standards, metadata, data quality verification and correction procedures
- Data-related training – professional development related to data submission processes, data quality training, data access and use
- Data governance – documented roles and responsibilities, communication between state and local education agencies, data sharing/access/privacy considerations, and data standards

[1] Attachment 1: *2012 Oklahoma Data Pipeline Project Needs Assessment Survey*

- Communication processes –between state and local entities, within LEAs among appropriate staff, and between LEAs and vendors/SIS providers
- Financial – staff and resource issues, costs of SIS and other technology, time and staff required for data collection and submission

The survey was administered electronically to all LEA superintendents via emails from the Cooperative Council of School Administration (CCOSA) in Oklahoma in partnership with SDE. Superintendents were asked to either complete the survey themselves and/or have their technology or data directors complete it. In order to gather both the technology and administrative perspectives, it was acceptable to receive responses from more than one individual in a district. The survey instrument was open from September 27, 2012 through December 31, 2012.

In addition to the electronic survey, follow-up conversations were conducted via email, phone call or in-person focus groups with representatives from 17 districts in order to probe deeper into technology and/or process issues and gather anecdotes and examples to provide context to the survey responses.

Survey Responses

- 259 total responses out of 537 districts (48.2%)
- 184 respondents provided their district name[2] (71.0% of 259)
- 173 district names were provided, with multiple responses from 11 districts[3]
- 175 respondents provide their title or role within their district (67.6%)
- 108 Superintendents (including Interim and Assistants) responded
- District enrollment size of those 173 districts that were named at least once:
    - 0-500 72
    - 501-1,000 44
    - 1,001-5,000 44
    - 5,001-10,000 7
    - > 10,000 6
- More superintendents responded from small- to mid-sized districts than from larger districts

Table 1. Respondent Title/Role by District Size*

	0-500	501-1,000	1,001-5,000	5,001-10,000	➢ 10,000	**Total**
Superintendent	55	28	23	1	1	**108**
Other	17	16	21	5	6	**65**
Total	**72**	**44**	**44**	**6**	**7**	**173**

*Applies only to those respondents who provided both pieces of information.

[2] This allowed further analyses of responses by size of district and title.

[3] Additional districts may be represented in overall survey results, and there may be multiple responses from more than 11 districts given that many respondents did not provide this information.

Needs Assessment Results

The overarching feedback from the survey, focus groups and additional follow-up conversations indicate the LEAs hope that SDE will provide:

- Better management of existing processes & documentation;
- Better communication, specifically about changes to data requirements, new tools, and upcoming plans;
- Fewer last minute changes to collections;
- Better prioritization and better pacing of major changes that occur simultaneously;
- More transparency about processes and governance;
- More engagement from field to ensure process & communication management meets LEA needs & understanding; and
- Partnership and clear definition of roles & responsibilities between SDE, OMES & LEAs.

Survey Results

Survey responses[4] overwhelmingly indicate that there is much room for improvement in terms of the management and oversight of the SDE data collection, training, governance and communication processes. While perceptions of effectiveness of different features of the collection system varied across districts, ranging from very effective to not effective, the average ranking for many important features was around or below 50%. Effective processes, documentation, and communication would ideally receive effective or very effective ratings from 85% or more of the respondents.

Responses were received from both superintendents (n=108, including interim or assistant superintendents) and other district staff, including technology directors, programmers, principals, curriculum and instruction staff and administrative assistants. However, responses did not typically differ based on the respondent's role or title. That is, superintendents generally responded the same way as other respondents.

Responses did vary quite often depending on the size of the district. Responses were received from 7 individuals in districts that serve over 10,000 students, while another 7 respondents represent districts that serve between 5,001 and 10,000 students. The vast majority of respondents represent districts with less than 5,000 students. This distribution is reflective of the proportion of small to large districts across Oklahoma. Not surprisingly, most of the superintendents who responded to the survey represent smaller districts, while responses from large districts typically came from technology directors or other staff. In smaller districts, the superintendents often also serve as the technology and data coordinators.

District size did affect the responses provided for many questions, particularly those about technology, data standards, training, and resources. Available resources, including staff trained in and dedicated to technology and/or data-related issues, affected the perception of the effectiveness of data-related documentation, training and collection processes. It should be noted, however, that the small number of responses received from large districts easily skews averages and percentages when looking at summary statistics. One response at either end of the spectrum drastically changes the average

[4] Attachment 2: *OSDE Needs Assessment Summary Stats_Jan2013*

perception of effectiveness when there are 14 or fewer responses in a group, as opposed to the impact of a single response when included in a group of over 160 responses.

Due to the inequality in the number of responses from differently sized districts, all further synopses of survey findings will be based on the cumulative set of responses and not disaggregated by size.

Technology

The majority of respondents (84.7%, n=188[5]) use MAS Software Solutions for their local student information system (SIS), while 13.5% (n=30) use Power School. The remaining two percent use locally developed SISs. A majority of respondents (60.4%, n=145) indicate that they are able to easily map data elements from their SIS to SDE specifications. When there are difficulties, they most frequently occur with demographic (58.9%, n=89) and enrollment data (39.1%, n=59)

Most respondents (92.8%, n=96) indicate that 3 or more staff have WAVE sign-on access, with 25.2% (n=63) of the districts indicating that 10 or more have sign-on authority.

In terms of file and data uploads, 61.9% (n=154) of the respondents indicated they sometimes or frequently have problems with WAVE, while 44.4% (n=108) report problems with EDFacts reports. Specifically, the problems center on confusing error messages (64.9%, n=122), delays with submission (50.5%, n=95) and access issues (47.3%). Areas that rarely or never cause problems include data element formatting (19.1%, n=36), file size limits (15.4%, n=29) and interoperability standards and processes (12.2%, n=23). The data or file correction process sometimes or frequently causes problems for 64.8% (n=155) of the respondents.

Only 37.3% (n=90) of the respondents reported that they frequently exchange student data with other districts, while 34.9% (n=84) reported that they sometimes do. Of those that do exchange student records with other districts, 62.1% (n=123) reported that the exchange process is somewhat effective. Difficulties usually arise because of lack of time or resources (46.4%, n=70), different data standards (45.0%, n=68) or technology problems (39.1%, n=59).

Data Standards and Documentation

Respondents indicated that file specifications are available for many files as 29.9% (n=59) indicated they are available for *all* files, while 61.9% (n=122) indicated they are available for *some* files. Documentation about expected element formats was rated as clear and helpful by 69.1% (n=141) of respondents, while documentation about what elements are due when were rated as clear and helpful by 66.2% (n=135) of the respondents. Sixty-seven percent of respondents (n=138) found documentation about how to files are submitted/uploaded to be clear and helpful.

Overall, the documentation about file format, submission and correction processes were reported to be more useful than clear, and many indicated that there are access issues to these documents. Table 2 delineates the ratings of clarity, usefulness and access related to key documentation.

[5] All percentages are based on number of responses per question instead of the total number of responses received (n=259). Many respondents chose to skip some questions and including the missing responses would artificially decrease response rates for each item.

Table 2. Data Documentation Ratings of Clarity, Usefulness and Access

	Clarity: Good or Excellent		Usefulness: Usually or Very Useful		Access: Easy or Very Easy	
	Percent	*Count*	*Percent*	*Count*	*Percent*	*Count*
File submission	38.1	77	53.0	107	33.8	68
File Format	36.1	73	51.7	104	33.5	67
File Due Date	35.8	83	53.2	107	33.3	67
Data Correction Process	29.5	59	47.0	95	30.3	61
Data Correction Timelines	21.5	63	48.8	98	31.8	64

SDE does provide a variety of resources or tools to districts to answer data-related questions, including a help desk, webinars, online tutorials and phone/email support. Respondents found these to generally be helpful as shown in Table 3.

Table 3. Usefulness of Data-Related Resources and Tools

	Very Useful		Somewhat Useful	
	Percent	*Count*	*Percent*	*Count*
Help desk	15.1	31	44.9	92
Phone	28.9	59	41.7	85
Email	24.6	50	52.2	106
FAQs	9.0	18	50.5	101
Webinars	14.4	29	56.2	113
Online Tutorials	9.6	19	49.8	98

Data-Related Training

Most of the data-related training received by the districts is in-person according to 59.8% (n=119) of the respondents, and most of that training is provided by SDE (72.3%, n=102). Some respondents (35.5%, n=50) indicate that they also receive in-person training from their vendors. Most in-person training occurs at regional meetings per 62.9% (n=105) of the respondents, while some occur at annual statewide meetings (47.9%, n=80) or at local conferences (39.5%, n=66).

Most respondents (64.1%, 109) indicate existing online resources and training materials include reference guides, while 60.6% (n=103) indicate that tutorials exist online. Other types of resources include webinars (69.5%, n=121) and a help desk (43.7%, n=76). In terms of usefulness, 52.6% (n=101) of respondents indicate that annual trainings are somewhat useful and 17.7% (n=34) indicate they are very useful. As for online training, 54.4% (n=105) indicate online resources are somewhat useful, while 10.9% (n=21) indicate they are very useful.

Respondents indicated that they strongly prefer in-person training (77.6%, n=152); followed by online tutorials (38.3%, n=75) and online reference guides (38.3%, n=75), a help desk (27.0%, n=53) and online frequently asked questions documentation or FAQs (20.9%, n=41).

The majority of respondents (n=181-188) responded to a question about how sufficient the documentation and training was for particular aspects of the data system. Table 4 displays the responses.

Table 4. Sufficiency of Training Materials by Topic

	Sufficient	Not Sufficient	Want More Information	Response Count
Data privacy and confidentiality	55.9%	28.0%	23.7%	186
Data security	55.8	27.1	23.8	181
File creation	51.9	30.3	24.9	185
File submission	53.5	29.7	24.3	185
Data element format & definition	46.8	37.6	28.0	186
Data access management	46.7	34.6	27.5	182
Data reports and analysis	46.3	34.0	29.3	188
Checking data quality or accuracy	42.2	35.3	32.6	187
Data sharing processes and agreements	37.9	36.3	34.6	182
Data/File correction process	37.3	42.7	30.3	185
Data exchange with other districts	31.9	40.5	36.8	185

Data Governance

Data governance incorporates the overall management and decision-making about data-related activities at SDE, including data collections, element definitions, training, access and use. Seventy-five percent (75.5%, n=151) of the respondents indicated that they are not aware of data governance activities at SDE, and 95.5% (n=190) indicate they do not participate in SDE data governance activities. In addition, 64.6% (n=128) of the respondents do not think that their district leadership participates in SDE data governance activities.

Districts were also surveyed about particular aspects of SDE data governance that impact their work, beyond an awareness of the existence of general data governance activities. For example, 46.8% (n=89) of respondents indicated that they were aware of the SDE process for identifying data elements to collect each year, while 40.% (n=75) were aware of how LEAs participate in the approval process for data collections, and 38.6% (n=71) were aware of documentation and training processes. Fewer respondents (35.4%, n=67) were aware of the purpose or mandate for each data element or the review and approval process regarding data collections (36.9%, n=69).

A little over 40% of respondents (42.8%, n=83) indicated their districts have designated data coordinators who act as an SDE liaison, and 62.9% (n=124) responded that their district has designated data stewards for specific types of student data. Only 16.3% (n=32) indicated that their district as a data governance program and even fewer are certain that their data governance programs include policy, program and technology staff in their data governance program. Approximately 50% of the respondents (52.3%, n=103) indicate that their district does not provide training or documentation to their schools about data standards, collection, submission or quality, presumably relying on SDE and/or vendor training and documentation for their schools.

Communication Processes

Overall, respondents indicate that there is room for improvement in how SDE communicates with LEAs about various aspects of the data system. Table 5 presents a picture about the effectiveness of the communication activities.

Table 5. Effectiveness of Data-Related Communications

Do you feel that the communication you receive from SDE about data requirements are	Yes	Respondent Count
Informative	55.7%	107
Helpful	52.1	99
Disseminated to the right people	50.5	95
Clear	42.7	82
Frequent enough	41.3	78
Detailed enough	37.0	71
Timely	34.4	66

Respondents indicated that the best way by far (95.8%, n=184) to communicate with districts about data-related information is via email announcements (with or without attachments). Beyond email, the best methods of communication were via letters to superintendents (69.3%, n=133), listservs (53.6%, n=103, e.g., WAVE coordinators or data coordinators), and at conferences and meetings (51.6%, n=99). The following received the lowest ratings as effective communication tools: REACH network (15.6%, n=30), SDE newsfeed (10.9%, n=21) and letter to assistant superintendents (10.9%, n=21).

Almost all respondents (92.1%, n=175) indicated that district superintendents currently receive data-related communications, while 47.1% (n=90) indicated that WAVE coordinators do and 37.4% (n=71) indicated that principals do. Only 25.8% (n=49) indicated that federal program area staff receive data-related communications, and 20.5% (n=39) indicated that designated data coordinators receive these communications.

Financial and Resources

The biggest concerns raised by respondents about data-related issues include having enough staff to meet collection needs (82.3%, n=154), the ability to provide the necessary time and resources to meet SDE data needs (67.6%, n=124), ensuring data quality (62.2%, n=115) and the ability to sustain resources (60.5%, n=112). Table 6 identifies key topics about which respondents feel the need to know more.

Table 6. Information Needs by Topic Area

Topic	Percent of Respondents	Respondent Count
File due dates	74.3	133
Submission process	73.2	131
Correction process	70.9	127
Access & use of WAVE data	60.9	109
Purpose for each element	59.2	106
Data standards (e.g., definition, format)	55.9	100
Business rules & data quality checks	51.4	92

Many respondents indicated that their district maintains specific technology tools separate from what the state provides. For example, 79.4% (n=131) of the respondents indicate that their district maintains district and school report cards, while 56.4% (n=93) maintain separate collections for federal program data. Fifty-one percent (n=85) of the respondents indicate their districts maintain their own web portal, while only 32.7% (n=54) reported maintaining separate research and analytical tools.

Almost half of the respondents (41.8%, n=77) reported that their districts have three to five full-time equivalent (FTE) staff involved in data activities related to SDE submissions, while 29.3% (n=54) have only 1-2 FTEs in this role. Most of these FTE are also responsible for other activities, since 63.7% (n=100) of the respondents indicated that they have 1-2 FTE dedicated solely to SDE reporting, whereas 28.7% (n=45) have 3-5 FTE dedicated solely to reporting activities.

When asked *"What services or resources do you wish SDE could provide to reduce your costs?"* respondents did not overwhelmingly call for any particular resource or tool. Some respondents indicated that their priority is improved access to SDE data and reports (44.1%, n=83), while a few supported the idea of a statewide SIS (37.8%, n=71) or an improved interface or portal for use with file uploads (34.6%, n=65).

Follow-up and Emails and Phone Calls Focus Groups

Survey respondents were asked to indicate if they were willing to participate in follow-up conversations with DataSmith Solutions in order to probe deeper into some of the issues raised on the survey. Although many more indicated a willingness to participate, 17 district representatives actually did participate in follow-up activities.

The follow-up conversations, both individually and in group settings, yielded many consistent responses covering a few basic themes[6].

Timing of new reports and changes to existing reports

The topic raised most frequently was the limited amount of time that districts have to respond to new reports or changes to existing reports. Last minute changes or short advanced notice of new reports often results in extra cost to districts in overtime pay and/or contracted services, increased manual reporting, and confusion about what is required given the lack of sufficient data standards. Many respondents also raised concerns about data quality given last minute changes that come without either clear or timely documentation or training. Untimely and seemly random changes often come from

[6] Attachment 3: *Notes from Follow-up Conversations and Focus Groups*

specific program offices within SDE or OMES without understanding that those changes may conflict with other reporting requirements and may not match how the data is collected in the SIS. These unintended consequences also result in LEAs spending excessive time and resources trying to comply with multiple requirements and often require manual calculations and data entry in addition to the standard automated reporting through the WAVE.

Validation of data

Participants consistently expressed great concern that there is no process to allow them to validate data that is used in SDE reports and analyses before they are published. District representatives reported that they are often not sure what data source is used, particularly in an important report such as the A-F rating system or the Early Warning Indicator System. Examples were provided of seeing clearly erroneous data in the published report, in one case resulting in a lowered A-F rating, and having it take a month to correct because districts were not sure where the data came from and what the process for correcting the report was. Participants expressed a desire for SDE to develop a reliable data validation process before attempting to create new reports or dashboards that might be using low quality data.

End-user engagement

Participants strongly lamented the lack of end-user engagement in the design process of new reports and in the decision-making process regarding priorities and implementation process. SDE had an advisory board in the past that seemed to work well, but was disbanded at some point. Most participants were unaware that there is currently an SLDS committee, and those that were aware of the committee expressed concern that district concerns were not being heard by the committee. Even if heard, there is still confusion about their role in the decision-making or governance process. Respondents feel that many of the issues about design, changes, access and use could have been avoided or corrected easily if SDE engaged a few districts in pilot or field testing before releasing statewide. End-users can also be used to review and improve training and documentation before released officially.

Process Management

Some participants stated that the general technology associated with the WAVE was fine; the problems arise with the lack of effective process management. That is, for each step of the process of releasing a new application or change in an application, there should be a defined set of processes that are standardized, consistent, and shared in a timely fashion. These processes include, but are not limited to, pilot testing, documentation, training, communication at each step of the process, deployment and assistance with implementation and operation. A strong data governance program at SDE would help to develop these processes on an enterprise-wide basis and reduce the occurrence of individual program areas making unilateral decisions without recognizing their impact on requirements from other areas and causing additional work for LEAs. It should be noted that many of the focus group participants were unaware of the move of the Information Technology staff to a separate state agency because there was no effective communication about that to LEAs, even though it has a significant impact on their work. For others it was clear that the technology had moved to another agency, but it was unclear when to contact OMES as opposed to SDE, even for the help desk. Since the data system is to support education policy and practice, participants expressed a desire for SDE oversight and problem resolution.

Recommendations

1. Establish an enterprise-wide data governance program at SDE. An enterprise-wide approach to manage decision-making and change management is needed at SDE, and in conjunction with OMES, to ensure that a centralized coordinated approach to data collections, validation, analyses, access and use. Without a strong centralize enterprise-wide approach, SDE will face continued concerns about data quality, inefficient use of time and resources and problematic relationships with LEAs due to redundant and erratic data reporting processes. A strong data governance program will establish standardized, replicable processes and agreed upon collection parameters and procedures that guide the timing, communication, documentation and organization of the data system, in addition to establishing and enforcing clear roles and responsibilities for SDE, OMES and LEA staff.
2. Establish data validation procedures at the LEAs and at SDE. SDE should develop a process for LEAs to review and approve reports and analyses as part of a validation process prior to public release. These procedures might include the incorporation of standard business rules and edit checks in the LEA SISs, in LEA report production and/or at SDE prior to conducting analyses. Other options might include the purchase or development of data certification tools to use prior to transferring data from the LEA to SDE. Without reliable standardized validation procedures, SDE subjects itself to ongoing questions about the reliability and validity of data reports and creates continuous struggles for LEAs to ensure they maintain and submit high quality data to SDE.
3. Conduct an inventory of all SDE data collections. SDE should conduct an inventory of all data collections, including program specific data collections outside of the WAVE, that details the offices responsible for the collection, data owners and data stewards for each data element and collection, the purpose/mandate for each element, the date(s) collected and the frequency of the collection. The data governance program should also develop a process for a periodic review (e.g., every 3-4 years) of each collection and element to ensure its mandate still exists, the definitions and code sets are still applicable and a sunset process to eliminate or streamline each collection and data element.
4. Publish an enterprise-wide data collections calendar. Based on the data collection inventory, SDE should publish an annual data collections calendar that documents each collection, owner, due date(s), legislative or federal mandate and point of contact. This calendar should be published annually, preferably a year in advance, and be static for that year (academic or calendar) except in rare circumstances. With enough advanced notice to prepare for each report, LEAs and vendors can make timely and cost effective changes, build in necessary business rules, conduct data validation tests and plan the necessary resources to support those reports. Better planning and management should allow LEAs and SDE both to allocate resources in a more financially responsible way to other activities.
5. Establish a pilot or field testing process for new technology. SDE should develop a process with OMES and LEAs to partner in the development and change management of technology resources and applications. SDE, OMES and LEAs (e.g., advisory or technical committees) would work together to establish priorities and reasonable, functional parameters for new technologies or changes to existing tools and applications. End-users in LEAs would be engaged to review, comment and/or test new documentation, training materials and technology to ensure that it is clear, meets the parameters of all districts and has no bugs before statewide release. Potential changes to existing

collections would be reviewed by LEAs to ensure they do not conflict with other requirements and do not cause unintended consequences.

6. Develop a data-related training and documentation program at SDE. SDE should ensure that clear, useful, consistent training and documentation exists for annual collections and reporting procedures. Training materials might include in-person training, train-the-trainer sessions, webinars, online tutorials, online reference guides, and help desk support. Material should be written in non-technical jargon to ensure that non-technical end-users can readily use them. Training materials and documentation should be easily accessible by both internal and external users, including external researchers to ensure appropriate use of SDE data.