



# A Checklist to Guide Data-Visualization Decisions

June 2018

The financial transparency requirement in the Every Student Succeeds Act (ESSA) requires the reporting of per-pupil expenditures down to the school level on state and district report cards. Past [reports and webinars](#) have covered decisions and actions that state education agencies (SEAs) can take in order to meet the requirement, such as [inventorying data](#) and [allocating central expenditures](#). Now that many SEAs are accessing the necessary financial data, some are turning their attention to figuring out how to report the data through clear visualization.

The reporting requirement gives SEAs the opportunity to build an [information system](#) and data-visualization product that helps district and school leaders use the data to leverage their limited dollars to maximize student learning. When considering how school-level per-pupil expenditures are to be made public, an important first step is to understand how the data can (and will) be used by various stakeholders (e.g., policymakers, district and school leaders, community advocates, parents, media, etc.).

## Step 1: Understanding Data Use

As SEAs embark on the process of developing a way to visually communicate these school-level per-pupil expenditures with various stakeholder groups, the state leaders might start by considering what they hope to accomplish in the reporting. If the goal is simply to comply with the law, minimal contextual information is required. But if state leaders want to build a system that can inform other questions, such as those in the checklist in Exhibit 1, additional data need to be built into the information system.

### Exhibit 1. Data-visualization checklist

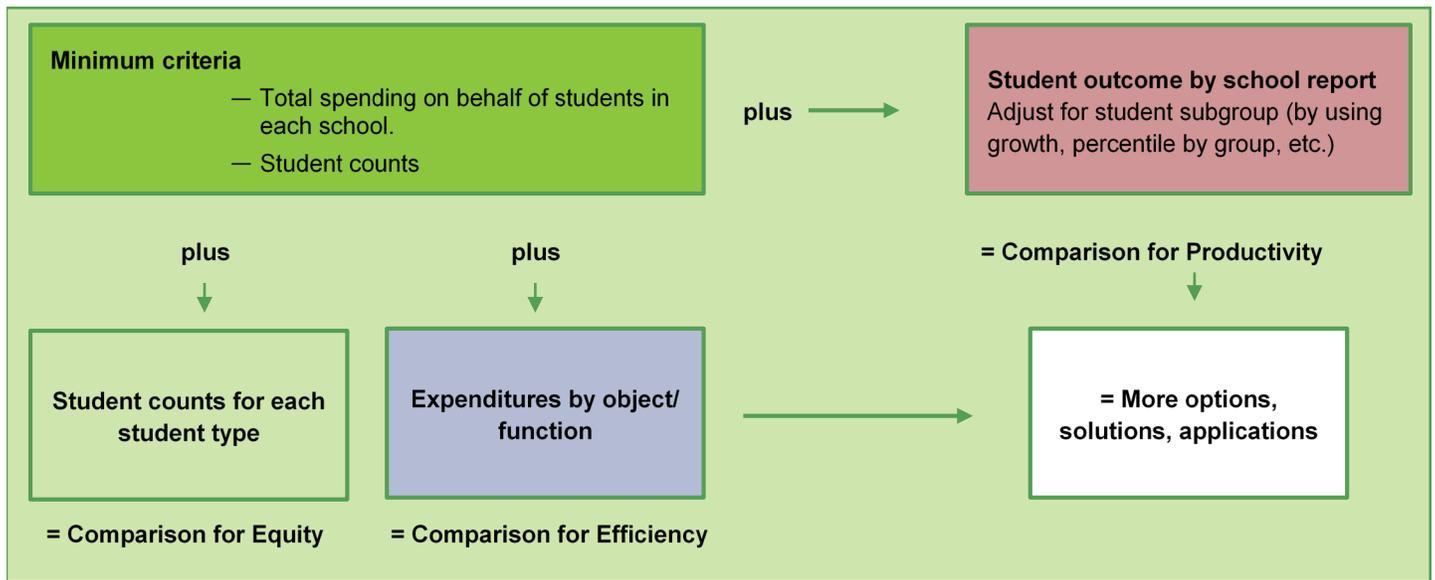
<i>What questions do state leaders want a data-visualization to answer?</i>	
1.	How much is spent on students in SCHOOL X?
2.	Is SCHOOL X spending more or less per pupil than other schools in the same district?
3.	Is SCHOOL X spending more or less per pupil than other schools with similar student demographics?
4.	Is SCHOOL X spending more or less per pupil than other schools in the same state?
5.	Does it appear that DISTRICT X divvies up funds equitably across schools in the district?
6.	What is driving spending differences across schools?
7.	What funds/expenditures (if any) were excluded from PPE calculation?
8.	How does SCHOOL X's spending on services (e.g., benefits, transportation, food) compare to spending at other schools? (Is SCHOOL X able to get similar services for less or more?)
9.	How does SCHOOL X's costs for different inputs (e.g., teaching, leadership) compare to costs at other schools?
10.	Is there a school (or schools) that SCHOOL X can learn from? Specifically, is there a school (or schools) that has a similar spending level (and similar demographics) but is able to achieve higher outcomes for students?
11.	Compared to peer schools, how well is SCHOOL X able to leverage funds to achieve outcomes for its students?

By pairing the school-level spending data with other relevant information, state leaders can explore how this collective data can be used to answer a range of critical questions from multiple stakeholders to advance state education priorities.

- If state leaders are interested in **Equity**: Pairing financial data with student demographic information can allow users to make comparisons for equity. *Is School X receiving its fair share of funds based on the students served?*
- If state leaders are interested in **Efficiency**: Adding a breakdown of expenditures, such as how much was spent per pupil on instruction or transportation, enables stakeholders to draw conclusions about efficiency. *Is School X spending more or less than similar schools on transportation, and is there a way to bring those costs down?*
- If state leaders are interested in **Productivity**: Adding student performance information alongside school-level per-pupil spending, permits data users to determine which schools are best able to leverage their dollars to improve student performance. *Is School X performing better or worse relative to schools with similar spending levels and student demographics?*

Figure 1 shows what data can be added to a state's school-level spending reporting to put the per-pupil numbers in context and allow for different types of analyses.

**Figure 1. Different data pairings enable different analyses and uses**



## Step 2: Determining What Data Elements to Include

Exhibit 2 lists the various data elements needed to accomplish potential goals or answer key questions. Based on state leaders' answers to the questions posed in Exhibit 1, state leaders can use the list below to catalog data-collection needs and begin to source all data elements. Unlike the school-level financial data, many of these data elements are readily available as state agencies already collect and report on existing school report cards.

**Exhibit 2. What data are needed for different types of analyses?**

<b>Basic ESSA compliance</b>	
	School-level per-pupil spending from <u>federal</u> sources
	School-level per-pupil spending from <u>state and local</u> sources
	All expenditures (both those coded directly to schools as well as all central expenditures) are included in the numbers reported
<b>PLUS:</b>	
	School-level per-pupil spending broken out by site share (what is actually coded to the school) and site share of central (what is coded at central, averaged across schools, and allocated back out), also broken out by source of fund (federal, state/local)
	Sum of site share and site share of central per-pupil numbers
	School enrollment
	List of excluded expenditures
<b>= Enables better understanding of each school's actual share of resources</b>	
<b>PLUS:</b>	
	Type of school (elementary, middle, etc.)
	School demographic information (enrollment by student types, such as English-language learners, low-income, or special education)
<b>= Enables understanding of how funding varies with student needs</b>	
<b>PLUS:</b>	
	Breakout of expenditures by <i>function</i>
	Breakout of expenditures by <i>object</i>
	Breakout of expenditures by <i>program</i>
<b>= Enables comparisons in spending efficiencies across schools and districts</b>	
<b>PLUS:</b>	
	School-level performance on state-preferred metric or metrics (state test scores, growth scores, graduation rates)
<b>= Enables exploration of how well schools are leveraging resources to achieve outcomes for students</b>	

### Step 3: Building Data Visualization

Once state leaders understand the questions they want the visualization to answer, they can determine whether the SEA has internal capacity to develop the visualization or if external expertise is needed. In some cases, state leaders have decided to use external experts to help build internal team capacity to create and update financial transparency visualizations. In other cases, state leaders have hired vendors to develop and manage the visualization tools entirely.

Regardless of how the actual development happens, the initial steps detailed above will help state leaders consider all the uses and opportunities as they deliberate the creation of a data-visualization product that meets the financial transparency reporting requirement. Coupling the new financial data with additional elements will expand the usefulness of all data-collection efforts and help advance improvements in education systems.

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