![Data-Driven Human Capital Strategies logo]

**Data-Driven
Human Capital
Strategies**

HOW TO GUIDE:

# Analyze Educator Data for High Impact

Introduction

Local Education Agencies (LEAs) typically have access to an array of data; knowing what to data to collect and how to analyze and use that data is an ongoing challenge. It is critical for LEAs to identify what educator[1] data matters most to their organization, department and/or team and prioritize the collection and analysis of data to inform the LEA's human capital systems. In general, analysis of educator data should help LEAs learn about, inform, and improve human capital initiatives that ultimately help improve educator practice and student learning. Focusing sufficient time and effort on this step results in making decisions and employing strategies that are likely to improve student learning. This "How To" guide lays out a process for LEAs to implement as they work to proactively analyze educator data to inform their human capital work.

Process

This guide presents steps for analyzing data, which align with various points along the cycle of improvement.

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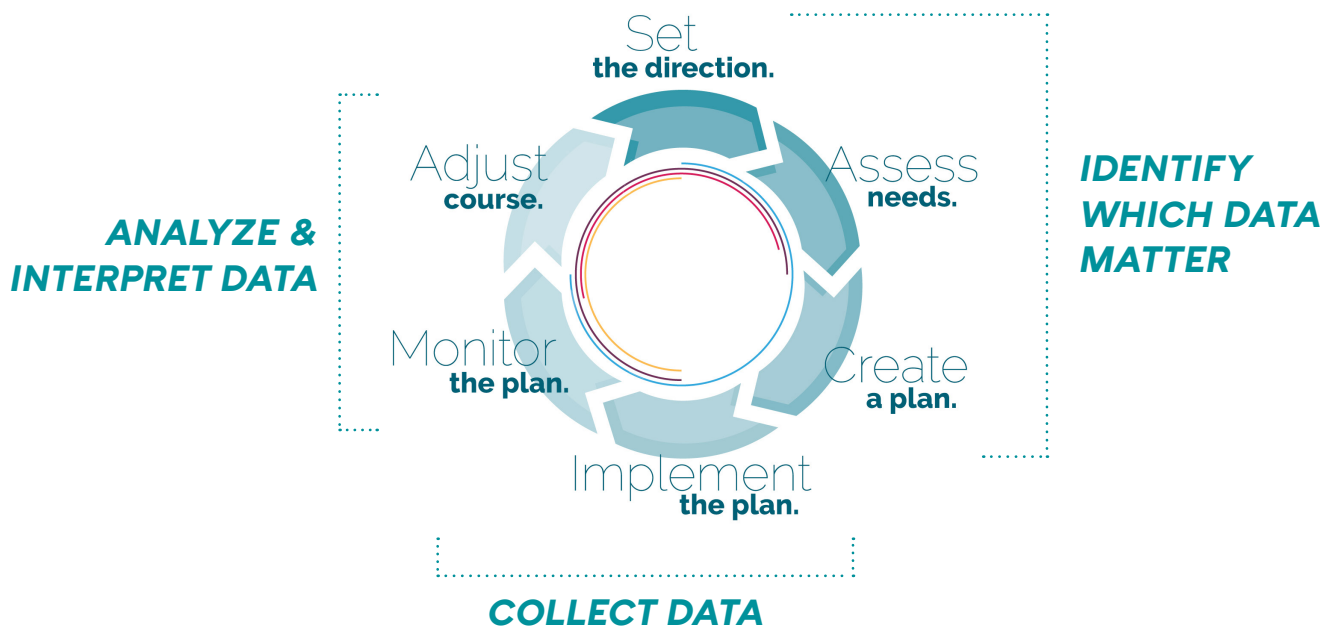
1   For the purposes of this document, "educators" refer to teachers and principals.

1. Identify Which Data Matter

The first step in analyzing educator data is identifying the key data you need to measure to better understand the implementation and results of your human capital work. At a minimum, educator data should help LEAs understand how well talent is being managed with the following strategies in mind:

- Consistently hire effective educators
- Intentionally assign educators
- Strategically retain and develop educators
- Effectively deliver HR services

The **Power Metrics (Figure 1)** are a subset of metrics identified in Urban Schools Human Capital Academy's (USHCA) **Assess, Breakthrough, Change Tools** that define the key metrics that LEAs need to collect and analyze to better understand the quality of their educator workforce. For an LEA with limited central office capacity, the Power Metrics can bring focus to the most important data to collect and analyze regularly.

CHECKLIST FOR AVAILABILITY AND USE OF HUMAN CAPITAL DATA

(Based on USHCA's Power Metrics, Pennsylvania's Classroom Level: Data to Action e-book, and Pennsylvania's Human Capital Systems Self-Assessment)

Inquiry: Are we recruiting effective educators?				
Metric	We use this data	We have access to this data	We can begin to collect this data	Not a current priority
Percentage of new teachers –by educator preparation provider—with effective or higher ratings on the multiple measures used in PA's educator effectiveness system at the end of Years 1, 2, and 3	☐	☐	☐	☐
Percentage of new teachers—by educator preparation provider—by performance on multiple measures of student achievement and on the classroom observations and practice model	☐	☐	☐	☐
Applicants per vacancy by subject and educator preparation provider	☐	☐	☐	☐
Number/proportion of applicants who are educators of color	☐	☐	☐	☐
Number/proportion of applicants who meet established screening criteria, overall and in high need schools	☐	☐	☐	☐
Number and percentage of vacancies filled by May 1, July 1, August 1, and after opening of school	☐	☐	☐	☐
Percentage of principals satisfied with quality of applicant pool, and or support received to help match candidates to vacancies	☐	☐	☐	☐
Inquiry: Are we strategically assigning educators?				
Metric	We use this data	We have access to this data	We can begin to collect this data	Not a current priority
Distribution of teachers across schools, by rating on the multiple measures of the educator effectiveness system and school performance	☐	☐	☐	☐
Percentage of incoming and outgoing transfers by performance rating and school performance	☐	☐	☐	☐
Percentage of new teachers in high need schools	☐	☐	☐	☐
Inquiry: Have we delivered human capital services effectively?				
Metric	We use this data	We have access to this data	We can begin to collect this data	Not a current priority
Percentage of principals satisfied with HC management learning opportunities and overall satisfaction with HC services	☐	☐	☐	☐
Percentage of principals satisfied with data support for HC management	☐	☐	☐	☐

Inquiry: Are we providing useful professional learning for educators?				
Metric	*We use this data*	*We have access to this data*	*We can begin to collect this data*	*Not a current priority*
Teacher needs assessment surveys	☐	☐	☐	☐
Teacher surveys on past professional learning opportunities and follow-up supports	☐	☐	☐	☐
Measures of outcomes of professional learning opportunities: changes in educator knowledge	☐	☐	☐	☐
Measures of outcomes of professional learning opportunities: changes in educator practice and student learning	☐	☐	☐	☐
Aggregated data from teacher evaluation/ multiple measures and PCAAS Teacher Value Added Reports	☐	☐	☐	☐
Notes/data from teacher observations and walk-throughs	☐	☐	☐	☐
Feedback on mentoring and induction, from mentors and mentees	☐	☐	☐	☐

Inquiry: Are we offering sufficient leadership roles for educators?				
Metric	*We use this data*	*We have access to this data*	*We can begin to collect this data*	*Not a current priority*
Number and proportion of effective educators serving in leadership roles, by school	☐	☐	☐	☐
Number and proportion of effective educators serving in leadership roles, by race/ethnicity	☐	☐	☐	☐
Feedback from educators regarding satisfaction with opportunities for leadership roles				

Inquiry: Are we retaining educators strategically?				
Metric	*We use this data*	*We have access to this data*	*We can begin to collect this data*	*Not a current priority*
Percentage of effective teachers retained by race/ethnicity and by subject area	☐	☐	☐	☐
Percentage of effective teachers retained in highest need schools compared to other schools	☐	☐	☐	☐
Number and percentage of tenured teachers who either improve to effective ratings or are exited	☐	☐	☐	☐
Percentage of probationary teachers non-renewed for low performance prior to being granted tenure	☐	☐	☐	☐
Percentage of teachers excessively absent that are improved or exited	☐	☐	☐	☐
Teacher exit interviews	☐	☐	☐	☐

2. Collect Data

First, determine what educator data the LEA currently has available in existing databases and/or sources, such as the multiple measures in the PA educator effectiveness system. Next, determine if existing data is being used to support human capital decisions. USHCA's **Power Metrics Assessment** is a tool to help LEAs assess the availability, use and sharing of Power Metrics and develop next steps for data readiness.

If collecting new data is required, LEAs should prioritize what data to collect. First select a core purpose for data analysis (e.g., Have we retained effective teachers strategically?). Next, select one teacher metric (e.g., percentage of effective and highly effective teachers retained by high/low need schools and by subject area) and principal metric (e.g., percentage of high performers retained) to collect. When making decisions about any new data that needs to be collected, LEAs should be aware of the time and effort required to collect the data (both on central office and on stakeholders in the case of survey, etc.). As a result, they should ONLY prioritize collecting new data that will be used and shared to inform decision-making in the LEA. This is particularly important for smaller districts that may have limited capacity to collect and analyze new data.

Finally, when collecting data, it's important to catalogue any notes and nuances of the data collected at that given time. Below are two other key topics to consider.

- ◾ *Types of data*

  - **Quantitative** — data that highlights quantities, numbers and typically things that are measurable.

  - **Qualitative** — data that is mostly captured via descriptions, observations, anecdotes, conversations, written responses, etc.

- ◾ *Data management*

  - **Determine a shared digital file storage scheme** and organize the data in a manner that is transparent and lends itself to collaboration across and within teams.

  - **Catalogue any notes** and nuances pertinent to the data being collected [Example: Data codebook and/or dictionary].

Although there are several potential obstacles and/or challenges that may occur when collecting data, below are useful strategies to address them.

■ *Volume of data being collected*

The sheer amount of data within an LEA can lead to employees feeling overwhelmed. This feeling is often compounded by a series of manual processes needed to analyze data. First, review existing data processes and make necessary changes. For medium/large-sized LEAs, purchase or build in-house automation to collect and organize the data needed for analysis.

■ *Poor data quality*

If the data inputted is inaccurate or incomplete, then so too is the analysis. Most of the determinants of poor data quality stem from manual errors made during data entry. Uniform approaches to data collection and entry are important. Next, leveraging technology with the use of automation and/or drop-down fields (e.g., Excel, Access) reduces the likelihood of errors. It's also important to implement a series of regular data quality checks and retrain employees as needed.

■ *Data located in multiple sources*

Analyzing data stored in multiple sources often creates obstacles for LEAs. In addition, manually combining data across sources is time consuming and may lead to data errors. The ideal solution is to develop a centralized system that includes all of the data needed for analysis. In the event this is not feasible, a step-by-step process and/or manual can combine data across sources.

■ *LEAs with limited organizational capacity*

LEAs with limited organizational capacity should consider leveraging their small size. Ultimately, people matter, and data can't replace or supersede LEAs taking the time to listen and engage employees with the explicit goal of gaining insight aimed to improve the organization. Additionally, LEAs could consider opportunities to partner with other central office senior leadership staff who oversee finance and budget, teaching and learning, principal supervisors and/or other key important LEA functions.

4. Analyze & Interpret Data

After collecting and organizing data, schools and LEAs can use Pennsylvania's Human Capital Systems Self-Assessment tools to guide discussions about which human capital issues to prioritize and address. To improve understanding of the quantitative and qualitative data collected, leaders can use either or both of the analytic strategies described below. It's worth noting that no one strategy is better than the other and the strategies often complement and/or co-exist with one another.

■ **Descriptive** *– What happened?*

This approach provides LEAs an opportunity to learn from past organizational performance, behaviors, actions and policies. Descriptive analytics require the LEA to review historical data with the purpose of identifying common trends and patterns. Typically, this approach summarizes what happened and relies on the calculation of sums, averages, percentages, etc.

Example: The number of new employees hired in 2019-20 academic year.

Sample Tool: **Opening of School Planning Protocol** allows an LEA to reflect as a team, based on data about the effectiveness of their staffing at the beginning of the school year.

■ **Diagnostic** *– Why did it happen?*

This process helps determine what factors caused a positive or negative outcome. During this analysis, the LEA may need to identify additional data from external sources. This approach typically includes, but is not limited to, correlations and multiple regressions techniques.

Example: The number of candidates who applied for a teaching position in an LEA is up 30 percent this year. What additional contextual factors contributed to this increase in applications?

It's important to provide context and perspective for your results (e.g., compare results to what you may have expected, compare results from year to year or by type of school). In this step, consider ways to disaggregate the data that may be useful to understanding what is happening. For example, what does the data look like across different types of schools (high, middle, elementary), what are the similarities and differences between schools in

different regions, and how does the data differ by subject area taught? Below are some of the guiding questions to consider:

- **To what extent** does the analyzed data answer your original guiding questions?

- **To what extent** does the analyzed data help the organization learn, inform and improve initiatives and approaches?

- **To what extent** does the analyzed data identify limitations worth mentioning?

Note-taking template for data findings

Example:

Inquiry: Are we recruiting effective educators?	
Description of key data points	• *In the LEA's two highest need schools, 40% of applicants meet the LEA's initial screening criteria, compared to 75% in the LEA's highest performing schools. The teachers hired earlier in these schools tend to be novice teachers.* • *The high performing schools filled 90% of teacher vacancies before May 1 and all before July 1; the highest need schools filled 20% of teacher vacancies before May 1 and 50% before July 1.* • *Among novice teachers applying the to high need schools, 85% are from Prep Program A, which has a close relationship with the LEA.* • *Alumni of Prep Program A who work in the LEA's schools tend to have higher ratings on the multiple measures of the educator effectiveness system, compared to the overall average of teachers in the LEA.* • *Among all teachers of color hired in the past three years, 60% are alumni of Prep Program A.*
Interpretation of data *What is positive?* *What is negative?* *What patterns do you see?* *What might be causing the data points above?*	*The data shows that teachers who are more experienced and more effective—according to the LEA's screening criteria—are less likely to apply to the LEA's highest need schools. The data also seems to suggest that the LEA's highest need schools benefit from the LEA's relationship with Prep Program A, including on-campus recruiting and some placement of student teachers. The highest need schools attract high numbers of novice applicants from Prep Program A, which tends to produce teachers who are effective and diverse.*
Any data to investigate next to deepen understanding?	• *Number of student teachers of Prep Program A placed in the LEA, by school, over the past three years* • *Retention rates of new hires in the highest need schools over the past three years, disaggregated by prep program and by race/ethnicity*

Inquiry:	
Key findings	
Data points that support findings	

Inquiry:	
Key findings	
Data points that support findings	

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