



Five-Minute Read

Prepared by the Research Office

Data-Driven Decision Making in Education

What is Data-Driven Decision Making?

The practice known as data-driven decision making involves reviewing periodic data on certain indicators to help drive decisions related to achieving a stated goal. The concept stems from the business field where the process is often used to track sales, marketing, customer satisfaction, and other areas that speak to the overall health of the business. Goals can focus on a desired outcome by a certain point in time (e.g., \$300 million in sales by the end of the year) or focus on maintaining a threshold over time (e.g., 97% of customers will be satisfied with products they have purchased).

The idea of noting progress on the same indicators over time to gauge progress has appeal and the concept of data-driven decision making has been applied to many other fields as business processes become more popular across industries that have not historically used them. Education is one field where data-driven decision making is becoming more common. Increasingly schools, school districts, and education departments write performance goals and identify indicators that report student and teacher data.

Using Data in Education

Using data to track the status of a school district is not new. During the days of *No Child Left Behind*, districts were required to report data on student achievement, attendance, and graduation rates to state and federal Departments of Education as a way to hold them accountable for providing quality education for all students. With the passage of the *Every Student Succeeds Act* in 2015, the specific indicators used to gauge academic progress shifted, but school districts are still required to report data on an annual basis which are used to evaluate quality.

What the process of data-driven decision making adds to data tracking is the idea that the data are integral to the decisions made about a business; and further, decisions are not made without reviewing and understanding the data. Using the sales example above, a company may decide to adjust its marketing campaign if its mid-year sales are not on track to meet the \$300 million annual sales goal. By the same token, if sales are stronger than anticipated, a company may decide not to emphasize its annual holiday campaign – despite the tradition involved – and instead invest those dollars elsewhere.

Data commonly used for data-driven decision making in education focus largely on student achievement, attendance, and conduct, although teacher evaluation data and other measures are used as well. At the most basic level, teachers use data-driven decision making in their classroom regularly throughout the year. Based on student performance on class assignments and test scores, teachers determine whether students understood the material being taught. If students generally did well, they move on to the next unit. However, if too many students performed poorly, teachers may decide to reteach the concept.

Interpreting the Data

After data are gathered, they are analyzed and used to inform decisions. Multiple websites (some referenced at the end of the blog) describe the process of analyzing data. Additionally, for schools and school districts to best make data-driven decisions, it is important to understand what the data mean in a larger context. There are several ways to gain additional perspective on the data. While



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each of these is described individually below, often combinations of these strategies provide the richest context for making decisions.

- **View historical data to understand trends over time.** Looking at trends over time can help identify cycles in the ebb and flow of the data. For example, if a school has a lower-than-expected attendance rate for a 20-day period, comparing current numbers to previous years can provide additional understanding. It may be that the attendance rate drops every year at the same time, for example if the 20-day period includes a holiday or semester break. If the drop seems to be an anomaly compared to previous years, it may be explained in other ways. For example, a flu outbreak in the city may lead to lower attendance rates. Identifying as much as possible about the source of the decline can help a school figure out the best way to address it. A school's response to a flu outbreak and its response to a gradual decline in attendance over the school year would likely differ.
- **Compare data to a goal.** Additional context can also be gathered by comparing the data to a goal, as when a school district reports on the percentage of students reaching proficiency in reading or math each year compared to the state's expectation. Depending on the difference between a district's data and the state's goal, decisions on how to proceed with instruction can be made. For example, a district with a large gap might choose to implement a program to supplement the curriculum, whereas a district with a relatively small gap may choose to maintain what is already in place.
- **Couch the data in a broader data context.** By comparing local data to national data reports, school districts could better understand what their data indicate. For example, comparing district data on grade-level proficiency to national data on assessments, such as the National Assessment of Educational Progress (NAEP), would show whether a district is below, above, or on par with the national proficiency rates. This information, in turn, could provide a fuller context for determining next steps.
- **Understand the research literature.** The research literature in education can provide a better understanding of the indicators that are being tracked. For example, third-grade reading proficiency is a common data point that is tracked precisely because there is a strong body of research that has documented its link to multiple successes in high school and beyond. Knowing the research literature also can assure school districts they are tracking the correct indicators or help them switch to monitor more informative data. Ultimately, if time and money are going to be invested based on the data being tracked, it is important to be tracking appropriate indicators.

For further reading:

<https://www.northeastern.edu/graduate/blog/data-driven-decision-making/>

<https://www.datapine.com/blog/data-driven-decision-making-in-businesses/>

https://www.rand.org/pubs/occasional_papers/OP170.html

<https://www.mathematica-mpr.com/commentary/data-driven-decisions-in-education>