



It's time to take a Galilean approach to analyzing our data

During a Learning Forward Summer Conference session on the importance of teacher leadership, my colleague Andy Cole, a leadership development consultant from Fairfax County, Va., engaged the participants in a conversation about planetary motion. Cole explained that when it was believed the sun revolved around the earth, it was difficult to explain the apparent movements of the stars



and planets; the patterns just didn't make sense. For hundreds of years, early astronomers developed complex models to explain what they saw. However, it wasn't until astronomer Copernicus, and later Galileo, argued

that the earth wasn't the center of the universe that the motion of the planets began to make a little more sense.

Of course, being the enlightened individuals we are in today's information age, many of us can't imagine how the brightest of scientists could look at data staring them right in the face and repeatedly interpret it incorrectly. Yet, I would argue, when it comes to the data we collect in our schools and districts, we often aren't much different than those early astronomers. We are often so limited by our own assumptions and the structures in which we exist, we simply can't make sense of

the data before us.

Sometimes the data tell us things about our systems or ourselves that we may not want to hear. It may tell us that while we are teaching, the students aren't actually learning, or that there are leaders and teachers among us who actually don't believe all children are capable of learning. These are hard truths to acknowledge, and often, like the ancient astronomers, we'll do whatever we can to hold on to our false realities and make sense of these data with the strategies we've already tried and not confront the barriers to real progress. We are often simply too afraid to take the Galilean approach and truly respond to the data right before our eyes.

In her book, *Assessing Impact* (2008, p.104), Joellen Killion references Weiss (1998) who provides a comprehensive list of data analysis techniques that enable school personnel to make sense of and more accurately respond to data. Sample strategies include:

Clustering: Putting things together by forming classes, categories, or groups based on some common feature; for example, students whose reading level has increased more than or less than one grade level.

Educators can use these data to differentiate instruction to meet students' individual learning needs versus the aggregate needs a less-detailed review of the data might identify. These clustered data can also inform strategies coaches use as they support teachers.

Seeking trends/patterns: Identifying recurring patterns, trends, or commonalities; for example, students' use of the language of science to describe their actions in the lab activity.

This strategy can reveal data trends that otherwise go unnoticed. Schools could use this information to shift some of the conversations within their grade-level teams.

Examining outliers: Looking at the situations at the extreme ends of the data set to determine what, if any, information can be learned that does not appear in the data tending more toward the mean (for example, excessive student absentee data).

Such data can be helpful to counselors or school principals working with staff to develop strategies to engage students who appear to be bored or otherwise uninterested in school.

Strategies for making sense of data can help us take more Galilean-like approaches, where we find the information we need to accurately assess the data before us instead of forcing the data to fit a pre-conceived understanding.

REFERENCE

Killion, J. (2008). *Assessing impact: Evaluating staff development* (2nd ed.). Thousand Oaks, CA: Corwin Press & NSDC.

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