Data Teams and Instruction

by Uzma Said

Most schools are inundated with data, and staff members feel overwhelmed by what to do with the information. Reeves (2008) refers to these conditions as “Drowning in Data,” with a wealth of test scores, student demographic information, and an “increasing load of formative assessment data that may or may not be worthy of the name” (p. 89). When educators review the student assessment data, they may be able to identify what problems exist, but often do not have a clearly defined process that guides them on what to do next. According to Hess and Robbins (2012), this “data paralysis, as opposed to data analysis, often occurs because teams do not have a structure to help them reflect upon data and ask meaningful questions” in order to move ahead (p. xi).

The lack of knowledge with what to do with mountains of data is at the heart of many schools’ struggle with data usage. Anfara and Donhost (2010) point out the amount of information in the world is growing at an annual rate of 60%. At that rate, according to economist Herbert Simon, this barrage of information “consumes the attention of its recipients; hence a wealth of information creates a poverty of attention” (Anfara and Donhost, 2010, p. 56). Boudett, City and Murnane (2010) highlight many of the barriers that school leaders face as they attempt to make sense of how to use the student assessment data to improve instruction. The challenges include understanding where to begin, finding time to analyze data, strengthening the required skills to interpret results, and “building a culture that focuses on improvement, not blame” (p. 4).

**Formation of Data Teams**

Overcoming the hurdles of using data to guide instruction requires a school administration to build in some key steps. The first task involves assembling a team of educators from all levels to take an inventory of data (Borja, 2006). At the district level, there may be a data analyst whose job function includes collecting, organizing, analyzing, and displaying data about student achievement for data teams to review. This task may be done by the data team at a school site, but often needs an educator to take the lead to guide conversation about teaching and learning in the school (Killion & Bellamy, 2000). According to Boudett et al. (2010), having a few people responsible for organizing and preparing the data allows for more time for the full faculty to discuss the data. The six or seven-member team usually includes the principal or other administrators, technology coordinators, and selected teachers from each grade level. Desoff (2005) explains the rationale behind this type of representation by pointing out “if you want school-level buy-in, you have to have school-level ownership” (p. 72). Meeting in data teams allows for teachers to compare notes and plan adjustments in their instruction.

The data team approach is similar to educators working in a professional learning community (PLC). According to Schmoker (2006), true teamwork entails “a regular schedule of formal meetings where teachers focus on the details of their lessons and adjust them on the basis of assessment results” (p. 108). Working in such teams allow for teachers to recognize and share the best of what they already know. Schmoker (2006) finds this approach more meaningful than traditional professional development and training, which according to him, implies that teachers must depend on new or external guidance because they do not know enough about instruction to make serious improvements. This sentiment is echoed by Archer (2005), who shares the shift that had to occur by the superintendent of a school district in Gilroy, California, from relying on the central office to calling the shots to involving teachers:

We needed to shift from teachers just being compliant about implementing the strategies that they were trained in, to actually having to make decisions about which of those strategies to use and when. That’s where you get the next big level of growth. (p. 12)

Lack of time for collaboration, preparation and learning is one of the biggest barriers cited by teachers, based on a survey of 427 nationally represented school districts, with 92% of the respondents citing time as a challenge to spreading data-driven decision making practices (Anfara & Donhost, 2010). Scheduling time for data teams to gather on a consistent basis is a critical element in organizing for data analysis. If teachers are to use data collaboratively, they will need routine meeting times built in to the school calendar to examine data and plan for instruction. According to Steele and Boudett (2008), some schools holding weekly afternoon meetings allow for both whole-school planning and grade-level team meetings. Other schools meet outside the school grounds and attend retreats in order for collective planning. The most difficult type of time allocation is for teachers to be able to visit other classrooms for observations. This can be handled through the use of trained substitutes who could take over for teachers (Steele & Boudett, 2008). Reeves and Flach (2012) indicate that teacher teams who meet collaboratively at least twice a month to look at formative assessment results have significantly greater gains than those who meet less frequently.

The reasons cited by the research parallel what administrators have seen at our school site. Our teachers at New Horizon have also indicated time as a barrier to looking at data. To provide deliberate opportunities for collaboration, we put in prescheduled meetings and have attempted to meet monthly. Our data teams are small enough that they allow for all members to participate. Regular staff meetings allow for opportunities to gather with the entire staff, but the data team meetings provide a clear focus and dedicated time to meet for teachers at the same grade level.

**Collaboration**

The formation of data teams allows for collaboration, an important step in analyzing data. Working with others is advantageous for teachers, who usually work in isolation. The benefits of working collaboratively include organized learning, improved internal accountability and a safety net for professional growth (Steele & Boudett, 2008). Looking at data in a team allows for insights and shared instructional solutions as teachers discuss findings collectively. A collaborative approach to analyzing data promotes shared responsibility by letting teachers see their instruction as part of a larger effort to serve students more effectively. This process holds everyone to a higher standard of excellence, according to one teacher in Washington D.C., who explains, “When you’re working on a strategy by yourself, you can fudge it, but when you’re working on a strategy as a whole faculty, you have the social accountability” (Steele & Boudett, 2008, p. 56).

Another component of collaborative analysis is in the form of peer observations. Teachers who open their classrooms for peer observations allow for instructional repertoire and provide insight into school-wide instructional practices. This can only happen if trust, a major component of building data teams, has been established. According to Anfara and Donhost (2010), administrators need to cultivate “a climate of trust, a common vision, and a continuous improvement orientation rather than an orientation of blame” (p. 57). The data-use process needs to focus on solving problems, not passing judgment. This can be accomplished by establishing norms that foster trust. Putting norms of transparency and objectivity can help build data team members’ analytic skills and can eliminate the shock and frustration when looking over test results.

Peer feedback is one form of professional development that is an effective way for teachers to better understand data-driven practices and their impact on student performance and classroom instruction. Wilkins and Shin (2011) describe the three-step process of peer feedback as planning conference, observation/data collection and feedback conference. Use of the process allows teachers to learn from two perspectives- from his or her classroom and that of a peer. Wilkins and Shin (2011) shared one observer’s positive impact on watching a peer: “After observing Kaylie’s lesson, I found myself reflecting on my own teaching and got a new perspective on how to engage students” (p. 53).

New Horizon administrators have encouraged peer feedback as a form of collaboration. When the New Horizon fifth grade teacher wanted to observe the sixth grade on how a particular form of writing is taught, the Director helped with bringing in a substitute to watch the fifth grade classroom so the teacher could leave her classroom to observe. The collaborative approach has not been met with resistance as teachers realize the purpose behind such observations is to learn from each other. This has been made possible because of the safe environment and trust that has formed with the teachers. Teachers in the data teams have been working with each other for some time now, and feel comfortable having another teacher present in their classroom.

**Building Assessment Literacy**

Following the formation of a data team, the next steps involve building assessment literacy, the knowledge behind understanding terms and practices associated with testing. According to Boudett et al. (2010), these include such terms as sampling, discrimination, measurement error, reliability, score inflation, norm-/criterion-/standards-referenced tests, and score interpretation. Raw data on its own does not provide answers to problems of student achievement. Anfara and Donhost (2010) explain this lack of knowledge as a major impediment to transforming raw data into actionable information.

In addition, Popham (2009) extends the definition of assessment literacy to include formative assessments, in which “assessment-elicited evidence of students’ status is used by teachers to adjust their ongoing instructional procedures or by students to adjust their current learning” (p. 6). Examples of formative data from the curriculum may include: grades from an assignment, homework, projects, test, student portfolios, grade distribution and other performance measures based on the curriculum. According to Reinhartz and Beach (2004), determining how well students are learning using formative data allows for periodic measurement of student outcomes related to campus goals and performance objectives. In discussing the data-driven decision making trends, Pascopella (2006) shares the views of Douglas Reeves, the founder and CEO of the Center for Performance Assessment, who compares looking solely at end-of-year test results as an autopsy: “I’ve never seen a patient get better because of an autopsy” (p. 37). The key, instead, according to John Tarnuzzer, program consultant for Learning Through Technology Associates, “is to monitor data regularly, adjust instruction accordingly, and help administrators and teachers become experts in pinpointing what strategies work” (Pascopella, 2006, p. 38).

Currently, few higher education programs address assessment literacy, leaving school districts to fill in the void with professional development (Popham, 2009). According to Schafer (1993), in a survey of teachers and professors who teach assessment courses in higher education programs, both groups judged preparation of exams as the highest priority in these courses. Despite the need to understand assessment skills such as choosing assessments, administering, scoring and interpreting results, only about half of teacher education programs include a course in assessment. Schafer (1993) reports that practicing teachers cite trial and error as the most important source of their knowledge in testing and measurement (p. 122). Furthermore, once teachers are on the job, the assessment activities of teachers receive virtually no supervision by knowledgeable professionals.

Aside from analyzing class test results, today’s schools require educators to effectively navigate through the various types of data: diagnostic and norm-referenced standardized assessment data, reading assessment data, demographic and attendance trends. Educators who are not data literate and unable to use the multiple types of data to inform decisions that leads to higher student achievement, are what Ronka, Lachat, Slaughter and Meltzer (2008) dub as “data rich, but information poor” (p. 18). To gain control over the flood of data, Reeves (2008) recommends committing to data analysis as a continuous process, not an annual event. A study conducted by Bay Area School Reform Collaborative reveals that schools that reviewed data several times a month were far more likely to make greater gains than those that reviewed data a few times a year (Reeves, 2008, p. 89). Until the formation of the data teams at New Horizon Irvine, teachers at the school had been looking at the assessment data only at the beginning of the school year. Sharing the research of relevant literature with our data team helped highlight the importance of evaluating data at regular intervals.

**Data Teams Process**

The Leadership and Learning Center, an organization run by Reeves, promotes a six-step data team process: collect and chart data, analyze and prioritize needs, set short term goals, agree upon instructional strategies, determine results indicators, and monitor and reflect upon effectiveness of the strategies (Reeves & Flach, 2012). The model includes an analysis of two types of data. The first type is *effect* data which is student achievement addresses data. This can include annual standardized tests such as the Comprehensive Testing Program (CTP4) used at New Horizon Irvine, as well as benchmark tests from Renaissance Learning, such as the STAR Reading and STAR Math tests. Alongside standardized tests, data teams can look at formative assessments and student work samples. The second type of data is known as *cause* data. Examination of cause data involves close scrutiny of what the professionals are doing to promote student achievement. The review of cause data is led by essential questions such as what specific teachingpractices are associated with improvements in student learning. Ronka et. al (2008) share that a study of several high schools showed that when school leaders used the essential questions approach, school staff became more engaged in the process. Reeves (2012) points out educators must acknowledge that variations occur from one classroom to another in teaching practices and contends that looking at specific daily decisions that teachers make can lead to improved practices.

Hess and Robbins (2012) provide tools for the deep data analysis that is necessary for data teams to succeed. The process of reflection begins with a tool called Identify the Problem. Using the tool, data teams think about a problem they are facing, review data that their problem and come up with an action plan that can be tried to address the problem. Hess and Robbins point out the key components of asking the right questions and reflecting on data in order to move forward in data-driven decision making. The authors refer to Richard DuFour’s essential questions used in a PLC and expand on his ideas to come up with Tool 3, titled Three Guiding Questions. These questions ask what critical learning targets does each student need to have during the course of study, how will teachers know when each student has learned it, and how will teachers respond when a student needs intervention or extension. Hess and Robbins (2012) advocate a similar approach as Reeves when they focus on a collaborative sharing of student work around common assessments to drive improvements in instruction and transforming classroom practices.

**Summary**

Data-driven decision making does not require that everyone involved must be a statistician. Rather, the research conducted for the purpose of this study indicates that most of the steps are do-able if a school makes an intentional effort to make a change. Bringing staff onboard is helpful, but not a prerequisite to evolving into the process of data teams. Reeves (2011) urges for school leaders to abandon the notion of having complete buy-in: “Effective change requires that people sacrifice time and energy- and pre-existing beliefs. Wise leaders do not conduct an endless search for buy in, but acknowledge the truth- change is difficult and always involves opposition” (p. 40). The path to school improvement will be faster, richer and easier to manage if schools take advantage of the data team process and begin to set up the necessary structures to look at data. Lujan (2010) likens data to a double edged sword. One side- the one that inundates school leaders with overwhelming and confusing statistics-can wound you. The other side is “the reflective edge that allows students, parents, and instructional leaders to see progress, be motivated by it, and gain knowledge to become our very best” (p. 39).

Our implantation of data teams at New Horizon Irvine has seen parallels between the research we’ve come across and the steps we’ve taken to form collaborative teams. What stood out for us most was that most of the steps we put in place to build trust and ensure collaboration were validated by much of our research, but by two books in particular in our literature review, *The Data Toolkit* and *Data Wise*. We read *Data Wise* after the initial steps had been put in place, and the similarity between what the authors recommended and what we had instituted were reassuring and demonstrated process validity (Hendricks, 2009). Knowing that our methods were already part of someone else’s research ensured for us that we were on the right track and launched an initiative that has been documented by other researchers. We could look closely at these two resources as we continued our research and felt confident in our data team process.

References

Anfara, V.A., & Donhost, M. J. (2010, November). Data-driven decision making. *Middle School Journal, 42*(2), 56-63.

Archer, J. (2005, September). Forward motion. *Education Week, 25*(3), 12-16.

Borja, R.R. (2006, May). Voices of experience. *Education Week, 25*(35), 35

Boudett, K.P., City, E. A., & Murnane, R. J. (Eds.) (2010). *Data wise: A step-by-step guide to using assessment results to improve teaching and learning.* Cambridge, MA: Harvard Education Press.

Desoff, A. (2005, October). Learning how to use data. *District Administration*, 72.

Hendricks, C. (2009). *Improving schools through action research: A comprehensive guide for educators*. Columbus, OH: Pearson Education, Inc.

Hess, R. T., & Robbins, P. (2012). *The data toolkit: Ten tools for supporting school improvement.* Thousand Oaks, CA: Corwin, A Sage Company.

Killion, J., & Bellamy, T. (2000, Winter). On the job: Data analysts focus school improvement efforts. *Journal of Staff Development, 21*(1), 27-31.

Lujan, J. (2010, April). Educators use student performance data to plan, implement, and evaluate. *Journal of Staff Development, 31*(2), 38-40.

Pascopella, A. (2006, January). Nitty-gritty data. *District Administration, 42*(1), 37-41

Popham, W. J. (2009) Assessment literacy for teachers: Faddish or fundamental? *Theory into Practice, 48*(1), 4-11.

Reeves, D. B. (2008, December). The learning leader: Looking deeper into the data. *Educational Leadership, 66*(4), 89.

Reeves, D.B. (2011, January). Fact or fiction. *American School Board Journal*, *198*(1), 40-41.

Reeves, D.B., & Flach, T. (2012, May). From drowning in data to evidence of impact: Best practices for busy teachers and leaders [webinar]. Retrieved from http://www.leadandlearn.com/resource-center/webinars/

Reeves, D.B. (2012, June). Uninformative assessment. *American School Board Journal,* *199*(6), 34-35.

Reinhartz, J., & Beach, D. M. (2004). *Educational leadership: Changing schools, changing roles.* Boston, MA: Pearson Education, Inc.

Ronka, D., Lachat, M.A., Slaughter, R., & Meltzer, J. (2008, December). Answering the questions that count. *Educational Leadership, 66*(4), 18-24.

Schafer, W. D. (1993, Spring). Assessing tomorrow’s teachers. *Theory into Practice, 32*(2), 118-126.

Schmoker, M. (2006). *Results now: How we can achieve unprecedented improvements in teaching and learning.*  Alexandria, VA: Association for Supervision and Curriculum Development.

Steele, J.L., & Boudett, K.P. (2008, December). The collaborative edge. *Educational Leadership, 66*(4), 54-59.

Wilkins, E.A., & Shin, E. (2011, February). Peer feedback: Who, what, when, why and how. *Kappa Delta Pi Record, 46*, 112-117.