Bryan Goodwin

Get All Students to Speak Up

At the turn of the last century, Vilfredo Pareto observed that in different societies across different eras, 80 percent of a nation's wealth tended to be concentrated in the hands of 20 percent of the population. Later, quality management guru Joseph Juran (1975) noticed a similar pattern in products: Most of a given product's defectiveness came from a few recurring defects.

This phenomenon of the "vital few and trivial many" (Juran, 1975, p. 8) has surfaced in uncanny ways in many other areas. Businesses typically find that 80 percent of their revenues come from 20 percent of their product catalog (Schrage, 2014); criminologists see that 80 percent of crimes are committed by just 20 percent of criminals (Eck, Clarke, & Guerette, 2007); and 80 percent of points in professional basketball are scored by 20 percent of the players (Perry, 2008).

80-20 Classroom Interactions

This same pattern plays out in classroom discussions. Researchers have found that a small portion of students tend to account for a large portion of the discourse that occurs. For example, a study of 1,245 students in secondary science classrooms (Jones, 1990) found that 15 percent of students dominated the discussions, with these students contributing to an average of 16 interactions per class, compared with 4 interactions for their remaining classmates.

Of concern to educators is that students who tend to dominate classroom discourse also tend to be high performers, and those who remain quiet tend to be low performers, the very students who could most benefit from participation. A data analysis of the 265,000 students in the Toronto public school system (Zheng, 2009), for example, found that students who reported feeling comfortable participating in class were more likely to test at proficient levels and be on track to graduation than students who reported that they rarely or never participated in class.

Indeed, when it comes to class participation and student outcomes, the poor appear to get poorer. Low-achieving students tend to demonstrate progressively lower rates of classroom interactions the longer they stay in school, often descending into a downward spiral of disengagement (Good, Slavings, Harel, & Emerson, 1987).

What can teachers do to spread the wealth of their interactions with students?

Restore the Balance

What can teachers do to spread the wealth of their interactions with students? Walsh and Sattes (2005) suggest a few obvious fixes. Teachers should be aware that there's a tendency to interact most with students in the front row and center seats of classrooms—those sitting in a T-shaped *action zone* (Sauer, Popp, & Isaacs, 1984). By changing seating charts frequently and moving around the classroom while asking questions, thus shifting the position of the action zone, teachers can avoid directing interactions to the same handful of students.

Beyond that, instead of posing a question to the entire class and waiting for voluntary answers, teachers can use a directed approach to call on individual students (Walsh & Sattes, 2005). One such approach is called *heads together*: After students number off into groups of four and work together to formulate a response to a teacher question, the teacher selects a number and asks all students with that number to hold up a card showing the correct response. Maheady, Mallette, Harper, and Sacca (1991) found that this approach improved student performance and time on task;

in addition, students preferred it to traditional whole-class discussion.

It's equally important, according to a recent review of research literature (Kelly & Turner, 2009), to ensure that teachers' responses to students aren't highly evaluative—for example, "Right!" or "Wrong!" Such responses can cause lower-performing students to avoid speaking up out of fear of embarrassment. The researchers concluded that this small adjustment in teachers' responses to students could have a big effect on student motivation and engagement.

Enjoy the Silence

Perhaps the most important thing teachers can do to rebalance classroom interactions is something we've known for decades, ever since it emerged somewhat accidentally from research in the late 1960s. While evaluating the effects of a science curriculum on student dialogue, Rowe (1969) recorded hours of student-teacher interactions in the classroom and began to observe a peculiar phenomenon. In most classrooms, student-teacher dialogue occurred in rapid-fire fashion; teachers peppered students with questions, and students responded quickly with short, clipped answers. But in three of the classrooms, teachers' questions were followed by long pauses before students responded.

Rowe found that the pauses, which she called *wait time*, extended for three seconds or more, both after teachers' questions and after students' responses. In contrast, teachers in the other classrooms provided hardly any wait time; students jumped in with responses so quickly that Rowe couldn't even measure the wait times with a stop watch. More important, Rowe (1986) found that in the classrooms with longer wait times, students' responses were three to seven times longer, as the students provided evidence and explained their reasoning.

A more recent study of college classrooms (Larson & Lovelace, 2013) found that wait time was positively correlated with the complexity of a professor's questions: Questions that called for higher-level thinking—that asked students to evaluate ideas or express original insights—were followed by longer pauses than low-level questions were. Professors who asked the most questions tended to ask more low-level questions, leading the researchers to arrive at a less-is-more principle: Asking fewer, more thoughtful questions is more effective than firing off a barrage of low-level questions.

Disrupting the Natural Order

Through two decades of subsequent research, Rowe (1986) found that longer wait times disrupt the usual 80-20 rule of student interactions. When wait times are brief or nonexistent, interactions tend to come only from a handful of students. Longer wait times encourage more students, especially lower-performing ones, to participate in classroom discussions. Or as Rowe (1986) put it, "Under the longer wait time schedule, some previously 'invisible' people become visible" (p. 45).

Changing such a familiar pattern is not easy. At first, when teachers pause after questions, the wait can be uncomfortable.

But perhaps that's the point. The natural pattern in classrooms is for only a few students to benefit greatly from interactions. To restore the balance, we must first recognize that this pattern occurs and then thoughtfully counteract it with intentional teaching practices and . . . some pauses. EL

References

Eck, J. E., Clarke, R. V., & Guerette, R. T. (2007). Risky facilities: Crime concentration in homogeneous sets of establishments and facilities. *Crime Prevention Studies, 21*, 225–264.

Good, T. L., Slavings, R. L., Harel, K. H., & Emerson, H. (1987). Student passivity: A study of question asking in K–12 classrooms. *Sociology of Education, 60*, 181–199.

Jones, M. G. (1990). Action zone theory, target students and science classroom interactions. *Journal of Research in Science Teaching, 27*(8), 651–660.

Juran, J. M. (1975). The non-Pareto principle; Mea culpa. *Quality Progress*, *8*(5), 8–9.

Kelly, S., & Turner, J. (2009). Rethinking the effects of classroom activity structure on the engagement of low-achieving students. *Teachers College Record*, *111*(7), 1665–1692.

Larson, L. R., & Lovelace, M. D. (2013). Evaluating the efficacy of questioning strategies in lecture-based classroom environments: Are we asking the right questions? *Journal on Excellence in College Teaching, 24*(1), 105–122.

Maheady, L., Mallette, B., Harper, G. F., & Sacca, K. (1991). Heads together: A peer-mediated option for improving the academic achievement of heterogeneous learning groups. *Remedial and Special Education*, *12*(2), 25–33.

Perry, M. J. (2008, August 10). Top 20% of NBA players scored 80% of total points [blog post]. Retrieved from *Carpe Diem* at http://mjperry.blogspot.com/2008/08/top-20-of-nba-players-had-795-of-total.html

Rowe, M. B. (1969). Science, silence and sanctions. *Science and Children, 6*(6), 11–13.

Rowe, M. B. (1986). Wait time: Slowing down may be a way of speeding up! *Journal of Teacher Education, 37*(1), 43–50.

Sauer, R., Popp, M., & Isaacs, M. (1984). Action zone theory and the hearing-impaired student in the mainstreamed classroom. *Journal of Classroom Instruction, 19*(92), 21–25.

Schrage, M. (2014, August 4). Lafley's P&G brand cull and the 80/20 rule [blog post]. Retrieved from *Harvard Business Review Blog Network* at http://blogs.hbr.org/2014/08/lafleys-pg-brand-cull-and-the-8020-rule

Walsh, J. A., & Sattes, B. D. (2005). *Quality questioning: Research-based practices to engage every learner*. Thousand Oaks, CA: Corwin.

Zheng, S. M. (2009). *2006 student census: Correlations of school experience with student demographics and achievement*. Toronto: Toronto District School Board, Organizational Development Department, Research and Information Services.

Bryan Goodwin (bgoodwin@mcrel.org) is chief executive officer at McREL, Denver, Colorado. He is the author of *The 12 Touchstones of Good Teaching: A Checklist for Staying Focused Every* Day (ASCD, 2013).