

# What makes for a good teacher?

## Lessons from Billy Beane's Oakland A's and research on teacher attributes

By Bryan Goodwin

In the book, *Moneyball: The Art of Winning an Unfair Game*, Michael Lewis describes how Billy Beane, general manager of the Oakland Athletics, helped his small-market club compete successfully against teams that spent two to three times as much on player salaries as the A's. From his own experience (Beane was himself a former first-round draft pick who had failed to measure up to his scouting reports), he knew that just because a player has all the "tools" scouts look for (height, strength, speed, agility, and a good swing), it doesn't mean he'll necessarily help the team win. After retiring as a player to join the A's front office, Beane decided that many commonly used metrics in baseball, such as a player's batting average and physical attributes, do not accurately measure their real contributions to a team's success. He also recognized that as a player, his own quick temper and self-doubt had undermined his physical abilities. Thus, he understood the importance of finding players with the right personality traits or "intangibles" to succeed in the game. Using a new set of metrics, such as players' ability to draw walks and their internal makeup, Beane was able to field a team of overlooked players who compete on par with much larger payroll teams, such as the New York Yankees and the Boston Red Sox.

So what does any of this have to do with teachers? Perhaps a great deal. With the hiring season for teaching underway, many schools, like the A's,

might feel they are competing on an unfair playing field, losing talented individuals to wealthier school districts or higher-paying, private-sector employers. More important, research suggests that, like many major league teams, schools could be overlooking some important metrics or even using the wrong metrics to select teachers.

### What matters more

Here are teacher attributes that the research says are strongly related to student achievement:

- **Some experience.** Economist Eric Hanushek found in several major studies of teacher experience that increases in teacher experience tend to have a positive relationship with student achievement for the first few years of a teacher's career before leveling off at around five years of experience.<sup>1</sup> Certainly, some teachers continue to improve their abilities throughout their careers. But what this finding suggests is that, on average, being in the classroom of a teacher with 15, 20, or 25 years of experience is no more beneficial for students than being in a classroom with a teacher who has 5–6 years of experience.
- **Preparation in content and pedagogy.** In its 1996 report on teacher quality, *What Matters Most*, the National Commission on Teaching and America's Future, chaired



by Stanford researcher Linda Darling-Hammond, reported that "literally hundreds of studies confirm that the best teachers know their subjects deeply, understand how people learn them, and have mastered a range of teaching methods."<sup>2</sup> In short, teachers need solid preparation in their subject area, in teaching methods, and in what researcher Lee Shulman describes as pedagogical content knowledge—that is, strategies for teaching a particular subject area.

- **Strong academic preparation.** In her book, *Teacher Quality: Understanding the Effectiveness of Teacher Attributes*, Jennifer King Rice (2003) reports that many studies have found a positive effect on the performance of students whose teachers attended a selective college (i.e., a college with above-average entrance requirements). This effect is most pronounced with high school students and lower-income students.

<sup>1</sup> Hanushek, E. A., Kain, J. F., O'Brien, D. M., Rivkin, S. G. (2005). *The market for teacher quality*. (Working Paper 11154). Cambridge, MA: National Bureau of Economic Research.

<sup>2</sup> National Commission on Teaching and America's Future. (1996). *What matters most: Teaching for America's future*. New York: Author.

- **Verbal and cognitive ability.**

In a much publicized 2002 report on teacher quality, then Secretary of Education Rod Paige claimed that teacher's verbal and cognitive ability "accounts for more variance in student achievement than any other measured characteristic of teachers."<sup>3</sup> Ferguson and Ladd's analysis of the achievement of nearly 30,000 Alabama fourth graders concluded that 15.1 percent of the observed variance in student achievement could be correlated with teacher's ACT scores (as compared to just 2.1 percent of the variance in achievement being related to student poverty rates).<sup>4</sup> However, Darling-Hammond and Peter Youngs have noted that while teachers certainly need strong verbal and cognitive abilities, other factors also have an impact on their success in the classroom.<sup>5</sup>

### What matters less

These two attributes, which are commonly used metrics for hiring and rewarding teachers, have a weak correlation with student performance:

- **Traditional licensure or credentials.** Researchers have found that while students typically fare worse in classrooms of teachers who are not certified in their subject area, there are few differences in

the achievement of students whose teachers hold traditional credentials or licenses and those with emergency credentials. For example, in a report provocatively titled, *Does Teacher Certification Matter?*, Dan Goldhaber of the Urban Institute and Dominic Brewer of the RAND Corporation reviewed performance and teacher licensure data for more than 3,000 high school students and found that "holding all else constant, there is no evidence that teachers with standard certification outperform those with emergency credentials"; thus, they concluded, "although teacher certification is pervasive, there is little rigorous evidence that it is systematically related to student achievement."<sup>6</sup>

- **Advanced degrees.** In her research review, Rice reports that several studies conducted since the 1970s "have found no discernible effect of teachers having a masters' degree or higher on student achievement."<sup>7</sup> Indeed, three studies of elementary education reported that having a master's degree was *negatively* correlated with student achievement. One exception to these findings is in the area of high school mathematics and to a lesser extent science, where students appear to perform better in classrooms with

teachers who have a master's degree in their respective subject areas.

### Considering intangibles

The attributes I have described might all be considered "tangibles," or characteristics that can be measured or quantified. But savvy principals know that teachers need to possess several intangible attributes to succeed in the classroom. Here are a few intangibles that research suggests are important for teachers' effectiveness with students:

- **Belief that all students can learn.** Since the famous Rosenthal experiment in the late 1960s, the Pygmalion effect—the observation that teachers' expectations for their students affects how well students learn—has been well documented. But beyond simply having high expectations for students, Rosanne Liesveld and Jo Ann Miller of the Gallup Corporation note that "great teachers set the *right* expectations for each student. Talented teachers have an innate sense of what those expectations should be."<sup>8</sup>
- **Belief in their own abilities.** A RAND Corporation study conducted more than 30 years ago found that teachers' sense of efficacy—their belief in their own abilities to promote

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<sup>3</sup> U.S. Department of Education. (2002). *Meeting the highly qualified teachers challenge: The secretary's annual report on teacher quality* (p. 46). Washington, DC: Government Printing Office.

<sup>4</sup> Ferguson, R. F. & Ladd, H. F. (1996). How and why money matters: An analysis of Alabama schools. In Ladd, H.F. (Ed.), *Holding schools accountable: Performance-based reform in education*. Brookings Institution Press: Washington, DC.

<sup>5</sup> Darling-Hammond, L., & Youngs, P. (2002, December). Defining "highly qualified teachers": What does "scientifically-based research" actually tell us? *Educational Researcher*, 13–25.

<sup>6</sup> Goldhaber, D., & Brewer, D. (2000). Does certification matter? High school teacher certification status and student achievement. *Educational Evaluation and Policy Analysis*, 22(2), 129–145.

<sup>7</sup> Rice, J. K. (2003). *Teacher quality: Understanding the effectiveness of teacher attributes* (p. 26). Washington, DC: Economic Policy Institute.

<sup>8</sup> Liesveld, R. & Miller, J. A. (2005). *Teach with your strengths: How great teachers inspire their students*. Gallup Press: New York.

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students' learning—was a teacher characteristic related to student achievement.<sup>9</sup> Teaching is rife with challenges, and research on teacher efficacy suggests that teachers' belief in their ability to overcome challenges is as important as their actual abilities. Conversely, as Albert Bandura, who conducted several studies of self-efficacy, wrote in 1997 (and as Billy Beane discovered while standing in the batter's box) "insidious self-doubts can easily overrule the best of skills."<sup>10</sup>

- **Ability to connect with students.** In a summary of research presented in his book, *Qualities of Effective Teachers*, James Stronge (2002) notes that chief among these qualities is teachers' ability to demonstrate to students that they care about them as individuals, by listening to them, understanding them, and getting to know them.
- **"Withitness."** McREL research translated in the ASCD publication *What Works in Schools*, points to the work of Jacob Kounin, who coined the term withitness to describe what he observed as a key disposition of effective teachers. Good teachers have what amounts to "eyes in the back of their head" and move quickly to resolve minor classroom management issues before they become more serious.
- **Emotional objectivity.** *What Works in Schools* also describes the importance of teachers being able to address disciplinary

infractions without becoming emotionally involved or personalizing students' actions. Good teachers understand the importance of keeping their cool in the classroom.

### Implications

Three key observations emerge from this review of research on teacher attributes. First, because no single attribute is a guarantee of teacher effectiveness and few candidates are likely to display all of the attributes of effective teachers, school leaders should look for and weigh several attributes when interviewing teacher candidates.

Second, school leaders may need to re-examine the metrics, explicit or implicit, they use to select teachers. Take, for example, the requirement that all schools hire highly qualified teachers. A recent study of 2,500 classrooms, where most of the teachers met NCLB requirements for highly qualified teachers, concluded that instructional quality has little or no relationship with the "attributes typically used to regulate teacher quality."<sup>11</sup> So while hiring a highly qualified teacher may be a regulatory necessity, it's no guarantee of *high-quality instruction*.

Likewise, school leaders may need to re-examine their implicit metrics to determine why they overlook strong applicants. For example, after analyzing the hiring patterns of 15,000 graduates from teacher education programs, researcher Dale Ballou noted in the *Quarterly Journal of Economics*, that "applicants from better colleges do not fare better in the [education] job ... Remarkably, they do somewhat worse."<sup>12</sup>

Third, intangible traits, such as teacher disposition and attitudes, play an equally strong role in contributing to teacher effectiveness. While intangible attributes may be difficult (if not controversial) to quantify or measure, they are nonetheless observable. That's why principals who are successful in recruiting effective teachers understand the importance of the interview process, including observing prospective teachers in the classroom. Classroom observations can surface whether teacher candidates possess the right intangibles to be successful with students and to contribute positively to a school's culture.

### Final thoughts

Admittedly, any analogy comparing baseball players to teachers has its flaws. For starters, there's really little difference between the best and worst ballplayers—by most measures, just three hits a week separates all-stars from benchwarmers. But there is a big difference in the quality of our nation's teachers and the contributions they make to student success. Moreover, baseball is a game—our national pastime. In the grand scheme of things, it matters little whether one team beats another. But for our students, the quality of their teachers can make the difference between success and failure. Selecting the right teachers may be the most important hiring decisions anyone can make.

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<sup>9</sup> Armor, D., Conroy-Oseguera, P., Cox, M., King, N., McDonnell, L., Pascal, A., Pauly, E., & Zellman, G. (1976). *Analysis of the school preferred reading programs in selected Los Angeles minority schools*. (Report No. R-2007-LAUSD). Santa Monica, CA: Rand Corporation.

<sup>10</sup> Bandura, A. (1997). *Self-efficacy: The exercise of control* (p. 35). New York: W.H. Freeman and Company.

<sup>11</sup> Ballou, D. (1996). Do public schools hire the best applicants? *The Quarterly Journal of Economics*, 111(1), 98–133.

<sup>12</sup> Pianta, R. C., Belsky, J., Houts, R., Morrison, F. (2007, March). *Opportunities to learn in America's elementary classrooms*. *Science*, 315, 1795.